

**Line by Line Commentary
on Aristotle's *De Anima***

Book III

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III-1

OVERALL

The chapter falls into two parts (before and after 425a13).

Aristotle asks whether there might be a sixth sense which we happen not to know. He shows that the five special senses have a certain orderly arrangement that makes them a complete set. So it seems reasonable that there exists no sixth sense that we lack and do not know about.

The second part of the chapter takes up the common sensibles and the incidental sensibles (the second and third kinds mentioned in II-6). Aristotle argues that it cannot be by a sixth sense that we sense the commonalities of the five. Rather, we can differentiate the common sensibles because there is a “common sensing” (a together-sensing) by the five. This also explains how we are able to sense the incidentals.

The first part of the chapter concerns material and efficient causes (organ and media) although the final cause enters in. The second part is in terms of formal causes. A short part at the end follows from a final cause.

TEXT

424b22-24

That there is **no other sense**, apart from the five
(and by these I mean sight, hearing, smell, taste, and touch)
we **might be convinced** by the following considerations.

Aristotle implies that there is some conjecture involved in this premises. That there is no sense other than the five might seem quite reasonable **if** all of the following is the case:

424b24-26

We have even now perception of everything of which touch is the sense (for all **the qualities** of the **tangible, qua tangible**, are perceptible to us by touch).

He begins with the qualities that make an object touchable. It is the proportion of **hot, cold, fluid, dry** which determines the degree of solidity or fluidity to the touch. But these are also the very qualities which we sense by touch (as he said in II-11). Since we have the sense of touch, there would be no touchable sensible that we could miss.

424b26-27 Also, if we lack any **sense**, we must also lack a **sense-organ**.

For Aristotle sense and sense-organ are one and the same concrete thing (II-12).

424b27-30 Every kind of sensible [object] which we perceive **through** direct contacting is perceptible by touch, which we in fact have,

while all those [sensible objects] which we perceive **through media** and not by direct contact are perceptible **by means of the simples (I mean, for example, air and water)**.

The word “simples” refers to the four elements, because each element has only two qualities (fire extremely hot and dry, air hot and fluid, water cold and fluid, earth cold and dry), whereas all other bodies are mixtures of all four qualities.

Now he will argue that if the senses and the media are arranged in a certain way, then it would follow that there is no sense we miss.

He does this in terms of media and organs:

424b31-34 And the situation is such that **if many [sensibles]** different in kind from each other are perceptible **through one [medium]**, then whoever has a sense-**organ** of that [medium] will necessarily **be capable of perceiving** both, e.g. if the sense-organ is [made out] of air (*ἐξ ἀέρος*), and air conveys both sound and color;

To be “capable of perceiving both” means that the animal will have the necessary organs

for both (since the sense and the organ are one thing). He is certainly not saying that **the same organ** will pick up the other sensibles in the one medium, since he knows that we don't smell and hear with our eyes.

Aristotle said that the ear contains an enclosed column of air. Now his if-clause says that if an animal has such an "air-organ," the animal will also have **the other organs** for all other sensibles conveyed through air.

So far the conclusion is that an animal with even one sense in a medium will always have organs also for **all other sensibles in that medium**.

Aristotle said (II-2) that some animals have only the sense of touch, but evidently he knows of no animal that has only one distance sense without the other two. He thinks this might be necessarily so.

Later in the chapter Aristotle will use the final cause to support this argument by saying that even the mole, although an exception since it is blind, does have rudimentary eyes under the skin. Since Aristotle points out the mole's eyes, it is clear that he means that the animals who have an organ **in one medium**, will also have **organs** for all other kinds of sensibles carried **by that medium**. Now we come to the other medium. So, now the cross-over:

424b34-425a3

while **if** there is **more than one medium** for **the same sense-object**, e.g. both air and water for color, (**for** both are transparent), then **he who has one** of these **will perceive whatever** is perceptible **through both**.

In II-7 and II-8 we were told that although our ears contain air, we can hear sound in both air and water. Our eyes contain water, but we can see color not only in water but also in air. Now Aristotle concludes that if the animal is capable of sensing all sensibles in one medium, the same organs which can do this can also pick up the sensibles in the other medium.

SEE ENDNOTE 80. ON ONE SENSE-OBJECT IN TWO MEDIA

If his "if" clauses hold, the arrangement insures that if an animal has any one distance-sense even just in one medium, then it also has every sense there is.

Here is another summary of the argument:

If we have what comes by means of contact (touch),

and,

If (as it seems) an animal having one media-organ for **either** air or water will also (have the organs to) sense **anything else in that one medium**.

and

If sense-organs made of air can sense **in water** (and vice versa),

and

If only water and air can be media of distance-sensing,

then:

it follows that we know all senses there are.

Next he shows that there are no other media.

425a3-9

Now, **sense-organs** are made from two of these simples only, air and water (for the pupil of the eye is of water, the organ of hearing of air, and the organ of smell of one or other of these),

Of course the eyes and ears are not made **just** out of air or water; rather they are made of flesh but the part that picks up the media-vibrations is air or water. Aristotle's theory is that the contained air in the ear, and water in the eye becomes continuous with the external medium and can therefore be moved by it.

Of the four elements only air and water can be media for sensing. This is shown by arguing that sense-**organs** cannot be made so as to contain the other two (fire and earth).

while **fire** either belongs to none of them [the organs] or is common to all (for nothing is capable of perceiving without warmth),

and **earth** either belongs to none of them or is a constituent specially and above all of that of touch.

So there would remain no sense-organ apart from those of water and air,

and these some animals possess even now.

Fire is too volatile. With earth the organ would be solid and tangible.

The last line assumes as he argued earlier, that if we have one air and water sense then we have all senses in those media. Since we have air and water organs now, it seems from the argument here that there cannot be an unknown sense.

SEE ENDNOTE 81. ON SOLIDITY

425a9-13

It may be inferred then that **all** the senses are possessed by those animals which are **neither imperfect nor maimed** (**for even the mole apparently has eyes under the skin**); hence, unless there is some other body and a property **possessed by none of the bodies existing here and now**, no sense can be left out.

Here we see that the argument does rely on the final cause: Mostly and routinely, nature would not make incomplete creatures. Aristotle assumes that nature would not make a sixth kind of sensible object but fail to give it to any of the animals we know here and now. (This is where he went wrong. Nature does give birds, bees, and bats some extra senses.) He thinks that then all other animals would be incomplete. Incomplete animals like the mole do exist, but they are exceptions, and even the mole has all the organs at least rudimentarily.

The argument presents a neat pattern. It is a demonstration only if his premises hold, and they all begin with "if." So it would not be right to argue against Aristotle: "Look, if we happened not to have smell, your argument would prove that there couldn't be a third distance-sense." Such an objection begins with "If we lacked smell..." This objection **assumes** that Aristotle's if-premises are wrong. Beginning with Aristotle's "if," we could not have lacked smell if we have even one distance sense.

Aristotle observed empirically that his "if" clauses apply to the animals he knows here and now. If they see, they also all hear and smell. But this is not the basis of his argument. Rather, he ponders by what orderly arrangement this would be so.

SECOND PART OF THE CHAPTER:

425a14 Nor again is it possible for there to be a sense-organ special for the common-sensibles

He just showed that there is no other organ for a sixth sense-quality. That discussion was in terms of material causes, organs and media. Still in material terms Aristotle says here that there is no sixth organ for the commons either. We can take it from this spot, that the supposed sixth sense for the commons (which he will now begin to discuss) would not have its own access to the commons, since it has no organ of its own.

SEE ENDNOTE 82. ON NO SPECIAL ORGAN FOR THE COMMONS

425a14-20 the common-sensibles which we perceive by each sense incidentally

Some commentators have thought that the text must have lost the Greek word for “not.” Aristotle says here that the commons (motion, figure, etc.) are sensed incidentally, whereas in II-6 he said they are sensed in themselves as such (kath auta). But there need not be a contradiction (as Hamlyn rightly points out, p. 117). Aristotle is not saying here that we sense the commons only incidentally. We sense them in both ways. Each sense senses motion, size, etc. directly as the white moves or as the loud moves, although not as common. Each sense also senses the objects of every other sense incidentally (indirectly). So we sense the commons incidentally by each of the five (as he says here). But we sense them in themselves as such (kath auta) as common by the common sensing which he will introduce a little further on.

e.g., movement, rest, figure, magnitude, number, and one;

for we perceive all these through movement, e.g. magnitude through movement (hence also figure, for figure is of magnitude), what is at rest [is perceived] through an absence of movement,

The list of commons is not quite the same as in II-6: “One” has been added! It comes at the end of the list, and then again at the end of the passage. This will be important.

What does Aristotle mean by saying that we sense all the commons “by motion?” He might mean **by our motion**, as when we walk around something to sense its shape and size, or glide our hand over something, perhaps also smelling and tapping it so that we can smell and hear its size. Or, we might trace the outline of something with a finger, or perhaps with a scanning movement of our eyes, or an inward motion (as he discusses in M&R 452b14). We can sense whether there is an interruption as we feel our way across. If we sense no interruption then we sense **one** thing.

Aristotle might mean also that we sense all commons **by the thing’s motion**. For example if a thing moves, we get to see that it has three-dimensions. Otherwise we might see only two dimensions. Or, consider the motion of a point or a line that generates a geometrical figure (all figures can be generated by a moving line). We sense number by the discontinuity we hear, for example as one stone after another moves and falls down.

In the West we are often taught that we sense only static momentary bits, so that sensing a motion seems to depend on a comparison between the moments. For Aristotle, motion is continuous and the continuity is sensed directly. Only because we sense continuity, can we also sense the interruptions of continuity. “One” is sensed through motion when there is no interruption. Aristotle is everywhere in his works at pains to argue against atomic bits, whether irreducible particles or atoms of time (e.g., *Physics*).

For Aristotle the sensing of motion does not require memory. All animals with more than one sense can sense motion, but only some animals have memory. A worm can sense something moving. Sensing the commons does not require “the motion” he discusses in his book on *Memory and Recollection*, the motion of memory-images (MR II, 452b10-25).

Assure yourself that your experience can be described in this way. You can **see** whether or not the leaves of the tree are moving in the wind, and you can also **hear** them rustle. You can climb into the tree and put your hand among them, to sense their motion by **touch**. If something smelly moves by you, you can smell it moving toward you and away. You can hear the trucks, coming and going.

number through negation of continuity

and also by the special objects

for each sense perceives **one**.

He listed “number” and “one” last, because he is going to continue to discuss “one.” We sense number (one, or more than one) through continuity or its interruption, **and also** each sense senses one.

We can read this “one” in four ways which do not contradict each other:

- 1) the quantity “one;”
- 2) one sense-object, for example just color, not also sound.
- 3) one color (red), or just one smell, or one temperature.

But most importantly it means:

- 4) “one thing.”

Seeing senses one thing, and hearing senses one thing, but so far we have not yet understood how we can see and hear **the same one thing**. We will understand this if he can show us how what he calls “the commons” are sensed **as common** across the five, but he has not yet shown this. So far we only have how **each** sense senses one, just in its own special object. One white. One sound. But how do we see **the same one thing** which we also hear? We need to follow Aristotle closely in this (also in the next chapter) as he derives the **same commonly-sensed one thing**.

With Western habits we would say that we “know” it to be the same thing across the five senses. So we must notice that Aristotle argues that it is because of the common sensing that we can **sense** it as **the same** thing.

Aristotle will first argue that our sensing and differentiating “one” and all the other commons can **not** occur by means of an additional sense. There cannot be a sixth sense that would sense what the five have in common. Then he will say how we do sense the commons as common, (including thereby a same one thing).

425a20-22

Hence it is clear that it is impossible for there to be a special sense for any of these, e.g. movement. **For** in that case it would be **as we now perceive the sweet by sight**;

If there were a sixth sense for the commons, we would perceive them as we now perceive sweet by sight, but how do we perceive sweet by sight? Aristotle has not mentioned this up to now. It was not mentioned in II-6. There, under “incidental sensing” he mentioned only the son of Diarous.

Do we really **see** sweet, and **taste** white? We see the sweet ice cream we are tasting, and we taste the white of the ice cream we see. As we crush the cone inadvertently, we see what makes the sound we hear. A little further on (425b30) Aristotle explains how each sense incidentally senses what the others sense as such.

SEE ENDNOTE 83. ON FIVE KINDS OF SENSING

But why does Aristotle say that if there were a sixth sense for the commons, we would sense them “as we now sense sweet by sight?” At first it seems just the opposite. Why wouldn’t a sense just for the commons sense them in themselves as such?

But how could a sixth sense obtain **what is common to the five**, i.e., what is sensed in each of the five? Aristotle said earlier that there is no sixth organ, so the sixth sense for what is common to the five would have to get the commons **from them**. It would have to get the commons from senses **other** than itself. So it would be as we see sweet.

425a22-24

and **this we do because** we in fact have **a perception of both, as a result of which we recognize them together** (hama)

when they fall together (τοῦτο δ’ ὅτι ἀμφοῖν ἔχοντες τυγχάνομεν αἴσθησιν, ἢ ὅταν συμπέσωσιν ἅμα γνωρίζομεν).

Aristotle is showing that the incidental sensing-across is possible only because we sense both in one sensing. The senses sense **together**. Notice that Aristotle does not say that we sense them together **because** they happen to occur together. Rather, the reverse: Only by together-sensing can we recognize when they happen to occur together.

The tasted sweet is incidentally **seen**, but this is possible **only because** there is **a single joint sensing**. Yes, sweet and white may **happen** together by happenstance, but don’t say that they can be sensed together **because** they happen together. That they can happen together is obvious, and the fact that we do recognize this when it happens is also obvious. From these obvious facts Aristotle argues that **to be able to recognize this** we have to sense the five senses in one sensing.

Don’t say that the sensing across is “by association,” because that habitual phrase skips how association is possible. The association theory explains why we are in the habit of expecting them to be together after we have seen and tasted them together many times. It

doesn't tell us **how** seeing and tasting **can be sensed together** the first time, or any other time.

Kant understood that there is something that needs to be explained here. He made this togetherness his highest principle: the "unity of apperception." But Kant made this a form of understanding, not of sensing. It is important to notice that Aristotle derives **a unity of sensing** which is done by the senses together. In contrast, both the empiricist associationists and the a priori cognitivists add a unity to sensation from the outside. Ever since Descartes, sensation was considered unreliable and was split off, so that cognition came to be considered independent. Sensation was taken to be a passive object, while cognition was active and did the unifying and interpreting from outside sensation. In modern science "the idealized observer" unifies space and time and provides the grid for scientific constructions. Motion, size, figure, and unity are considered conceptions, and must be **brought to** sensations to give them structure and connections. For Aristotle the basic concepts of physics such as sensibles, motion, size, figure, and unity are derived **within sensation**. Modern philosophy since Descartes has considered them to be external relations imposed on sensations. The proportionality which Aristotle considered inherent in heat-sensations, sound-pitches, and colors, came to be viewed as abstract mathematical relations which somehow mysteriously apply to nature. Since Descartes, this has posed the question why a science of quantity, motion, size, figure, and unity can successfully apply to nature. Was it through God's guarantee of the validity of human thought, or by a common clockwork of mind and nature, or are such concepts subjective attributes of the "mind?" In the modern view there seems to be no inherent link between sensing and concepts.

We want to grasp not only Aristotle's argument itself, but also the philosophical function it serves. In this chapter and the next, Aristotle establishes a complex series of **inherent links within sense-experience** which give rise later to inherent relations between sense-experience and concepts.

Aristotle's derivation **from within experience** of the unity of the senses – and the common sensibles – is not a point one can afford to miss, if one wants to understand Aristotle. It is one of a series of points we have to grasp very specifically in III-1 and III-2. They may seem like separate highly technical points, but they are rather the crucial links in his whole system. They concern what Aristotle considers **based on sensation**, more and more and more throughout these two chapters. What is built step by step will be employed later to link thinking firmly to sensation. Each of these points also forces us to notice each time that for Aristotle sensation is a reality in the universe, something that exists in concrete interaction with and among the things and partially determines their being. Since none of these steps are familiar to us we have to grasp each of them as they arrive, and keep them. Otherwise what he says later

about thinking will be read as unfounded assumptions.

It doesn't shock that there is no sixth sense. We have to grasp that he thinks he is showing that **no outside agency of any kind** can account for the unity of the senses – and for the all important common sensibles. It isn't just his choice to ground them from within sensation. He thinks he is proving that it cannot be from outside. He has offered a complex analysis which we need to understand for the sake of the rest of the book.

I don't like sweeping simplifications of modern thought. I make such statements only to insure that the reader will notice how deeply Aristotle differs at this spot. In the usual modern view we assume that it is with cognition (thinking, reflection, knowing, concepts) that we compare the senses across. Cognition is also assumed to originate the common sensibles (motion, geometric figure, quantity or size, etc.) which the moderns called "the primary qualities" because mathematical science is based on them. The whole structure of science is an imposition from cognition. The structure of science floats because the origin of cognition is unfounded and utterly controversial. (Current versions of the controversy are "Consistency vs. Correspondence" and "Objectivism vs. Constructivism.") My point is not to analyze modern thought, but rather to point out exactly where Aristotle differs from it. In chapters III-1 and III-2 the differences have to be understood specifically, point by point.

Even if we reject the modern view which we were all taught, we cannot help but read it in at first, because it is assumed in our common words and phrases. It requires work to recognize that Aristotle is not saying that we "know" when the five senses are about one thing (and when not), that he is saying rather that we **sense** when it is one thing because we **sense** across the senses, and this cannot be provided from outside the senses. Sensing across is necessary and it is possible only because the senses are inherently joined.

The difference also leads back to Aristotle's view that we sense motion and continuity **directly**. The usual modern assumption that sense-experience consists of momentary bits, leads to the view that motion depends on imposing a cognitive unity that is external to motion. Space-time relations seem needed to have motion. External relations are basic to the whole modern understanding. Aristotle finds relations internal to the sensing activity which, for him, is a functioning of life in interaction with the other things of nature.

If we read our habitual assumptions in, we miss what he is trying to establish. He argues that motion, size, figure, and unity are sensed **directly** by each sense, and that the commonalities are themselves a kind of "**sensibles**" and (in contrast to Kant) could not possibly be brought to sensing from outside the sensing. Where does Aristotle argue this? Right here:

425a24-27 Otherwise we would perceive them **only incidentally**, as we perceive the son of Cleon
 not because he is the son of Cleon but because he is white,
 and the white object happens to be the son of Cleon.

The crux of Aristotle's argument is that the together-sensing across the five cannot be provided by anything brought to them from outside themselves. **What they each sense directly** would be "incidental" to any agency outside them. Their own commonality across cannot be brought to them by **another** agency that would have to remain outside them.

But why would sensing the commons by another agency be as we sense Cleon's son? Granted that without a joint sensing the five could not even be incidental nor could white and sweet, but still, isn't there a great difference between the commons and Cleon's son? Doesn't each sense sense the commons directly, whereas we sense Cleon's son only incidentally and not directly at all? Yes, but **if** the commonalities across the five were **not sensed by** the joint sensing, **if** they were sensed by a sixth sense which would have them **only** incidentally from each of the five, then even though the five join and each of the five does have them directly, the commons would be sensed **only** incidentally **because the sixth would never have them directly at all.**

425a27-30 But for the commons we have even now **a common sense, not incidentally.** There is, then, no special [sense] for them;
 for if so we should not perceive them otherwise than as stated, as we see the son of Cleon.

Notice the singular, "a" common sense. The "common sense" (αἴσθησις κοινήν) is not a sixth sense, not **another** sense incidental to the five, but rather the sensing-together **of the five**, and yet it is **a** sense. In the next chapter (and in III-7) Aristotle will develop more and more detail about how seeing and tasting are different, and yet they make up one sensing.

In a sixth sense the commons would be only incidental to the sixth, but even this would not be possible without the common sensing, since the incidental sensing of each other's content is possible only because they make up one sensing.

425a30-425b2

The senses perceive **each other's special**-objects incidentally, not in so far as they are themselves, but **in so far as they are one. Thereby sensing happens together in respect of the same thing** (οὐχ ἢ αὐταί, ἀλλ' ἢ μία, ὅταν ἅμα γένηται ἡ αἴσθησις ἐπὶ τοῦ αὐτοῦ)

e.g. in respect of **bile** that it is bitter **and** yellow

Now, at last, we can say not only that “each sense senses one,” but via their common sensing this is sensed as **the same one** whose color and sound, motion, dimensions, and figure we sense directly in each of the five.

Here is also the explanation, why we sense our friend, the son of Cleon, and generally why we sense the thing. I emphasized in II-3 and II-6 that for Aristotle we **sense** things. Animals can do this since it involves only sense. We sense bile, and food, not just perceptions.

425b2-4

for it cannot be the task of one [sense] to say that both are one;

No single sense can say that two of them have the same one thing; only they themselves can, and only if they sense together. The one sense of seeing cannot say that we are hearing the same thing we see. Neither can hearing say that we see what we hear. Only if they are one sensing, can they sense “the same one.”

hence too one may be deceived, and if something is yellow,

one may **take it to be** (οἴεται) **bile**.

The mistake is due to the past association of bitter and yellow in the same one thing, bile. But the mistake is possible only because bitter and yellow **could** first and often be sensed **as one sensing**.

Do not assume that we sense when sensations are together because they sense “the same thing.” The reverse! Each special sense senses one thing, but only their joint sensing lets us sense that it is “the same thing.”

Aristotle has now derived how we sense **the same single thing** bearing the different sensible traits. Again I must emphasize that this is sensed. Animals **sense** their food (and eat

it). The cat sees and scratches the one thing we call “the door” when she desires to come in. These are each directly sensed, but it is their **together** which lets the **one same thing be sensed**.

With our familiarity with materialism, Aristotle’s argument would have been easier for us to grasp, if he had told us that the five sense-motions meet in one **place**. In III-7 he will at last say this. But he had good reason not to help us in this way. Just the material joining would not have been informative about what we sense in a joint sensing. It would not pose the problem we now face, as he continues into the next chapter: Aristotle is not aware of ending a chapter here. Do not be content with “III-1” as a unit. Aristotle goes right on into the next “chapter.” **He must now tell us just how sweet and white can be in one joint sensing. Surely they still also have to remain different. If he were to leave it at “both one sensing and also still five different ones,” this would not let us grasp how order and concepts arise from within sense-experience.** He has shown that the five **must** also join in one sensing, but **we have to wonder how he is going to fill this in**. Can he pull off some orderly way in which they each retain their different sensibles, and yet sense them as an organized experience?

425b4-6 One might ask **for the sake of what** we have **several senses** and not one only. Is it perhaps in order that the common-objects which accompany (the special-objects), e.g. movement, magnitude, and number, may be less likely to escape our notice?

With this final-cause argument Aristotle argues that the commons would remain merged with the specials, if there were not many senses in a joint sensing. He explains:

425b6-11 For if there were sight alone, and this was of white, they would be **more likely** to escape our notice and all things would seem to be the same because color and magnitude invariably accompany each other. But as things are, since the common-objects are present in the objects of another sense too, this makes it clear that each of them is distinct (ekaston auton).

If we had only vision and only one color, we would see the white thing moving or standing still, but we would not distinguish motion from white.

One might ask why we would not discriminate them, since the white thing would sometimes move and sometimes not, sometimes be triangular and sometimes cloud-shaped. We distinguish color and brightness, and the pitch of sound from loud and soft within just one sense. I think Aristotle means that without the other senses we would not **differentiate** or **discriminate** motion (size and figure etc.) as separate sensibles in their own right in the way we now do, ("as if" they existed separately, as Aristotle likes to say of them, when he discusses mathematics).

SEE ENDNOTE 84. ON OTHER READINGS OF 425a14 - 425b3.

III-2

OVERVIEW

In this chapter many essential linkages are established which are needed for the rest of the Book.

Aristotle derives all the following **from sensing**:

We can sense

darkness 425b22

images left-over from sense 425b24

a blend, (a voice, a chord, a sauce)

The source of pleasure and pain derived from the sense-proportion (vital for the *Ethics*)

We **sense that we see**

we discriminate between the senses (sense that we see, rather than taste or hear)

we sense that we see **and also** hear (when both happen together)

the identity of a moment of time

the singleness of the one who senses ("we," the person or animal) 426b19

the sense mean (e.g., of hot/cold)

the sense mean taken up into thought ("as it tells (ratios, *legei*), so it thinks (*noein*) and senses")426b22

Also in this chapter:

In what exact way the sensible form of thing and organ are one form of one activity.

He derives (from voice and harmony) his view that the sense **is** a proportion. The organ is tuned like a lyre. I need to use the verb "proportion**ing**" for what sensing **does**: The sensing **actively proportions the incoming sense-motion**. Sensing is **proportioning**.

Sensing is shown to be a single activity of the five senses in proportion to each other.

Aristotle derives the "single sensitive mean" which is later shown to have a major role in thinking.

TEXT

425b12

Since we sense **that we see and hear**. . .

In II-5 at the start of the chapters on sensation Aristotle had asked why the senses do **not** sense themselves. Here he says: we sense that we see and hear. So we need to distinguish those two statements.

That the sense cannot "sense **itself**" (II-5) means that a finger cannot touch itself, and the eye cannot see its own color, except in a mirror. You can only sense other things. To sense the finger you have to touch it with another part of your body. The senses do **not** sense **themselves**. But, in the act of sensing **something else**, we do also sense **that we sense**. So this does not contradict II-5.

The **material** sense-**organ** does not sense its own sensible qualities, only those of the other thing which activates the sense. But, the activity of sensing inherently includes sensing that we sense.

In the modern West we might say that we "know" that we sense, but for Aristotle we **sense** that we sense. We do not do this by coming at sensing with some other agency.

"Sensing that we sense" is Aristotle's version of what the Western tradition calls "consciousness" or "awareness," but Aristotle uses no such separate term and does not consider such a separate awareness. For him, sensing inherently includes the sensing of the sensing. It would not be a sensation if it did not. Seeing that we see is not an addition, not an added reflection or noticing. It is not as if the sensing were one thing, and sensing the sensing were another thing. Sensing includes that we sense. Without this it could only be some other process. There might be some physical event like a sun dial "sensing" the sun, or the elevator door "sensing" you, but this would not be **sensing**, as what is coming here will show.

Aristotle states this as a fact. He expects us to agree that in sensing we also sense **that we sense**. He does not argue about that. He argues only about how we do it:

425b12-15

it must either be **by sight** that one senses that one sees, **or by another** [sense].

But in that case there will always be **the same** [sense] for sight **and** the color which is the subject of sight. So that either there will be two [senses] for the same thing, or [the sense] itself will be the one for itself

What if you hurt your eye and now you doubt whether you can see? To find out, of course you try to see. It is the only way. But seeing is seeing color. To sense that you see, you have to see color. So if there were another sense by which to sense **that you see**, that other sense would have to sense color. So both would be the same sense (the sense for color). The defining form of a sense is its sense-object.

Aristotle's argument is directed precisely **against the additional sort of agency** that our Western concept of "consciousness" adds, as if it were a second thing that might or might not be added, as if sensing happens and then one is **also** aware of it. Aristotle argues right here against splitting the awareness-of-sensing away from the sensing as such. **To sense red** is always to sense **that you sense red**. The sensation red is not the mechanical event in the eye-machinery. Being aware of sensing red is not an awareness of an event that could happen just in the eye-machinery. Do not take the sense-object away from the sensing of it, as if a sensation were the kind of thing that could be without awareness, as if it were something to which awareness could be added.

Now a second argument against a separate sense:

425b15-17

Again, if the sense concerned with sight were indeed different from sight, either there will be an infinite regress or there will be some [sense] which is concerned with itself; so that we had best admit this of the first in the series.

If sensing that we see is by means of another sense, then sensing that we sense that we see will need still another, and so on. We will never account for it that way. Eventually we will have to say that one of these senses does sense that it senses. So it might as well be the first one. We may as well say that we see that we see.

425b17-22

But this presents a difficulty; for if to sense by sight is to see,
and if one sees color or that which possesses color,
then, if one is to see the seeing, the first seeing will be colored.

It is clear then that **to sense by sight is not a single thing;**

for even when we do not see, it is by sight that we discriminate
(*krinein*) both **darkness** and light, though not in the same way.

When we see that we see, we don't see seeing as if it were another colored object before us. We see only the sense-object, not the seeing. Sensing is an activity (*energeia*), not something colored that we see before us.

But "to sense **by** sight" includes some other things too, not only color and that we see. By sight we also **see** that it is dark outside. We don't see this in quite the same way as color. Rather, we see **that we don't see**, although our eyes are fine. Similarly, but again differently, we see no color coming from a black dress in daylight. The same ratio (light to dark) is involved in both darkness and black.

At the end of the last chapter Aristotle had established that the senses act as a togetherness when they discriminate common and incidental objects. Later in our chapter he will explain how this is due to their joining together.

If seeing were our only sense we would still see that we see (when we see), but of course not that we **are seeing and not tasting or hearing**. It is by their togetherness that the senses can compare each other and discriminate themselves, so that we **sense** that we are seeing, not hearing.

To "discriminate" (*krinein*, κρινεῖν) darkness is to discriminate between light and dark. (Sometimes the word *krinein* is translated "judge" which also expresses a strand of its meaning. No English words brings all it means. We must not miss the fact that (at least in Aristotle's use) "krinein" means **both** to differentiate something from other things, and **thereby** to bring it forth in front of us. Darkness is discriminated-from (light), and thereby it is sensed as sensibly before us.

425b22-25

Moreover, even that which sees is in a way colored;
for each sense-organ is **receptive** of the object of sense without

its matter. **That is why** sensations and **imaginings** remain in the sense-organs even when the objects of sense are gone.

But there are colors left over in the organ, namely images (next chapter). Those are left over, but how do colors come to be in the organ?

He first develops a general answer : The sense-object and the sense-organ have one and the same single activity of sensing.

425b26-28 **The activity** (*energeia*) of the object and of the sense is **one and the same**, although **their being** (*εἶναι*) **is not the same**.

I mean, for example, the active (*energeia*) sound and the active (*energeia*) hearing;

Aristotle states the conclusion of the argument in advance, as he often does. Now he will slowly demonstrate it.

We are familiar with Aristotle's way of letting a single concrete happening have several different definitions, several ways of "being," (*εἶναι*). In action there is only one activity, one single interaction. The one activity can be defined both as the sounding-activity of the thing, and as the hearing-activity of the animal. But they are identical only in action (*ἐνέργεια*). When there is no sounding, the silent bronze is not the same thing as the potential hearing capacity of the animal's ear. As potentialities they are two different things:

425b28-29 for it is possible to have hearing and not hear,
and that which has sound is not always sounding.

Active sounding requires both. So there is a complication: The object might actively make its sound while there is no listening. Or, there might be harkening but nothing hitting the bronze. Each has its own potential and active stages. The thing might be actively vibrating but this would **not** be active sounding. The listener could be wide awake but without any vibrating air there would be no active sounding. Each could **actively** happen without the other, and yet this would still only be **potential** sensing.

425b30-426a1

But when that which can hear is active (*energeia*) **and** that which can sound is sounding, then the active (*energeia*) hearing takes place **together** (ἄμα) with the active (*energeia*) sound, and one might call these, the one **listening**, the other **sounding**.

So we have two names for one and the same activity, the same single interaction process. This single interaction happens only in one single place, the receiver. This is a point Aristotle makes throughout his works: (SEE COMMENT IN II-2 ON THE ACTIVITY GOING ON IN THE PASSIVE.)

If then movement, i.e. acting [and being affected], is **in** that which is acted upon,

both the sound and hearing as active must be in that which is potentially hearing;

426a4-5

For the **activity (*energeia*) of that which can act and produce movement** happens in that which is affected.

For example, if the students are not learning, the teacher is not teaching, only talking. The activity of teaching goes on in the students and it is the same single activity which is also called “learning.”

Aristotle mentions one great import which this point always has for him:

426a5-6

for this reason it is not necessary for that which produces movement to be itself moved.

Since the activity of the mover is in the moved, the mover needn't move. For example, if you want something you see across the room, that thing need not move and yet be **active in moving you** to get up and go over there. This is important to Aristotle especially in Metaphysics XII. The unmoving mover of the universe is “activity” and yet need not move to

cause motion. So for example, the colored thing need not move and yet the color will actively affect the light which will affect your eyes, so that the one single activity of sensing will happen **in your eyes**.

The activity of that which can sound is sound or sounding, while that of that which can hear, is hearing or listening;

for hearing is twofold, and so is sound.

The same account applies also to the other senses and objects of sense.

426a9-11

For just as both acting (*ποιησις*, making) and being affected are in that which is affected and not in that which acts (makes), **so** both the activity of the sensible and of what can sense, are in that which can sense . . .

But in some cases they have a name, e.g. sounding and listening, while in others one or the other has no name; for, the activity of sight is spoken of as seeing, but that of color has no name, while that of that which can taste, is tasting, but that of flavor has no name.

The conclusion:

426a15-18

Since **the activity** (*energeia*) of the object of sense and of that which can sensed **is one**,

although not the same in being (*εἶναι*),

the hearing and sound which are so spoken of must be destroyed or preserved together (*ἄμα*),

and so too for flavor and taste and the rest similarly

The activity of the object and of the organ is one activity, **one interaction between them**. This interactive character of sensing is important for all that follows. Sensing is

not just the having of a percept. The sensing is always also the activity of some thing. We may or may not know what or where the thing is (as Aristotle said in II-6) but if we are sensing, then our sensing **is also** the activity of something somewhere that is actively moving an active medium that affects the sense-organ.

Hearing is not just a sound-percept; hearing is also the activity of some thing.

Now he can solve the famous problem: “If a coconut falls on an island on which there are no animals, does it make a sound?”

426a19 but this is not necessary for those which are spoken of as potential.

In **potential sounding-listening** the activity of listener and thing need not be one and the same. The bronze or the coconut might be active without an active listener, or vice versa, but this would still only be potential sounding-listening.

426a20-25 the earlier philosophers of nature . . . spoke wrongly, holding that there is without sight nothing white nor black, . . .
in one way they were right but in another wrong;
for since sense and the object of sense are spoken of in two ways, **potential and in act** (*energeia*), . . . their statement holds of the latter, but it does not hold of the former.

The coconut falling unheard is potential sounding. **Active sounding goes on in the listener**; it is the same single happening as active listening.

Now he can say that the earlier physicist-philosophers were not sufficiently precise. They did not differentiate between potential and active sounding, and did not say that the single activity of sounding happens in the receiver.

426a26 But they spoke indiscriminatingly concerning things which are so spoken of *not* indiscriminatingly.

For the next argument we must keep in mind that he has just shown us that in act the object and sense are one activity, therefore just one form.

426a27

If voice is a kind of chord (συμφωνία)

Voice is **obviously** a ratio or proportion; it is a **blend of sounds**. We recognize the characteristic voice of a familiar person. **This shows that we hear the blend.** We do not hear the individual sounds that mix to create the blend..

With our Western atomistic assumptions, when we play a chord on the piano by making the distinct sounds with different fingers, we might **think** that we also hear each of them. But Aristotle says that we hear the voice, the blend, **one ratio -- the chord.**

If we observe, we can agree with him. We **know** that there are several separate sounds, but we **hear** the chord. Unless we have perfect pitch, we cannot identify the notes. Everyone recognizes the easing as the sub-tonic resolves into the tonic, but most people cannot name the notes. What we hear in the tonic or a sub-tonic is a certain **proportion** which the notes have to each other.

We tend to think that something **is** the pieces out of which it is made, so to us it seems that a chord **is** the notes that make it up. But in Aristotle's chemistry and biology the more complex thing is not reducible simply to its ingredients. The proportioned complexity is a new thing with new traits that the ingredients do not have.

The characteristic voice of someone you know is surely a very complex blend of sounds and overtones, **a single proportioned sound** more complex than the different pitches that go into it.

With the example of a voice Aristotle shows here that a sensible object can be a complex blend, a proportion. Just before this he showed that sounding-hearing is one activity in which the object and the sense have one object-form. So if the object-form is a proportion, then what must the sense be?

426a27-30

If voice is a kind of chord,
and voice and hearing are in a way one and the same [and in a

way not one and the same],

and if a chord is a proportion (*logos*),

then hearing must also be a kind of proportion (*logos*).

In II-12 Aristotle said that “the sense is a proportion,” but now he has demonstrated it and enabled us to understand it by discussing objects (voice and chord) that are obviously each a proportion of many sounds. Since in act the sense and the object have one form, the sense too **must be** a proportion (*logos*).

SEE ENDNOTE 85. ON THE WORD “LOGOS” (“RATIO” AND “PROPORTION.”)

In II-12 and again here, the assertion that the sense is a proportion is followed immediately by:

426a30-426b3

And it is **for this reason** too that either excess, whether high or low pitch, destroys hearing;
and in the same way in flavors excess destroys taste, . . .
since the sense is a kind of proportion (*logos*).

Of course, if the sense is a proportion located in the organ, too much intensity could upset the proportional relationships.

(Does he assume that too low sound or too little light destroys hearing, or only that we don't hear anything just then?)

Now Aristotle will derive the origin of pleasure from the fact that the sense is a proportion.

426b3-4

For this reason too things are **pleasant** when **brought** pure and unmixed **into the proportion** (*logos*),

A single sound or taste is pleasant “for the reason” that it is **brought into** the proportion

(the relationships of all possible sounds to each other, as on a musical instrument). Aristotle argues that since the sense is a proportion, therefore a single tone is discriminated and heard by the whole proportion. Plato (*Philebus* 51d) had said that the most pleasant sensation is a single pure one. Aristotle disagrees. Yes, pure tones and tastes are pleasant, but only because they come into the sense's own whole harmony, its proportional system. And, when many are sensed in a blend, this is more pleasant.

426b4-6 for example, the high-pitched, sweet or **salt**; for they are pleasant then; but **universally (holos) a mixture, a chord is more pleasant,** and for taste the more pleasant is that which is heatable or coolable

By heatable or coolable, Aristotle means not at the extremes of heat or cold, i.e., near the mean.

Good cooking creates tastes that are not simply the separate tastes of the ingredients. Perhaps we might have agreed with Plato that a pure tone is more pleasant than a hodgepodge of sounds, but a chord is still more pleasant. And, once Aristotle mentions salt we cannot agree with Plato anymore: Salt doesn't taste that good when pure and unmixed. But when added to food it joins in making a new taste that is more pleasant than just salt.

The derivation of pleasure and pain from within experience is another of those points in III-1 and III-2 which one cannot afford to miss, if one wants to understand Aristotle. It is one of the crucial links in his philosophy. Aristotle bases **evaluation** on sensing. Pleasure **is** the sensation itself, not an added evaluation by an external (always controversial) standard. The sense **is** a proportion. The sensation itself **is** pleasure insofar as it fits the proportion (or if it is a blend, is itself a proportion). Discriminating one note or one color depends on the whole order of pitches and colors. And sensing exists as part of an animal's concrete life-interaction with food and among the other things with which life happens. Therefore the proportions and the order in living activity cannot be arbitrary. If we don't understand him here, what he says later about locomotion, choices, and "the good" will not be understandable.

SEE ENDNOTE 86. ON THE DERIVATION OF PLEASURE

Now I must point out that you were able to follow Aristotle's understanding here only because you could compare your left-over sensations of sound pitches and of salt. One cannot think with him only by thinking. In the West one might assume that one can construct a good theory about sensation without attending to one's sensing and imagining. it. That is not possible for Aristotle. To follow his theorizing, **you must sense or imagine** eating salt by itself, as well as the pleasure of salt in a blend with other food.

In this passage Aristotle has moved from the instances of blends and chords to a universal ("*holôs*"). We will need to remember **this move from the sense-proportion to a concept**, in order to understand him when he brings up understanding later in the chapter, (and in III-4 about moving from a **sensed** proportion to the **concept** of that proportion).

Having explained pleasure he says again that excess destroys (*φθειρεῖν*) the proportion in the sense, but this time he **adds a word!**

426b7

The sense is a proportion; and objects in excess
hurt (*lupeî, λυπεῖ*) and destroy (*φθειρεῖν*) it.

From the proportion, Aristotle has now derived **the pain** of excess, as he derived the pleasure of blends and the mean just above. Both are vital for the *Ethics* and for the rest of the *De Anima* (especially III-7 and III-9-11).

Some translations have "dissolves" instead of "hurts," because this word was changed in one manuscript.

SEE ENDNOTE 87. ON ARISTOTLE'S DERIVATION OF PAIN

Now he will show that not only is each sense a proportion, but all five senses also join to constitute one proportion with each other:

426b8-11

Each sense, therefore, . . . being present in the sense-organ, *qua* sense-organ, . . . **discriminates** (*krinein*) **the varieties of the subject** (*ὑποκειμένον*) sensed by it, e.g. sight for white and black
...

As he said in II-11, each sense has as its “subject” (ὑποκειμένον) a continuum, degrees of high to low pitch, white through the colors to dark, and sweet to bitter.

SEE ENDNOTE 88. ON HUPOKEIMENON

426b12-15

And taste for sweet and bitter; and similarly for the others too

Since **we discriminate** (*krinein*) **both** white and sweet and each of the objects of sense,

by reference to each other,

by what do we sense also that they differ?

This must indeed be by sense, for they are objects of sense.

Discrimination between different sense-objects is done “by sense, **for** they are objects of sense.” As we saw at the start of the chapter, any sense that could check whether we see would have to sense the colors. Then it would really be the seeing sense. Any sense that senses what some other sense senses, has to do this by sensing the other’s sense-objects, which amounts to being that sense. Therefore discriminating between the different senses can only be done “by sense.” Clearly it must be done by their own single joint sensing of all five kinds of objects together.

The word “discriminate” (*krinein*) means both to differentiate and to generate something present before us. It does not mean only that we sense the difference between white and sweet, as if they are first there and then we also sense the difference. Rather, white would not appear as white, nor sweet as sweet, if sensing did not “discriminate” them. If we wanted to say this in English we would add the word “out.” We would say: “We would not sense white nor sweet if we didn’t “discriminate them out,” so that each appears to us, as it does.

Just as a given tone is defined by its spot in the system of relations to all other possible notes on the proportionally-tuned strings, **so also is any one sense-object discriminated in relation to the other senses.** We discriminate (*κρινεῖν*) the different senses (white and sweet) “**by reference to each other.**” So it must happen in their single joint sensing.

We saw in III-1 that the five senses join, and later (III-7, 431a19) Aristotle will tell us that the five sense-motions terminate in one organ (*το εσχατον*). This has to be the touch-organ, the “**ultimate**” organ, the contact organ where all five senses are in contact together. He argued in II-11 that the flesh is only the medium of touching, not its organ which must lie deeper in the body. Now he has a new basis for this argument, since he has shown that the other four

senses must join, and that discriminating among them has to be done by (joint) sensing, i.e., by the five together:

426b15-17 **From this** it is clear also that the flesh is not the **ultimate** sense-organ; for if it were it would be necessary for that which discriminates (τὸ κρῖνον) to **discriminate** (κρινεῖν) **itself** by touch.

Since touch means contact, the touch organ is the contacting or terminating organ where the media senses can terminate. So the contact (touch) organ is the last organ, the ultimate organ (τὸ ἔσχατον) where touch discriminates all five. This organ cannot be the flesh because the other senses are not there in the flesh. They would have to be all over the body, as the flesh is, and we know that seeing, hearing, and smelling are not there. If the flesh were the discriminator, it would have to discriminate itself, which is not possible. The senses discriminate themselves “by reference to each other,” Touch cannot do it alone.

SEE ENDNOTE 89. ON THE FLESH IS NOT THE ULTIMATE ORGAN

A sense can be discriminated only because it is together with all the potential others, as he just said “. . . we discriminate both white and sweet . . . **by reference to each other.**” So we **sense** (with all five) that we see rather than hear, or that we see and hear, as discriminated from smelling or tasting.

He continues the main argument:

426b17-20 Nor indeed is it possible to discriminate (*krinein*) **by separates** that sweet is different from white, but **both must be evident to something one and single**, for otherwise, even if **I** sensed one thing and **you** another, it would be evident that they were different from each other.

Suppose we plan to go on a trip together tomorrow, and I call you up on the phone to ask if your suitcase is heavier than mine. I ask you to lift yours while I lift mine. We laugh.

Both suitcases will have to be **present to one** same person, else we cannot compare them.

Now we can recognize that “seeing that **we** see” already included the fact that the sensing of all five is also required. Else the color would not be differentiated out, not present as color. Discriminating happens “in reference to each other.”

Here Aristotle has just derived the unity of “we.” **The singleness of the person or animal is inherent in sensing.**

Aristotle applies the word “discriminate” to thought as well as to sense. Sensing and thinking are continuous for Aristotle, so the unity of thinking is not a different one. Indeed, sensing retains a certain duality which (as he shows in III-4) is overcome by the thinking. Then in III-6 he shows some roles performed by this singleness of the soul.

SEE ENDNOTE 90. ON THE UNITY OF THE PERSON

Aristotle will employ this unified sense-proportioning later to understand understanding., but we notice that its role in understanding is also told right here:

426b20-23

Rather one thing (το εν) must tell (*legein*, λεγεῖν) that they are different; for sweet is different from white.

The same thing (το αυτο) then tells (*legein*, λεγεῖν, proportions) this; **hence, as it tells (*legein*, λεγεῖν), so it both thinks (*noein*, νοεῖν) and senses.** That, therefore, it is not possible to discriminate (*krinein*, κρινεῖν) separated by separates is clear.

A discriminating between two requires something single which has both. The one thing that discriminates, also thinks and senses. As it “**tells**” (as it proportions) how white differs from sweet, so it will think (νοεῖν). **This sense-proportioning will be crucial in thinking,**

The crucial activity-word here cannot easily be translated. “*Legein*” (λεγεῖν) means that it “tells” but also that it proportions. 426b22: ὅστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται.

SEE ENDNOTE 85. ON THE WORD “LOGOS” (“RATIO” AND “PROPORTION.”)

All this is **done** by the activity of sensing. Sensing is not a passive reception, as we tend to assume with Western habits. For Aristotle, the color we see does of course depend on which thing we are looking at, but the color it is not already in the incoming motion. The sense-organ

provides the proportions and actively proportions the incoming motion. He likened this to the system of musical proportions by which the strings of a lyre are tuned. The lyre provides the system of proportions. Then each incoming motion has its proportion when proportioned by the sense activity. Each visible thing has its own color but only as it participates in the sensing act. The thing's potential color is actively proportioned by the sense.

This active emphasis is characteristic of Aristotle. Even the simplest bodies are not atoms, but activity, an interacting, the hot **acting on** the fluid-dry. (*De Gen & Cor*,). Bodies are interactions, not stuff that fills space and time. To know this about Aristotle is important also for the next passage.

426b23-29

And that it [the discriminating between two] is not possible either **at separate times** is clear from the following. For **just as** the same thing **tells** ($\lambda\epsilon\gamma\epsilon\hat{\iota}\nu$) that **good and bad are different**, **so also** when it tells ($\lambda\epsilon\gamma\epsilon\hat{\iota}\nu$) that the one and the other are different, **the time when** is not incidental (. . .) but **it now so tells** ($\lambda\epsilon\gamma\epsilon\hat{\iota}\nu$), **and that they are different now; together** ($\acute{\alpha}\mu\alpha$) **therefore**. **Hence**, it is undivided and does this in an undivided time.

SEE ENDNOTE 75. ON HAMA

BELOW I TAKE UP WHAT IS SKIPPED IN THE PARENTHESIS WITH THREE DOTS.

Good and bad are discriminated by the joint sensing and proportioning which we have been discussing. "It" performs all these functions.

Aristotle will returns to this in III-7 (431a12): "To feel pleasure or pain is to be active with the sensitive mean (*mesoteti*: broad mean) toward the good or bad." Good and bad, like sweet and white, are proportioned in relation to each other, **therefore together**. Now he will add: **The togetherness also determines a single unit of time**.

Do not say that the unity of a single moment of time happens when the senses happen “simultaneously” or “at the same time.” That would be circular. For Aristotle a single time is determined by two bodies that meet and thereby determine one place. The sense of a single time is determined by two senses that meet. The togetherness of the interaction determines a single time.

Without knowing philosophy, one might simply assume that one can write “at the same time” or “simultaneously,” but a philosopher knows to question any system of time. A philosopher asks about the nature of time, how it comes to be, about how it becomes determined as this or that unit of time. We have to wonder how a single unified and determined moment of “simultaneous” time comes about. Here Aristotle has **derived** it.

Aristotle rejects the assumption that a determined time is simply given as such. If you and I talk and interrupt each other, we can be said to talk “simultaneously,” but Aristotle denies Newton’s already-given system of time as something that exists just by itself as such. (See earlier cited *Physics* and *De Gen & Cor*).

In the passage in our chapter **the simultaneity is created by the coming “together” of the sensations**. One cannot say that the single time is created because the sensations happen at the same time.

SEE ENDNOTE 91. ON TIME

SEE ENDNOTE 92. ON THE SENSES TOGETHER

NOW LET US ENTER THE PARENTHESIS (. . .) WHICH I SKIPPED BEFORE

426b27-28

I mean ($\lambda\epsilon\gamma\epsilon\acute{\iota}$) as, for example, **when I say** ($\lambda\epsilon\gamma\epsilon\acute{\iota}$) **now** that they are different,
but not that **they are different now**;

The unity of the now, which is made by discriminating two **together**, is the essential time-determining; whether I assert this now or at some other time is accidental, to the unified moment of time, but the discriminating is **now** in both ways.

For example, you could **now assert** that the green of the new dress which is at home in your closet is the same (or different) as the green of my jacket. Your assertion now of both

does not determine a unit of time. It is accidental to them that you assert their comparison now . But let us say you wore your new green dress to my party, and are standing next to me in my jacket. In that case their being sensed together creates an essential single **now**. This determined now will remain essentially determined even if you happen to assert its sameness again at some other time. The time is not unified by the fact that you **now assert** their comparison. That is accidental to their sensed togetherness.

Aristotle's argument explicitly rejects the Newtonian idea that the unity of time pre-exists all actual events. The essential unity of a single time is due to the discriminating together (or, in Aristotle's Physics, two moving bodies colliding). There is no time system external to motion and events. For Aristotle there are no absolute antecedent time-positions.

But now he poses a problem: Can the same thing sense opposite sense-motions in one such single moment of time? Notice again that sensations involve motions.

426b29-427a1

But yet it is impossible for the same thing to be moved with **opposite motions together** (ἅμα) in so far as it is indivisible, ἀλλὰ μὴν ἀδύνατον ἅμα τὰς ἐναντίας κινήσεις κινεῖσθαι τὸ αὐτὸ ἢ ἀδιαίρετον, and in an indivisible time.

For if something is **sweet** it moves sense or thought (νόησις) in one way, while the **bitter** moves it in the opposed way, while **white** moves it quite differently.

How can we understand a single proportioning of **opposite motions**? Aristotle has derived the necessary **function** of a single discriminating between opposite effects that happen together. But in terms of the motions that affect the organ, how can it be affected by opposite motions together?

He tries out one possible answer:

427a2-5

Is, then, that which discriminates (τὸ κρῖνον) both together (ἅμα) **numerically indivisible** and undivided, while **divided in being** (εἶναι).

Indeed in one way **that which is divided senses divided**

objects.

but in another way it is this *qua* indivisible;

for in being ($\epsilon\hat{\iota}\nu\alpha\iota$) it is divided, while it is indivisible in place and number.

Here again is Aristotle's familiar view that one concrete thing can have several ways of "being" ($\epsilon\hat{\iota}\nu\alpha\iota$), i.e. several ways in which it could be defined. He tries this out to see if he can say that one single sense-organ might do the discriminating as numerically single, while defined in two ways, as being moved in opposite ways, (sweet **and** bitter), and in that respect divisible. So, for example, I am divisible in "being" since I am a philosopher, a professor, a father, a writer, and yet one numerically. But my examples are not opposites.

427a5-7

Or is this impossible?

For the same indivisible thing may be both opposites **potentially**, although it is **not so in being** ($\epsilon\hat{\iota}\nu\alpha\iota$),

I am **potentially** alive **and** dead, potentially tired **and** refreshed, potentially wise **and** mistaken, but I cannot **in act** be the opposites **together**. One thing cannot be moved in opposite ways in act, and yet remain indivisibly one.

427a7-9

but it becomes divided when activated (*energeisthai*).

and **it is not possible for it to be white and black together** ($\acute{\alpha}\mu\alpha$),

so that it cannot also be affected by the forms of these (colors) together ($\acute{\alpha}\mu\alpha$),

if sense **and thought** ($\nu\acute{o}\eta\sigma\iota\varsigma$) are like that.

The last phrase means that both sense and thought sometimes have opposites. It reminds us again of the continuity between sense and thought which makes all this apply to both. (He said earlier, "as it tells (proportions), so it thinks and senses" (426b20).

The problem is that the sense **cannot be moved in opposite ways**, and yet have both

together. **How can one thing discriminate opposites?**

427a9-11 But it is **like** what some call **a point**,
which is (both indivisible) and divisible in so far as it is one and two.

An unmoving point divides a line into two segments. The one indivisible point is both the end of one segment, and also the start of the other segment.

427a11-13 **That which discriminates**, (τὸ κρῖνον) therefore,
in so far as it is indivisible, is one and discriminates [them] together (ἄμα)
but in so far as it is divisible it **uses** the same symbol twice together (ἄμα).

The point is one and also two.

427a13-14 In so far then as **it uses** the boundary-point twice
it discriminates (κρῖνεῖν) two separate things, in a way separately,
in so far as **it uses** it as one
it discriminates one thing and together (ἄμα).

How exactly is this different from the solution he rejected? A point **is** both one and two, and divides line segments in some proportion, half and half or 2/3 or 1/5. But why does this solve the problem? It solves the problem **because a dividing point does not have to be moved** in opposite ways together. Pulled by both white and black, that which discriminates would stay in one spot and **act like one proportioning point**. It would not move in opposite ways.

An ordinary point on a line creates a proportion between two segments. Aristotle already used this idea in II-11 for touch, and it is at the touch center that the joint sensing happens. The single discriminating organ would **not be both heated and cooled**, nor moved

by both black and white. Rather, it would always remain the mean of the opposites.

If we imagine this uniting-and-dividing point as the center of a circle, the point is the divider of every diameter. It divides them each into two radii. In that way one point could divide many lines, as my colleague Herbert Lamm told me, "like the hub on the many spokes of a wheel." Of course the single point would not divide all diameters **in half** as in a circle or a wheel, but would function as the one mean-point in each of the five sense-modalities **together**.

Here Aristotle derives the "sensitive mean" which becomes important in all the later chapters.

Aristotle is not saying that the joint sensing **is** a point, rather that **like** a point it remains one and indivisible while dividing opposites. It functions as a single limit-point between opposites. For the warm it is so much cooler, while for the cold so much warmer. So "one thing with different manners of being" does apply. The vital role in thinking which this joint sense-mean performs, won't be seen until III-4 and III-7 where Aristotle says that it acts as "a single mean with different manners of being."

This is the end of the ten-chapter account of sensing which began in II-5. It is very important to keep in mind how very much Aristotle derives **as sensing**. All these factors which he has derived in sensing enable him to create an elaborately sense-grounded view of thinking.

As Aristotle now goes on to discuss thinking and understanding, he will employ the links between sense and thought which he has built in this chapter. He won't derive these links again, so we need to keep them in mind. Please check at least the list I offered in my overview to the chapter.

SEE ENDNOTE 93 ON BY SENSE

III-3

OVERALL:

Here begins Aristotle's treatment of understanding and thinking. Within his discussion of this topic, and only after a while, does he take up imagination, beginning at 427b27.

The chapter falls easily into four parts:

First he distinguishes thinking from sensing. He has just finished discussing sensing.

At 427b15, he says that there is no thinking without "premising" (*hupolepsis*, ὑπόληψις), and no premising without images. So there is no thinking without images. *Hupolepsis* (premising) means assuming the truth of something, (which imagination does not). **A simple key to this part is that imagination differs from the others in that it can be false and yet not lead us into error, if we don't premise that what we imagine is so.**

From 428a5 to 428b9 he differentiates imagination from other faculties. This part is very confusing to the novice, and can be skimmed. Study it when you are familiar with the whole *De Anima*.

At 428b10 he defines imagery.

TEXT

I need to remind the reader that the English words "sensation," "perception," and "sense-perception" are used interchangeably to translate the same Greek word.

427a17-21

There are two distinguishing characteristics by which people mainly define the soul: **motion in respect of place;** and **thinking (*noein*), discriminating (*krinein*) and perceiving.** Thinking (*noein*) and prudence (*phronein*) are held (*dokein*) to be a kind of perceiving, for in both of these the soul **discriminates (*krinein*) and [or] has cognizance of (*γνωρίζειν*)** an existing thing.

SEE ENDNOTE 94. ON GNORIZEIN AND PHRONEIN

The MSS and some translations omit 'discriminating' from the list of characteristics by which the soul is mainly defined.

The chapter begins a new section of the *De Anima*. Aristotle starts it by recalling that the characteristics that previous thinkers (cited in Book I) ascribed to the soul were often just two: **locomotion** and some **apprehension of things**. Within the latter he now first distinguishes thinking from sensing. The long section II-5 - III-2 was about sensing.

Up to 427b16 the chapter is just about thought and sense. Imagination has not yet been mentioned, but we will see that Aristotle distinguishes between thought and sense in such a way that **imagination can be clearly distinguished**. Let us examine exactly how this comes about.

427a21-29

Indeed the ancients **say that prudence (*φρονεῖν*) and perceiving are the same**. Empedocles . . .

For they all take thinking (*noein*) to be corporeal, like perceiving, and both perceiving and prudence (*φρονεῖν*) to be of **like by like**, as we explained in our initial discussion (*logos*)

Aristotle says that the authors he cites equate thinking and sensing as simply having some appearance before oneself. They call this a likeness, and they also explain it physically as due to "like by like." We noted that Aristotle incorporated and precisioned this old view in discussing nutrition II-4 (416b8) and concerning sensation in II-5 (417a180). Supposedly the elements in us perceive the like elements in things. So, if we are made out of all the elements, we can perceive everything.

This was an early version of our familiar reductionism which explains perception in the same terms in which physics explains things. For Aristotle something more than that material effect is required. One reason is:

429a29-427b2

But together with (*ἄμα*) this they should have said something about **error**, for this is more characteristic of animals and the soul spends more time in this state;

Their explanation of sensation and thinking based on like elements cannot be right, because

427b2-3 hence on their view either all appearances must be true, as some say, or

How we can be wrong (as well as right) is hard to explain, but a good account of thinking must be able to explain it. Aristotle argues that if thinking is just having a percept, how can we ever be wrong? So if perception is simply contact of an element with its “like” and this is always true,

427b4-5 error must be a contact with the unlike, for this is the opposite of recognizing (*γνῶρίζειν*) like by like.

Could they account for error by saying that the hot in you can truly sense the hot in things, but will always be in error about the cold? But that isn’t possible because

427b5-6 But error and knowledge are held (*dokei*) be the same in respect of the opposites.)

If you are right when you sense that it’s hot, you are also right about the degree to which it is not cold. And if you are in error about its being hot, you are thereby also in error about its being not cold. So knowledge is always about both, and so is error. Therefore sensing the unlike is already included in sensing the like, and cannot explain error.

Aristotle finds here a quick way to distinguish thought from sense. The special senses are indeed always true (II-6), just by having what they have before them.

427b6-8 That perceiving and prudence (*φρονεῖν*) **therefore**, are not the same is clear. **For** all animals have the former, but few the latter.

The second sentence adds an argument. Since most animals don’t have it, there is a difference between sensing and thought (this kind, prudence, which he quoted from the earlier

thinkers). Aristotle will now use error to mark the sense/thought difference.

427b8-14

Nor again is thinking (*noein*), **which can be right or not right**, the same as sensing. **The right ones are:**

prudence (φρόνησις),

knowledge, and

true opinion,

and wrong the opposite of these).

ἐν ᾧ ἔστι τὸ ὀρθῶς καὶ τὸ μὴ ὀρθῶς, τὸ μὲν ὀρθῶς φρόνησις καὶ ἐπιστήμη καὶ δόξα ἀληθής, τὸ δὲ μὴ ὀρθῶς τάναντία

For perception of the special-objects is always true,

Nor is this (thinking)

the same as perceiving, For the perception of the special objects is always true and it is found in all animals

whereas it is possible to think (*dianoesthai*) **falsely** (πσευδῶς) also,

and this (*dianoesthai*) is found in no animal in which there is not also reasoning (*logos*);

Nous is not mentioned. It has no wrong version.

These kinds of thinking (*noein*) (all three) differ from sense. A sense is always true of its proper object, whereas “it is possible to think (*dianoesthai*) falsely.” He uses a word derived from *dianoia*, the word for thinking when it can be true or false. This is the word we saw used in Book I (408b25-27) for the kind of thinking he called “an affection” (*παθη*) like love and hate, which can decay in old age. There he contrasted it with nous which is unaffected (*απαθη*).

Notice “logos” here, reasoning, calculating, proportioning. It can go wrong, as we see also when the word comes up again later when he tells that it is involved in opinion.

What he names “knowledge” is true; he gives no name to the opposite here. We have knowledge (ἐπιστήμη) when we know (γνώμεν) the essential being of each thing. (ἐπιστήμη τε

γὰρ ἐκάστου ἔστιν ὅταν τὸ τί ἦν ἐκείνω εἶναι γινώμεν, *Metaphysics* VII-6, 1031b.6). Episteme concerns necessary unchanging truths (PoA, 89a).

“**True** opinion” (δόξα ἀληθής) is obviously not false. He will name a thinking that **can be** false, but is not always false (*dianoia*).

Up to this point the chapter has been only about thinking and sense, how they differ. **Imagination has not yet been mentioned.** But what has been shown about error and falsehood will now provide a way in which imagination can be distinguished from **both** thought and sense.

Here now is the first mention of imagination:

427b14-16 **for imagination** is different from both perception and thought (*dianoia*), and does not occur without perception, nor **supposal** (*hupolepsis*, ὑπόληψις) without it [imagination].

Here the “thought” (from which imagination differs) is *dianoia*, which includes combining notions. *Hupolepsis* is not familiar to us. It has not come up in the *De Anima* before. (It occurs in *Metaphysics* I-1, 981a7.) Imagination cannot exist without sense, but it does not require *hupolepsis*. Whatever *hupolepsis* is, it cannot exist without “it” (i.e., without imagination).

Sense is necessary for imagination, and imagination is necessary for whatever this new word *hupolepsis* means. At the end of the next passage he tells us:

427b16-24 **That imagination is not the same as thinking** (*noesis*, νόησις) **and supposing** (*hupolepsis*) is clear. **For that affection** (τὸ πάθος) [imagination] **is up to us when we wish . . .**

but opinioning (δοξάζειν) is not up to us, for it must be either true or false.

Moreover, when we have the **opinion** (δοξάζειν) that something is terrible or alarming we are immediately affected . . .

but in the case of the **imagination** we are just as if we saw the terrible or encouraging things in a picture.

427b24-26

There are also **varieties of supposal (*hupolepsis*):**
knowledge, opinion, prudence (φρόνησις) **and their opposites,**
 but their defining characteristics must be left for another
 discussion (*logos*).

Notice that Aristotle is referring to imagination as an “affection.” (Aristotle’s definition of imagery at the end of the chapter and my ENDNOTES there can explain why.)

Here we can grasp what “*hupolepsis*” means. He shows its difference from imagination by pointing out that we can choose to conjure up whatever images we wish (without believing them), but we cannot choose to believe (or opine) whatever we wish. So *hupolepsis* is whatever it is about opinion that makes it not open to choice. Also, *hupolepsis* is whatever it is that imagination does **not** involve, which makes it so that we can imagine a situation without believing that it is so.

At the end of this passage he tells us that *hupolepsis* includes not only opinion but also knowledge, and prudence. **So *hupolepsis* includes all the kinds which he just told us (427b9), and of which he also said that they have right and not-right versions.** They have in common that they premise (posit, assume) something to be true or false, **whereas he just showed that we can imagine anything without premising that it is so (i.e., without *hupolepsis*).**

Notice that “*hupolepsis*” (“supposal,” “premissing”) is a term which exactly excludes imagination. Just above he told us the three kinds of *noein*; now he told us that those are also kinds of *hupolepsis*. Now he has set up his treatment of imagination as the first part of his treatment of thought:

427b27-29

As for **thought** (*noein*), since it is different from perceiving and is held (*dokei*) to **include on the one hand imagination and on the other supposal** (*hupolepsis*)
we must determine about imagination before going on to discuss the other.

Within thought (*noein*) he has divided between the images and the premissing. *Noein* requires both. So he has nicely separated imagination and can take it up first, leaving for later

the kinds of *hupolepsis* (which all kinds of thought require).

Imagination is not thought, rather it is one part of all thought; *hupolepsis* is the **other** part. The latter term is perfect for differentiating that part of thought which consists of images from the other part (which involves premising, i.e., believing or not believing what is imaged). His treatment of imagination occurs **within** his treatment of thought, as a part of thought (*noein*) since the latter “is held to” require both. Since he says “*dokei*,” we cannot take it as defining *noein* to include imagination. At the end of III-8 Aristotle will specify the sense in which it is and isn’t included in “*noein*.”

Now he will show us the difference between imagination and the other faculties. But hasn’t he already done so by showing that the others are kinds of premising? Yes, but now another difference: imagination is not a kind of “power ... in virtue of which we discriminate.”

428a1-3

Now if imagination is that in virtue of which we say that
an image occurs to us and not as we speak of it metaphorically,

Aristotle says here that “imagination” in this chapter means having an image before us.

428a4-5

is it one of those potentialities or dispositions in virtue of which we discriminate (*krinein*) and are truthing and falsing?

Such are

sensing,

opinion,

knowledge, and

nous.

Compared to the last list, here prudence (*phronein*) is left out and *nous* is added. This is because prudence does not discriminate anything of its own, and *nous* does.

Imagination is not a discriminating. Discriminating is not just having an object before you; rather, it is the power of **generating** the object before you (thereby differentiating it from other possible objects). The translation “judge” would fit here also, since we judge the truth of imagination not by imagination itself, but the English word “judge” omits what “*krinein*” does, namely lift out something original to it. Since *phronein* is also left out of the list, and does

include judging, it is rather the original presenting which defines this list. Later (428b10) Aristotle explains that imagination is **only** a continuation of what is first discriminated by sense.

SEE ENDNOTE 95. ON DISCRIMINATING

SEE ENDNOTE 96. ON ARISTOTLE'S CLASSIFICATIONS

428a5-7

Now,

that [imagination] is not perception is clear from the following. Perception is either a potentiality like sight or an activity like seeing,

but something **can appear** (*φαίνεται*) to us

in the absence of both, e.g. things in dreams.

This is Aristotle's all important distinction between images and sensing. Dream images come with eyes shut, so it is not an active seeing, nor is it merely having sight (the capacity for sight, the potential seeing). So images are not sense-perceptions.

428a.8

Secondly, **in perception something is always present** (paresti), but not in imagination.

But if they were the same in act (energeia),

it would be possible for all beasts to have imagination

[of the kind we have been discussing in this chapter], and **it seems that this is not so, e.g. the ant or bee, and the grub.**

Note the first part of the passage about perception involving something present. It leads to the part about the insects. In perception there is not only the percept but also some present thing. Aristotle said in II-6 that we may be mistaken about what or where the thing is, but not mistaken that something is present. In contrast, images are like dreams insofar as there may be **only** the pictured content before us. The image is usually not of a present thing, but rather from the past.

This passage can seem to conflict with Aristotle's assertions throughout, that **all** animals

have imagination. I have added in brackets that these animals lack only the kind of imagination with which this chapter is concerned, the kind that involves an image before us. **All animals have at least the kind of imagination which does not require having an image, but comes along simply with pleasure and pain.** In II-2 (413b22-23) Aristotle says that all sensations can be pleasant or painful, and pleasure inherently involves imagining and wanting more of it, while pain inherently involves imagining and wanting to get away from it. This enables the worm to imagine more of (and pursue) a pleasant smell, or to imagine less of (and back away from) being poked, without having an image of something different. All animals have the kind of “imagination” which is inherent in the fact that sensations can be pleasant or painful.

Later in our chapter Aristotle says again that “**many**” but only “**some**” animals have imagination [of this kind] (428a22 and 428a24). For detail on this long-standing issue:

SEE ENDNOTE 97 ON ANTS, BEES, AND GRUBS

428a11

Next, perceptions are **always true, while imaginings are for the most part false.**

They are false; but as we saw above, **we** need not be in error because images do not involve believing.

INSERT PART OF TEXT MISSING HERE ON “appears”

Having differentiated it from sense, Aristotle next differentiates imagination from knowledge and nous.

428a16.

Nor again will imagination be any of those things which are **always** correct, e.g. **knowledge** and **nous**; for imagination can be false also.

So only opinion is left from the four kinds of krinein above:

428a19

It remains, then, to see if it is opinion . . . But conviction ($\pi\acute{\iota}\sigma\tau\iota\varsigma$) follows on opinion (for it seems (**dokei**) impossible to have

opinions without believing them; and while no beast has conviction (pistis), **many** have imagination.

Of course **imagination does not require conviction or belief (pistis)**, so he has now distinguished it from all four.

Furthermore opinion goes along with conviction (pistis), conviction implies being persuaded, and persuasion implies reasoning (logos); **some** beasts have imagination, but none have reason.

He already said above that animals do not have logos (reasoning). So imagination is differentiated from opinion **also because** opinion involves reasoning which animals lack. In III-11 (434a10-11) he explains that animals lack only the kind of opinion that follows from reasoning. In II-2 (413b27) he says clearly that sensation involves opinion, differing only in definition.

The next section refutes a statement of Plato's that imagination is a "blend" of opinion and sense.

428a24 - 428b7

It is clear, **therefore**, that imagination will be neither opinion together with perceptions, nor opinion through perceptions, nor **a blend of opinion and perception**, both on these grounds, and

By "therefore" he means that since opinion involves persuasion and logos, while imagination does not, it is already obvious that opinion cannot be an ingredient in the supposed mix that would constitute imagination. In ADDITION he will now argue against Plato that a blend could have only one and the same object.

because it is clear that, on that view the opinion will have as object nothing else but that which, if it exists, is the object of the perception too.

I mean that it will be the blend of the opinion in white and the perceptions of white that will be imagination; for it will surely not come about from the opinion in the good and the perceptions of

white.

In a blend they would have the same object, so

428b.1 the appearance (φαίνεσθαι) of something will be the opinion of what one perceives **and not incidentally**.

Since the blend is supposed to **be** imagination, and the blend would have just one object, we would always (not just sometimes accidentally) have the same opinion as what we perceive.

428b.2 But things can also **appear** falsely, (φαίνεται δέ γε καὶ ψευδῆ) when we have at the same time a true supposition about them, e.g. the sun appears a foot across, although we have the opinion that it is bigger than the inhabited world.

We are not in error when a perception or an image is false, if we have a true opinion along with it. For example, we need not be in error if we seem to perceive or imagine **a small thing** that is in fact a large thing (the sun), if we also have **the opinion or the knowledge that the thing is large**. Size is one of the common sensibles which can be seen falsely, (II-6 and III-1), but although it is false it need not put us into error if what we **premise** is a true size along with the false perception.

Earlier he said that **imagination** is mostly false, but **we** need not be in **error** with it because it does not involve premising that what we imagine is so. Now he says that we can avoid error **also in sensing**, if we add a premising that differs from sense but is true. With knowledge and opinion we can deny what percept and image picture. Now he pursues the argument all the way. Since opinion can contradict sensation, a blend of both could contradict itself. Or the blend would change our opinion.

So it follows on this view either that we shall have abandoned the true opinion that we had, although the circumstances remain as they were,

and we have not forgotten it or been persuaded to the contrary,

or,

if we still have it, the same one (opinion) must be both true and false. But it could become [properly] false only if the circumstances changed without our noticing.

By the principle of contradiction (*Meta* IV) it is impossible for Aristotle that the same thing at the same time in the same respect would be both true and false." A **true** opinion cannot also be false, or become false unless what it was about has changed without our noticing and getting a chance to change our opinion.

Imagination, then, is not any one of these [sensation opinion] nor is it formed from] them.

Now Aristotle gives his account of imagination. In distinguishing imagination from the others, he has established a number of its characteristics which he can now state formally as a series of premises:

428b10-14 But **since** it is possible when one thing is **moved**, for another to be **moved by it**,
 and **since** imagination is held (*dokei*) to be **a kind of motion**
 and not to occur apart from sense-perception,
 but only in what perceives
 and **of that of which there is perception**,
 since too it is possible for motion to occur as the result of the
 activity (*energeia*) of the perceptions,
 and this must be like perception --

Sensing involves motions through a medium that reach the five organs which give them sense-proportions. These motion continue to the common organ (the touch center) where they join. Images are a further movement of these joined sensings. Note also below (428b33) that

“imagination persist.” They are lasting impresses on the common organ (the touch organ).

Imagination presents what is not there but the animal doesn't err about this because images are actually memory-impressions, and animals that have them recognize that they are from the past, not from present perception (as Aristotle tells us in *M&R*).

As Aristotle always does, he goes into detail about the motions and the ingrained impressions only in his writings on soul-and-body, not in the *De Anima*.

SEE ENDNOTE 98 ON WHY MEMORY IS EXCLUDED FROM THE *DE ANIMA*. THE DIVIDING LINE FOR INCLUSION: FUNCTION VS. MOTION; WHY MEMORY IS A MOTION.

It is important to notice that images have to be “like” sensation. Imagery contains only what is capable of being sensed, he says. Images from the past could combine into something that has not been sensed, but imagination does not do its own “discriminating,” i.e., creating. According to Aristotle it offers to thought only what sensation has provided.

These were premises (“since ..., and since..., since too...,”). Now the conclusion:

428b14-17

-- **this motion** cannot exist apart from sense-perception
or in [living] things that do not perceive;
and in virtue of it its possessor can **do** and **be affected by** many
things,
and it may be both true and false.

Since it is the continuation **of sense**, imagination cannot occur without the sensation of the same content having occurred first. Aristotle has already said that imagination **may** be true or false, although we need not err, if we don't premise what we imagine. But now he will give the reasons why we may err (the reason for the last line above):

428b17-22

This happens for the following reasons:

1 Perception of the **specials** (1) is true or is liable to falsity to the

least extent.

- 2 Secondly (perception of) **the things** (2) of which those (1 above) are accidents (συμβεβηκός attributes);* (see * at b23-25)

and here now it is possible to be in error, for we are not mistaken on the point that there is white, but about **whether the white object is this thing or another** we may be mistaken.

The special sensibles (colors, tastes, etc.) are sensed directly but they are only **accidents of the thing**. The thing (e.g., the son of Diaries or bile) of which colors or tastes are accidents-- the thing is **sensed** indirectly which he called “incidentally” or “accidentally” (“incidentally” and “accidentally” translate the same Greek word). The colors and sounds are **accidents of the thing**, not what essentially defines what thing it is. A squirrel can be red or brown. But the mode of sensing colors is direct, which he called kath auto in II-6. On the other hand, the thing is sensed indirectly, which he called “incidental sensing” (or accidental sensing) in II-6.

- 428b22-23 3 Thirdly (perception) of **the common-objects** (3) which are due to the incidentally-sensed things (2) [which are also the things] to which the specials (1) belong

In 3) about the commons Aristotle mentions the other two. The sentence can help us to grasp their relation: He says that the 3) commons result from the 2) things with all their accidents (among these accidents are 1) the specials). The sentence also says that the commons belong to the thing, whatever the thing is, for example Socrates or bile. What something is, is not an accident of the thing, but we **perceive** it only **incidentally**.

- 428b23-25 I mean, for example, motion and magnitude
which are attributes (συμβεβηκός) of these [things]

i.e., motion and size are attributes of the things (2 above);
about these then it is most possible to be in error in sensing

* The Oxford manuscript and some English translations have moved the phrase I put in italics from here into 2) above, (where I have placed an asterisk). Moving it seems to remove a difficulty. I think it belongs where it is. However its placement does not make a great difference.

SEE ENDNOTE 99. ON MOVING THE PHRASE FROM 428b24

These have been our familiar three from II-6 and III-1.

There is most error in the commons, less in the only-incidentals. Error as to what the one thing is, is less likely than whether it moves, or its size, if it is far away.

The meaning of 3) is difficult to untangle. The sentence combines all three. The commons are sensed directly, but they belong to the things which are sensed indirectly, the mode of sensing he calls “incidentally.” When we sense, for example, a motion, it is **the motion of some thing**. The things move. Or we see and touch **their** size and shape. Both the motion and the special sensibles belong **to the things**, i.e., loud or tasty belong to the things.

Now Aristotle tells us in what way the last passage has told “the reasons” (three of them) why imagination may be true or false:

428b25-30

The motion which comes about as a result of the activity (energeia) of sense-perception [i.e., the images]

will differ in so far as it comes from these three kinds of perception.

The first is true **as long as perception is present**, while the others may be false whether it is present or absent, and especially when the object of perception is far off.

Again we notice that imagination doesn’t add anything -- not even something false! It only has what sense has. It can be false where sense is false or absent.

Uniting different sense-derived images into one new one will be discussed later (III-7 and III-11, 434a9).

It is an error **of incidental sensing** when we take the white powder for sugar, and it

turns out to be salt. We answer the phone and it was the phone next door that rang. We try to pack a snowball and it turns into water. Those are errors we make when we do sense the thing. We notice that Aristotle says that sense-percepts can bring the same kinds of falsehoods as imagination can bring. In sensing some sensible thing is present, whereas in imagination it is usually not, but the pictured content of sensing need not be true of the thing.

Now the definition:

428b30 If, then, nothing else has the stated characteristics except imagination, and this is what was said,

imagination will be a motion taking place as a result of sense-perception in act (*energeia*).

The efficient cause: the motion of sense;

The formal cause: what is perceptible;

The material cause (not told here:) the ultimate organ;

The final cause, (partly said earlier:) comes just below (to be able “to do and be affected by many things . . .”).

**SEE ENDNOTE 100 ON THE LIMITED ROLE OF IMAGINATION FOR ARISTOTLE
COMPARED TO MODERN WESTERN PHILOSOPHY**

428b32 And since sight is sense-perception *par excellence*, the name for imagination (*phantasia*, φαντασία) is taken from light (φάος),

This fanciful etymology tells us clearly that of course **imagination** is the continuation of **all five** senses, not just vision.

428b33 And because **imaginations persist** and are similar to perceptions, animals do many things in accordance with them, some because they lack nous, viz. beasts, and others because their nous is sometimes

obscured by passion, disease, or sleep, viz. humans.

As to what imagination is, then, and why, let this suffice.

III-4

OVERVIEW

The chapter has three parts.

In the first part Aristotle asks certain questions, answers some of them and leaves some of them open.

In the middle section, 429b6 - to 429b21 (from “When the nous has become each knowable thing. . .”) Aristotle leads us through a series of understandings, and then to a conclusion.

In the third section he answers the questions he had left open.

TEXT

429a10-11 In respect of that part of the soul **by which** (ᾧ) the soul both **cognizes** (γινώσκειν) and is **prudent** (φρονεῖν),

In Aristotle’s use, the word here translated “cognize” (γινώσκειν) includes many kinds of knowing. Prudence is practical, and also involves the connective kind of thinking Aristotle calls “dianoia.” The span between the ginoskein and prudence includes all kinds of cognition. Note that they all happen **by means of** (ᾧ) this part. No distinctions have as yet been made.

429a11-12 whether this is separate (χωριστός),
or not spatially separate (κατὰ μέγεθος)
but [separate] only in definition (*logos*),

The material question: This part (or function) of the soul might be separate from the other soul-parts as one stone can be “separate” from another stone. Or, it might be “separate” only insofar as it has its own “separate” definition. For example, in a small organization the

secretary might serve also as the treasurer. Then these two differ “only in definition.”

If nous is separate from the other soul parts, then it is also separate from the body. The other soul-powers are for activities that involve the body, or parts of the body. They are forms-of-body. The question whether nous can exist separately from the body has been with us since I-1 (403a8-10).

429a12-13 we must inquire what distinguishing characteristic (διαφορᾶν) it has,

The question of the formal cause: What is it; i.e., what defines it?

429a13 and how thinking (*noein*, understanding) is generated (γίγνεσθαι).

The question about the efficient cause: How is this part of the soul brought about?

In so far as it would be “generated,” it is not something eternal. (In III-5 he will distinguish an eternal nous.) The generated nous is the nous which **can** develop when we learn.

Aristotle has asked three questions about this part of the soul: Is it separate from matter? What is it? How is it generated? (The material, formal, and efficient cause. The final cause is discussed in the next chapter.)

A NOTE ON TRANSLATIONS

“Understanding” is a better translation of “nous” and “noein” than “thinking,” but since the translators use “thinking” I will sometimes use “thinking” as well. But we must not let the word “thinking” mislead us. In English “thinking” is usually assumed to be only an intrapsychic process. The kind of thinking which Aristotle calls “dianoia” is closer to what we call “thinking” in English. Aristotle says dianoia is an attribute of the soul, not of things, and also that it involves the body. (It is guided by the sensuous mean, III-7, 431a16-20). Where he uses “dianoia” I will indicate it of course.

*The English word “understanding” at least carries the implication that we can **understand something that exists not only in us**. For Aristotle nous is a grasp of the active ordering in what exists. What is translated as “an object of thought” would be more correctly rendered as “**an understandable**” (noeton). It is something existing that we can grasp. What is translated “a sensible object” Aristotle refers to as “a sensible” (aistheton).*

429a13-15 Now, **if** thinking (*noein*) is **like** sensing, it would be either being **affected** (*πάσχειν*) in some way by **the object of thought** (**νόητον, noeton, the understandable**) or in some different way of this kind.

This is a comparison, an analogy or proportion: “just as this is to this, so that is to that.” Aristotle doesn’t say that thinking **is** like sensing, only that **if** it is like sensing, then **as** the sense-object affects the sense-capacity, **so** the thought-object would affect the thinking-capacity. He will say more about this analogy below.

We will now see that even the generated nous which learns and develops is “unaffected.” In the case of sensing, **an external motion from the sensible object must affect the organ**. So it can seem that **the object of thought** (the understandable) must affect us in some way. But nous as we last discussed it in Book I (408b22-25) is **totally** unaffactable. He will remain consistent with this, and will offer more arguments for it in the next passages.

429a15-18 It must then be **unaffected** (*ἀπαθή*), **but** capable of **receiving** (*dektikon*) **the form**,
and be **potentially like it**, although **not identical** with it;
and **as** that which is capable of perceiving (*aisthetikon*), **is to** the objects of perception,
so similarly the **nous** must **be to its objects** (*νόητα*).

Now he has called this part of the soul “nous.”

Aristotle has changed the proportion. Now he no longer says “**if** . . .” He is sure of what he now says. The previous phrase “affected by the object” has been changed to **unaffected** (*ἀπαθή*). He has limited the analogy with sense to just what is needed and **does** apply here: As the eyes are **able to** receive the colors, so this nous part of the soul must be **able to receive** the thought-forms. He leaves the question open, just how nous can “receive” without anything affecting it. He will answer it in the third section of the chapter.

A sense organ, for example the eye, sees no color just by itself. Of course, if you look at an eye it has a color but it doesn't see that color. Until some object activates it, the seeing has no color. Then, in ongoing seeing, the sense **takes on** the color of that object. It **becomes** "like" the object. Ongoing seeing and the object have the same single color form.

Note "not identical." As potential, the sensible thing and the organ are two different things. The organ is potentially all forms, but **not identical** with any. The potential nous **can** become like any understandable (noeton), but is none of them. It is not ongoing **understanding**. Aristotle has not yet talked about the activity of nous.

SEE ENDNOTE 101 THE ANALOGY BETWEEN UNDERSTANDING AND SENSING.

He continues about nous being unaffectedable.

429a18-20

It must, then, since **it thinks** (νοεῖν) **all things** (παντα), be **unmixed**, as **Anaxagoras** says, in order that it may **rule** (κρατῆ), that is, in order that it may cognize (γνωρίζειν);

Please note that nous thinks **all** things.

The philosopher Anaxagoras (See I-2 and my Commentary there) said about nous that it **rules** (or determines, κράτειν) all things, since by "nous" he meant **both** the nous of the universe and ours. As in Book I, Aristotle does not disagree, but adds "that it may cognize" (γνωρίζειν, a broadly used term). As we will see throughout, he retains Anaxagoras' meaning of "nous" for both our nous and the nous of the universe. But Aristotle wants to show here **how we individuals come to know**.

Nous must be unmixed

429a20-22

for the intrusion of anything foreign to it (παρεμφαινόμενον) hinders and obstructs it; hence too,

it must **be no other nature than this, that it is potential.**

Concerning nous Aristotle begins with the potentiality, just as he began with potentiality in the case of sensing in II-5, and again in each chapter on a specific sense. He is now considering nous as the potentiality of receiving, i.e., of taking on the understood forms. Why can nous have no nature other than potentiality? We recall that a sense organ is potential in regard to **all** possible objects **of that sense**. For example, the ear is such that it **can** hear **any one of the many different sounds** and **has no actual sound** of its own. When the ear has a ringing sound of its own, then it hears that one and cannot hear (potentially receive) the many possible sounds. But the ear **does** have its own **actual** nature since it is made of actual flesh and encloses air. It remains **purely potential only in regard to sounds**. But nous can receive (is the potentiality for receiving) the forms of everything.

429a22-24

That part of the soul, then, called *nous*,
(and I speak of **nous** as that **by which** (ᾧ) the soul **thinks**
(*dianoesthai*) and **supposes** (ὑπολαμβάνειν)
is no existing thing in act (energeia) before it thinks (noein).

Aristotle uses “hypolepsis” (ὑπολαμβάνειν, translated here as “supposing”) to name what we do when we not only picture or think something but believe that it is so (III-3, 427b14).

Dianoia (“*dianoesthai*”) the usual thinking and asserting happens **by means of** (ᾧ) the **potential nous**. So we can take “*dianoia*” to mean “through-nous.” Of course our ordinary thinking which combines the thoughts which we **have learned** must have been preceded by some actively ongoing **learning** and **thinking**, but Aristotle is not yet discussing the activity of understanding.

Nous must be capable of (potentially) taking on the understandable forms of “**everything**” (πάντα); therefore it cannot have any form of its own. It must remain potential **in all respects**. Therefore it cannot be something actual at all. The potential nous is nothing actual before it learns. It is just the human capacity for learning. Once it has learned, then it is the potential forms it has learned.

Let me ask: When the nous is still purely potential, what is **actually** there? There is sensation and organized memory (as he says in *PA* II-19), but in animals these capacities and

equipments have no capacity for nous (universals, symbolizing, abstracting, theorizing). So the potential nous is not sense and memory. Even **just** the human potentiality for nous is in a way a great thing, although it is not a thing.

Aristotle knows that we are puzzled about how such a non-thing can be. He returns to explain it in the third section of the chapter. Right here we need to follow his argument by which he concludes that since it can receive **all** forms, it cannot have any characteristic of its own:

429a24-27

So it is reasonable that it is not mixed with the body, or it would **come to be** (γίγνεσθαι) **of a certain kind**, hot or cold, or have an organ like the faculty of perception; but in fact it has none.

A body is generated as a mixture of the elements (resulting in a certain proportion of hot, cold, fluid, dry). If nous were bodily, it would come to have just certain characteristics. It would be generated as a certain mixture. It would have a certain temperature and be just so and so fluid, or brown, or heavy. But to be **able** (= potential) to take on the form of **all** things, it must be potential in every regard whatever; and cannot have any actual characteristics. Aristotle argues that therefore it cannot be a body, or bodily.

Aristotle means that this nous involves no material part **of its own**, no **additional** part, just **an additional function**. The potential nous does require the already-existing parts, sensation, memory, and imagination. He will explain this later (429b31).

Since it has no actual characteristics of its own, nothing can make a change in its characteristics. So it cannot be affected (i.e., changed). It is no actual thing, nothing but the potentiality for becoming any form.

429a27-28

Those who say, then, that **the soul** is **a place** of forms speak well,

This purely potential nous is like **a place** for the knowledge-forms. It is not matter but it fulfills a role somewhat like a matter for knowledge-forms.

We might ask: Is this “place” the soul or the potential nous? But the potential nous is (a part-function of) the soul. Aristotle says here that “the **soul** is the place of forms”

429a28-29 except that it is not the whole soul but the part which can think (noietike, νοητική), and it is not actually (*entelecheia*) but potentially the forms.

Of course nous is not the “whole soul” since the soul includes nutrizing and sensing. He calls it the “noetike,” the can-think.

It is important to notice that Aristotle says here that nous “is not actually” the forms. These thought-forms are knowledge. They are only potentially there. Even after we have learned them we can enact only a few at any one time. Most of them are always potential.

429a29-30 That the ways in which the faculties of sense-perception and nous are unaffected (ἀπάθεια) are not the same

As activities both sensing and nous are “unaffected,” but sense comes into act only if a motion from an external thing affects the organ.

429a30-429b4 is clear from the sense-organs and the sense. For the sense is not capable of perceiving when the object of perception has been too intense, e.g. it cannot perceive sound after loud sounds, nor see or smell after strong colors or smells.
But when the nous thinks something especially fit for thought
(ἀλλ' ὁ νοῦς ὅταν τι νοήσῃ σφόδρα νοητόν,)
it thinks inferior things not less but rather more.

As Aristotle said in II-12 and III-2, since the sense organ is a bodily proportion (like the tuning of a lyre,) i.e., a system of relationships, therefore it can be destroyed or hurt by impacts that are too intense. Since the nous activity does not involve a bodily proportion, no understanding is too intense. The destructibility of the proportion in the sense-organ which he has mentioned so often in the chapters on sensing now furnishes a difference between sense and thought. Understanding something “with blinding clarity” does not incapacitate you for

grasping the next thing. If anything, it helps. The fact that sense is a proportion and nous is not, provides the reason (cause, middle term) for the assertion that nous is separate from the body.

429b4-5

For the faculty of sense is not independent of the body,
whereas **the nous is separate** (χωριστός).

Now he has explicitly affirmed that nous exists separately from the body.

In regard to the **potential nous**, the three questions he posed at the start have now been answered this far: It is separate from matter and not only separate in definition. Its defining characteristic is pure potentiality for all forms. He has not said how the potential nous is generated, only that it is not generated as a bodily mixture.

In II-5 he told us that the universals are generated internally (of course from sense and memory). Such universals are “the first ones” most every person learns, such as man, horse, water, line, etc. (PA II-19). Adults all have these. Aristotle will now lead us through the internal generating of some further understandings.

429b6 - to 429b21 MIDDLE SECTION OF THE CHAPTER

Aristotle now makes a transition from the **purely** potential nous (nothing actual) to the developed potential nous as a power, a “can.”

429b5-9 When the nous has **become** each knowable thing (επιστημων) in the way that **someone who is actively (energeia) knowing** is said to do so (and this happens when he **can** exercise (energein) his capacity **from himself**), **it is potential even then** in a way, although not in the same way as before it learned (μαθεῖν) or **discovered** (εὑρεῖν).

Note “discovered.” Everything need not be learned from a teacher, as Aristotle surely knew. We can discover things and figure them out ourselves.

Aristotle means that when our potential nous has learned some universals, then **we** can think and understand whenever **we** want. (This would not be possible without the always-active nous which he has not yet discussed, but it is with the potential nous that we **can**.) He says that when nous has knowledge, it is still potential but not in the same way as before. It is potential because we do not always enact the learned forms. Sometimes we eat or sleep. Aristotle thinks of the knowledge-forms as habits. Being **able** to enact what you know is a learned habit like the habit of acting morally. The habit shapes your actual (*entelecheia*, completed) soul, but you are not always enacting your habits, and certainly not all of them at once. All but a few of them must remain potential. There is also another reason why “it is potential even then in a way.” Even what we do enact is only potential if we enact it just within the soul, without the things being present. (See ENDNOTES 45 and 117, section 4.)

When we have learned, **we can** activate our understandings. Knowledge is a “first actuality.” Knowledge is the instance Aristotle used in II-1 to define his concept of “first actuality” (412a27). The soul is a first actuality, actually existing but also only the potentiality for activity which may or may not be happening. Right here the concept of “first actuality” has its home ground. Acquired knowledge is **actual** as the formal-and-efficient cause of the noetike soul (II-2, 414a4-14), but only **potential** in being sometimes active, sometimes not. But what does Aristotle mean by saying that this nous **is** (“has **become**”) the knowable (επιστημων) things? The knowledge-forms are its only actual existence. It was nothing actual before it

learned. Now the potential nous-soul **has become** the forms it learned. They are what it is, its only existence.

This learning begins (See *PA*, II-19) with particulars and organized memories which become “experience.” At that stage, he says, the “first universal has made a stand” in the soul. Everyone knows the ordinary universals like “dog,” “horse,” “animal,” “plant,” “human being,” “ear,” “nose,” “stone,” “flesh,” “bone,” water, line, triangle. Aristotle calls these first notions “principles” because we cannot acquire them by reasoning or demonstration. Before there can be demonstration, these understandings must be acquired **as single grasps** through the **active** nous, as he will show later (end of III-6). The potential nous only learns i.e., “becomes” them. **These are not assertions, not true or false, just single grasps of ordinary familiar things.** We need to have learned them before theoretical thinking can start, because it **starts** from them.

Theorizing with these ordinary universals leads to **causal understandings**, essential natures, what each kind of thing is. What Aristotle means by “*noein*” is something that animals do **not** do. When the smart cat figures out how to unlatch the screen door, this is not *noein*. Aristotle says it has memory and sense-images, and it acts on those. We saw how much Aristotle was able to derive from sense -- much of what we moderns call “thinking.” Aristotle credits animals with a great deal more than our culture does. But he does not credit animals with nous.

Theoretical thinking is quite far from ordinary thinking. It is a rare further development. In the *Metaphysics* (I-1, 981a8) Aristotle tells us that theorizing is **not** happening when an “empirical” physician gives you a medicine without knowing why it works, only that it helped another person in your condition. Aristotle says that such a doctor is merely going by “experience.” It is not “*noein*,” rather just memory and an ordering (*logos*) of experience (*PA* II-19 and *Meta* I-1). Only if the doctor has **grasped the cause**, why this kind of medicine cures this kind of illness, is it “*noein*.” To grasp the cause means grasping the internal link between what the illness is, and what the medicine is. What Aristotle means by theoretical thinking is very demanding. Most people do not develop it at all. Aristotle will soon lead us through a sample.

Having learned, one can enact one’s thinking (*noein*) from oneself,

429b9

and then it [nous] **can think itself** from **itself**.

(καὶ αὐτὸς δι' αὐτοῦ τότε δύναται νοεῖν)

When we have learned, then our potential nous is a power to think (of course with the active nous but that nous is always active, as he will say later).

In Greek the word “itself” (*auto*) appears twice. Many translators skip one. We don’t want to miss this double “auto.” Now nous can think **not only from itself**, but thereby it can **also think itself**. Later he will explain: Since the nous is (has become) these forms, it knows itself in knowing them. (429b26 and 430a2).

Aristotle moves from the sentence about “thinking itself” into the next part where he will lead us in the active making/grasping (as well as learning-becoming) of causal (i.e., internally linked) forms.

THE PASSAGE ABOUT THE PAIRS: THE THING // THE “BEING” OF THAT KIND OF THING.
WE WILL GIVE THIS PASSAGE THREE LOOKS: FIRST OVERALL, THEN MORE CLOSELY,
FINALLY LINE BY LINE.

FIRST LOOK:

LET US FIRST GIVE THIS PASSAGE AN OVERVIEW: I will return to comment on it twice more. For now just look at the two columns Aristotle is setting up.

429b10	Since these are different:
	a sizable thing (megethos), and the being (εἶναι) of a sizable thing
429b10-11	and water, and water's being,

He gives us two pairs:

<u>a sizable thing</u>	//	<u>the being of a sizable thing</u>
<u>water</u>	//	<u>the being of water</u>

By “a magnitude” (τὸ μέγεθος) Aristotle means a particular **thing**, a body that has size, not an abstract mathematical object. He explicitly names abstract mathematical objects much later in the list. “A magnitude” is a sizeable thing, for example a stone, a tree, a hand, or a nose.

SEE ENDNOTE 102 ON MEGETHOS

429b11-12 and so too in many other cases
(but not all, **for in some cases they are the same**),

In each pair the thing is contrasted with its “being” (einaí). The translations vary. From the Latin translation of “being” we get “essence” which fits, but not if it is also used to translate other terms. A thing’s **being** is what defines it. But of course, a definition is a verbal statement, whereas by “being” Aristotle means that **in the thing** which a definition would get at. The sensible particulars (in the left column) are contrasted with the understood forms in the things (in the right column).

SEE ENDNOTE 103 ON EINAI AND KATHOLOU

In the middle of the list Aristotle moves explicitly from sensing to thinking. He says that thinking is either different from sensing, or it is the same thing but differently defined.”

429b12-13 we discriminate (κρίνειν)
the flesh's being,
and **flesh**
by a different, or differently defined [faculty] (ἢ ἄλλω ἢ ἄλλως
εχοντι)."

Then he tells something about “**snub**” We will return to it later.

There is a complicated analogy with a line first bent and then straightened. We will return to it later.

Near the end of the series (429b18-21) Aristotle refers to “abstract existents (ἀφαιρέσει ὄντων).” These are mathematical objects.

the straight (a straight line)

the being of straight (two)

The left side of the pairs is a particular.

The right side is what defines it.

In ordinary use the word “snub” always means the shape **of a nose**. “Snub” always

means the shape of a nose; the nose is its matter. Aristotle's point is that "snub" is **defined by its matter**. To tell someone what "snub" means, you have to say that it is the concave shape **of a "nose."** Aristotle uses this to talk about things that cannot be defined by their form alone but always only as the arrangement of some specific matter like the curve-of a nose. He goes on to call anything "snub" if it cannot be understood apart from its matter.

Aristotle says that every curve can be defined as so much deviation from a straight line. A curve isn't defined by curves but in terms of a straight line. You draw the curve, but the what-it-is of the curve will be a straight line plus the deviation. (In modern analytical geometry we define a curve by two straight lines, an X axis and a and Y axis.) Aristotle is arguing that the curve is like "snub," defined by its "matter" (in turn); the zone within which all sorts of deviatig curves can be drawn. The deviation from a straight line defines each curve, but he calls the straight line "snub" in its turn, because the line exists only in the imagined spatial continuum (συνεχὲς). This continuum drops out when you define the line in terms of two points. If you keep the line, you also keep the continuum just as to say "snub" means you have kept the nose, not gone to concave which is the being and definition of "snub."

To define a straight line requires two points, so you need the number "two" but the number doesn't need the spatial continuum of geometry, so it is further away from matter. But the number is "snub" in its turn, because the number exists only on the continuum of counting numbers. You need the series of **possible** numbers to think "two." Count up to it -- **there** is two. What it **is** is not something understandable as its own form or concept, rather only within the "matter" between one and three. (Why call it "matter?" Because it is the field of all possible numbers, not actually any one number. You need this "matter," the continuum of the row of counting, in order to have "two." So the number two is also snub.

Although each of these things is snub, you can see that both sides are becoming more abstract, further away from bodies. We went from a body and an element to a curve, a line, and a number.

And then comes Aristotle's conclusion:

429b21-22

universally (καὶ ὅλως),
as the things (πράγματα) are separate (χωριστός) from matter,
so also those of the understanding (nous).

Now Aristotle has moved to this universal conclusion. He draws the conclusion from all the pairs. They were the instances from which he moved to this conclusion: **The things** in the

left column are separate from matter to the same degree as “**those of the nous**” in the right column. Below we will examine what he means by increasing separation from matter.

Let us first understand the two columns. On the left we have a body, an element, flesh, a curve, a line, and a number. On the right we have **what it is to be** those things, i.e., how they are definable. For Aristotle particular mathematical objects are abstract **things**. We are not accustomed to think of “things” as being “abstract.” On the right are understandings. We are not accustomed to consider what is understandable and definable as being in the things.

“Two” is on the left, whereas “twoness” goes into the right hand column. A line is a particular thing, (for example this line from point A to point B bisected at C). How the line is defined is something understandable. (About “abstract existents” (ἀφαιρέσει ὄντων) see *Meta* III, 998a1-6, *Meta* VII-10, 1036a3, and *Meta* XIII-2).

So the difference between the two columns in each case is between particular things and understood objects.

SECOND LOOK AT THE PASSAGE: LET US EXAMINE THE PASSAGE SOMEWHAT MORE THOROUGHLY. LET US FILL IN THE TWO COLUMNS:

a sizable thing	being of a sizable thing
water	being of water
and flesh	the flesh's being
snub (as of a snub nose)	the being of snub
concave	being of concave
straight	being of straight
two	being of two
<u>As</u> these . . .	<u>so</u> those

Let us see exactly why water is further from matter than sizable things like rocks or plants or a nose. Water is an element (in Greek science there were four elements, fire, air, earth, and water). Aristotle said that every delimited body is a mix of all four (*De Gen. et Cor.*). **So the vast variety of sizable bodies can all be defined by the mix of just these four**

elements. One of them is water. Water is “further away from matter” (i.e., changeability) than the millions of different kinds of bodies. By “matter” Aristotle means changeability, variety, possibilities. Water is one of just four elements in the composition of all the bodies.

Next, what is less changeable and variable than water? For Aristotle an element has no further constituents (not as we are used to dividing into smaller and smaller particles). For him the four elements are defined by just two qualities. Water is defined as cold and fluid. These two qualities are **defined by** their deviation from the mean of all four, which is the flesh. Aristotle showed this in II-11, but it will take me longer to recall it all here. I will do that below.

One “concave” curve **defines** not just a certain shape of noses, but of all things that have that shape. Further, the being of all curves (not only concave) is in turn **defined by** their deviation from just one straight line (*De Caelo* I-4, 371a10). Next, what defines (what is the being of) “straight?” A definition of “straight line” might be “the shortest distance between **two** points.” If two points are determined, the line is determined. And, while two points define a line, they are in turn defined by just one number (the number two”).

As we move up the ladder, each next step has more explanatory power. Each is one in relation to a great variety of “matter,” i.e., change possibilities.

SEE ENDNOTE 104. THE STRAIGHT, AND OTHER PLACES WHERE IT IS MENTIONED.

In each pair, the **mere phrase** “the being of” doesn’t tell us what this being is. Only **from the next step, looking backwards,** are we able to grasp **what it really was, under the phrase “the being of.”**

A child knows stones, water, flesh, lines and numbers, but not their being. A child does not know that the elements compose bodies, that water is an element in all solid bodies, that the flesh-mean defines the elements, or that “two” defines straight.

In this series we understand each kind of thing only in terms of the next kind. **What we understand in each being is how it depends on the next higher thing.**

THE LINE-UP OF THE PAIRED ITEMS:

Since a megethos and what it is to be a megethos are different,

A MEGETHOS (a 3-d body)

BEING OF MEGETHOS
defined by its composition of fire,
(air **water**, earth)

and water and what it is to be water

WATER

BEING OF WATER
(defined by **cold and fluid**)

WHAT IT IS TO BE FLESH
defines the hot-**cold & fluid**-dry

AND FLESH ITSELF . . .
It is with the faculty of sense-perception that
we judge the hot and the cold . . . of which
flesh is a certain proportion

*For flesh does not exist apart from matter,
but like the **snub** it is a this in a this.*

SNUB

BEING OF SNUB (**concave line**)

as a bent line is related to itself when straightened out

CONCAVE LINE

BEING OF CONCAVE LINE
(defined by **straight line**)

STRAIGHT LINE

BEING OF STRAIGHT
(defined by **two points**)

TWO

BEING OF TWO
(duality, the number 2)

ACCORDING TO THE WHOLE:
As the things are separate, so "those" of nous.

THIRD LOOK: NOW LET US EXAMINE THE TEXT LINE BY LINE.

429b10 Since these are different,
 a sizable thing, and the being (εἶναι) of a sizable thing
 429b10-11 and water, and water's being,

Water is one of the four elements. Every **solid** body is composed of all four: air, earth, fire, and water in some proportion. (Something perfectly dry would be a powder which would not cohere as a body. *De Sensu V*, 445a23, *De Gen & Cor* 330b23, 335a1). So “the being of a sizable thing” (i.e., a body considered just as sizable) would be defined in terms of its elements including water.

But water also differs from the “being” of water.” It is defined by its fluid and cold qualities.

429b11-12 and so too in many other cases
 (but not all, **for in some cases they are the same**),

The parenthesis:

By saying “but not all” cases, Aristotle leaves room for the special case of **things that can be understood just in terms of their own being**. In the case of what he calls “substances” there is no difference between the thing and its being. For example, the soul, i.e., the being of a living thing **is not defined in terms of something else**. Aristotle defines living things in terms of their own activities, not their elements, shapes, or numbers. Notice that none of the things in this series here are living things. Living things exist in matter but **what they are** is not defined by their matter. If we consider just their being, we still get their own “form,” i.e., the power to originate their activities. The being of a living thing is its soul, but the being of the soul **is** the same as the soul. “Soul and the being of soul are the same” (ψυχῆ μὲν γὰρ καὶ ψυχῆ εἶναι ταυτόν, *Meta* 1043b.2). ” (See also ENDNOTE 2.) But although he has shown all this up to here, the difference between substances and other things is not discussed in the *De Anima*. It is considered in a very long discussion stretching over much of the *Metaphysics*. **The parenthesis alerts us to notice that none of the things in this progression are living things. As he will now show, each is defined by something other than itself.**

SEE ENDNOTE 105 ON THINGS DIFFERENT FROM THEIR BEING CONTRASTED WITH SUBSTANCES

The sentence which began with “Since these are different ...” continues:

THE FLESH PAIR:

429b12-13 we discriminate (κρίνειν)
 the flesh's being,
 and **flesh**
 by a different, or differently defined [faculty] (ἢ ἄλλῳ ἢ ἄλλως
 εχοντι)."

In Aristotle's use throughout, the word “discriminate” (*krinein*) names what both *noein* and sensing do. Both of them differentiate and present something. Aristotle says here that the discriminating by thinking might be a different power than by sensing, or it might be the same power in some different mode. It will turn out to be both, since nous is really quite a different power, but it is a further kind of proportioning **from** the sense-proportioning.

Just notice that unlike the first two pairs, the “being” of flesh comes before the flesh.

SEE ENDNOTE 106. ON THE REVERSAL OF “BEING OF FLESH AND FLESH;” THINGS OR RELATIONS?

429b13-14 But there is no **flesh** apart from matter,
 like the **snub** it is a this in a this.

“Snub” is Aristotle's general term for anything that is defined by its matter. This snub here has nose flesh as its matter. But the flesh doesn't do the sensing. The sensing is an activity.

429b14-16 Now it is **by the faculty of sensation** (the can sense)
 (αἰσθητικῷ) that we discriminate (κρίνειν)
 the hot and the cold, and those

which, in a certain proportion (λόγος) are flesh."

The material flesh consists of a proportion of the hot/cold and fluid/dry. As their mean the flesh also defines these qualities by their deviation from its middling proportion. The deviation is transmitted through the flesh. But the flesh doesn't sense. It is by the power for sensing that we sense these qualities (II-11). So the flesh is the mean which defines the cold and moist, but the sensing discriminates the touch sensations.

SEE ENDNOTE 107 ON THE FLESH AS THE MEAN

Now Aristotle distinguishes sensing from thinking:

429b16-18

But we discriminate **the being** of flesh

by something different,

either separate

(ἄλλῳ δέ, ἤτοι χωριστῶ)

or something which is related to sensation

as a bent (κεκλασμένη) line **relates to itself** after it has been straightened.

Imagine a circle with a gap, the two ends pointing at each other. At the open end it seems to be two, but it is really the same single line pointing at itself.

In Book I, (406b31-407a2) Aristotle cites Plato's *Timaeus* where an originally straight line is bent (*kuklon*) into a circle. This was Plato's image for how the sensible world is generated from the more abstract. Aristotle straightens the line out again, moving in the opposite direction, from sensation to understanding. Now it is **the bent-line-which-has-been-straightened.**

The bent and the straightened are not two lines, not a bent line that relates to a straight one. There is only one line. **The one line relates to itself first as curved, and then as straightened** (ἔχει πρὸς αὐτὴν). While it is still bent, it relates to itself with its two ends pointing at each other. But now, how does that same line "relate to itself" after it has been straightened? How does thinking move from two to one?

Even when you sense your own flesh, sensing remains always two. On both sides you have the yielding fleshy sensation, a middling warmth, middling soft, softer than earth but more resistant than water. Put your finger on your nose. The same flesh proportion is on both sides, but you always sense **the other** flesh, **either** your nose by means of your finger, **or** your finger by means of your nose. They remain **two**. We can get the single ratio only as a self-understood thought.

In perception there is no way to make one of the two Merleau-Ponty famously attempted to merge you sensing me with me sensing you, but this fails. Even in the same person, the finger that senses cannot be sensed while it senses. Aristotle expresses this in II-5 by saying that **the senses cannot sense themselves**. “There is a problem why sensings of the senses themselves does not occur, and why they do not generate perceptions without the external [objects]” τῶν αἰσθήσεων αὐτῶν οὐ γίνεται αἴσθησις, καὶ διὰ τί ἄνευ τῶν ἔξω οὐ ποιοῦσιν αἴσθησιν (417a.3).

The ratio of hot-cold and fluid-dry is **one** understanding which exists potentially on the **two** sides of the sensing. The pulled-out-straight line is an image of how the sense ratio function when the understanding understands itself.

For Aristotle thinking stays very close to sensation. Thinking (dianoia) is the sensing having acquired one more function. For Aristotle you are not thinking “red” if you are not thinking it **in** the image. Similarly the thought of “nose” is possible only if you have with you some visual impression of a nose, some sound of nose-blowing, and some tactile sense of the fleshy concreteness of noses, so that the thinking goes on “in” these sense-images. (There are images from all five kinds of sensations.) **The relation of sense and thought is very close.** Thinking is the two sensibles – taken as one.

Aristotle says in III-2 (426b20-23) and shows in III-7 that the same sense-ratio functions in sense and thinking (dianoia).

SEE ENDNOTE 108 ON HOW THE SAME LINE BECOMES THINKING

429b18-21

Again, in the case of abstract things

(ἐπὶ τῶν ἐν ἀφαιρέσει ὄντων)

the "straight" is like "snub"

because it is in continuity (συνεχὲς).

But **what it is for it to be what it was** (το τι ἐν ἐναί)

is different [from the line],

if straight's being (εἶναι) differs from the straight.

Let it be twoness. We discriminate (κρίνειν) it by means of something different,
or by the same but differently defined. (ἐτέρως ἔχοντι).

He emphasizes that the being of each of these things is different from the thing.

The phrase “what it is for it to be what it was” (to it en einai) refers to a thing’s single essential definition.

SEE ENDNOTE 15 IN II-1 CONCERNING THE PHRASE “TO IT EN EINAI”.

THE UNIVERSAL CONCLUSION:

At the highest rung here, there is again a proportion.

429b21-22

And universally (καὶ ὅλως),
as the things (πράγματα) are separate (χωριστός) from matter,
so also those of the nous [are separate from their matter].

Is this proportion definable without its matter? No, obviously not. Matter appears in it explicitly. So even this jump to the universal (“kai holôs”) is snub, too.

In the jump to the “holôs” we see that the understanding has moved from the pairs to **one** universal proportion. But this move to the “holos” still involves **two** columns, **the things differing from their beings** (“as the things . . . so those of nous”). We understood these things through their matter and we thought them along with images. Although each pair was more abstract than the previous, we have not yet arrived at **one** understanding that understands **itself**.

**SEE ENDNOTE 109 ON THINGS AND FACULTIES IN PARALLEL; ARISTOTLE’S
MANY “FINE” DISTINCTIONS AT THE EDGE**

SEE ENDNOTE 110. ON MATHEMATICS

LAST PART OF THE CHAPTER

So far, Aristotle has only partly answered his earlier question, how nous can “receive” the thinkable forms, considering that nous is unaffected (*απαθες*). He has shown that we understood the forms of megethos, water, and abstract things not just by nous alone but also by sensed and imagined matter (cold and fluid, the imagined continuum). But now, in this third part of the chapter he takes up things whose forms are understandable **only** by nous. For example, the nutritive soul is not hot or cold, and not something stretched out in the imaginary continuum like lines or numbers. Living things exist **in** matter, but they are not defined and understood by understanding their matter. The body does not explain the soul, rather the reverse. The body, the matter of living things is defined and generated by its living, its soul-form. The forms of living things are understandable only by nous alone.

So without sense and images how can nous receive their forms?

429b22-26

One might raise these questions:

Given that the nous is **simple** and **unaffected**,
and has **nothing in common** with anything else,
as Anaxagoras says,

how will it think, (*πῶς νοήσει*) if thinking (*noein*) is being affected in some way

(for it is in so far as two things **have something in common** that the one is held (*dokei*) to act and the other to be affected)?

What is simple and unaffected has no matter. “Simple” means that it is not composed of other things, for example, not a proportion of elements. The words “affect” and “in common” are both about matter. By “matter” Aristotle means affectability, changeability, the “can change.” To be affected by something, a thing must have some trait on a change-continuum, i.e., some matter. The hot thing acts on the cold and fluid; they have the hotter-colder continuum in common. The snub nose could be broken; the abstract curve can be bent more or bent less; the line would change if the two points that define it move. When one thing can act on another, they have some type of changeability (matter) **in common**.

But if neither the potential nous nor these forms contain anything else, there will be a problem:

429b26-28

And can it also be an understandable to itself?

(ἔτι δ' εἰ νοητὸς καὶ αὐτός)

But if it is understandable to itself, and (as Aristotle said earlier) the potential nous **is** nothing but the forms of the things and understandable to itself, doesn't it follow absurdly that the forms of things understand themselves (are nous) in the things?

a) Either:

For **either everything else will have nous,**

It seems to follow that the things have nous in them, since

if nous is an understandable (a noein-object) to itself
without this being **through anything else** (εἰ μὴ κατ' ἄλλο)
and if it is identical with **the forms (eide)**.

In the last line, note that Aristotle is now talking about "eide" which means the forms of independently existing substances.

Aristotle said earlier that the potential nous is nothing until it learns and **becomes** the forms of every kind of thing. But if nous **is** nothing but the forms (eide) **of the things**, then the forms of things **are** nous, and if nous understands itself, then it follows that the forms understand themselves **in the things**. But that cannot be so. Turning to the other alternative:

b) Or: (if nous is **not** just self-understanding)

429b28-29

or it [nous] will have something mixed in it
which makes it capable of being an understandable object
as other things are.

ἢ μεμιγμένον τι ἔξει, ὃ ποιεῖ νοητὸν αὐτὸν ὥσπερ τὰλλα.

If the nous did not consist **purely** of the forms, if nous were also something else, then

nous would differ from its being. For example, if nous were a mix of several factors, the proportion of the mix could be separately grasped numerically, and would be the “being” of nous. Nous and its being would differ, like the pairs we had up to now. Nous would have an understandable form but would not **be just** the form. In that case nous would not be just understanding and there would be no problem as the forms understanding themselves in things.

429b29-31 Now, being affected in virtue of something common has been discussed before,

Aristotle is referring to 429a24 in the first part of the chapter.

to the effect that the nous is in a way
potentially the objects of thought, although **actually**
(entelecheia) it is nothing before it thinks (noein).

His answer reminds us that this potential nous is not something actual, but it provides the function we need because it **can** become every thinkable nous form. But of course we have to wonder: How can what is nothing receive and become a form? How can it have been nothing before it receives?

429b31-430a2 **potentially** in the same way **as there is writing** on a tablet on which **nothing is** actually (*entelecheia*) **written**, that is what happens in the case of the nous.

Once again Aristotle uses an analogy with which to think his answer. Before it thinks, the nous in us is **like** writing that **could be** written but has not been written on a tablet that is still blank. The **tablet** is an actual thing, and so is its material blankness. But its **capacity** to receive something **understandable** written on it is not an actual thing. Like the tablet, our memory of sense experience actually exists, but their potential for being understood does not actually exist.

When I teach this passage in class, I make much of my blank blackboard, how special it is! All great statements of human knowledge past and future **are potentially written on it!** I stare at it admiringly. But this great could-be is nothing.

The chalk does physically change my blackboard, but **what the written messages say** does not change my blackboard. Much has been written on it over the years, but its capacity **to be understood** via something written on it is unchanged. The board might wear out after many years, but that concerns the material writing with chalk which corresponds to sense and memory. What can become understandable on the board is functionally not the same thing as the board. The chalk or its absence is not what **can be said** there. If you cannot read, the chalk marks will not help you. As usual, Aristotle's analogy isn't just an analogy, but involves what we are talking about and doing, namely the non-material but functional understandability of physical things.

What has not yet been written is not an active understanding. Even what is already written on the tablet is not an active understanding. Aristotle has not yet mentioned active **understanding**. So far we have:

- a) the material tablet,
- b) what could be but has not been written on it,
- c) what is already written on it,

but we don't yet have

d) actively **understanding**, **writing** and **reading**. The potential nous is only what we can learn, or what we have learned. Aristotle is leading up to the distinction between the potential and the active nous. It comes at the start of III-5, just below.

Aristotle leads up to the distinction between potential and active nous by raising and answering the question why the forms in material things do not **think themselves actively** in the things. We left this question at 429b26-29 where he asked whether nous can understand itself (be an object to itself), because if it can, and if nous is nothing but the forms that exist in the things, then doesn't it follow that the forms are nous understanding themselves in the things? Now he answers the question:

430a2

And it [nous] **is** itself an understand**able**,
like the understand**ables**.

καὶ αὐτὸς δὲ νοητὸς ἐστὶν ὡσπερ τὰ νοητα.

Yes, the potential nous is an understandable object, just as the learned forms are understandable, (not an understanding).

For Aristotle there are also immaterial things. He divides the question, and takes immaterial things up first. Their forms are understandings.

For, in the case of those **things which have no matter**, that which **understands** and that which is **understood** are the same;

(ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτὸ ἐστὶ τὸ νοοῦν καὶ τὸ νοούμενον·)

430a4-6

For in that way **contemplative** (θεωρητικῆ) **knowledge** and **that which is known are the same**.

(ἢ γὰρ ἐπιστήμη ἢ θεωρητικὴ καὶ τὸ οὕτως ἐπιστητὸν τὸ αὐτὸ ἐστὶν)

Things that exist without matter are active understanding. Things without matter (i.e., without potentiality) are always in act. But If our nous is identical with them, then our nous must **always be in act**. But we sometimes eat and sleep; we **don't always think**.

The reason why it does not always think (noein)
we must consider.

Aristotle will soon say that there is an active nous in us which is always in act. Only the learned nous is potential and does not always think, although we can think whenever we wish. The distinction between potential and active nous is needed, and coming. He postpones the question for a few lines.

SEE ENDNOTE 111 ON THINGS WITHOUT MATTER

Aristotle now turns to the things that do have matter. About these things we still have the problem from before: If nous **understands itself and is identical with these forms**, then it seemed to follow that the forms understand themselves in the things. But the potential nous

which we have been discussing (like what is written on a tablet) is not active, not like an ongoing writing or reading. **This nous is only the potentiality**, like something written that **can** be read. The potential nous is only understand**able**. Similarly, in the material things the forms are also only potential, only “understand**able**.”

430a6-9

In those things which have matter

each of the **understandables** is present **potentially**.

Hence, **they** will not have nous **in them**.

For nous is a potentiality for being such things without their matter,

ἄνευ γὰρ ἕλης δύναμις ὁ νοῦς τῶν τοιούτων

while the former [in the things] are **the understandable**.

ἐκεῖνω δὲ τὸ νοητὸν ὑπάρξει.

Both the potential nous and the forms of material things are only understand**ables** but the potential nous nevertheless differs from the understandable forms in the things. Neither is understanding but the potential nous is “**the potentiality for** being the forms without their matter.” Aristotle reaffirms that this nous is only a potentiality. But it can become just the form, i.e., just the organizing energeia which in things organizes the matter. **This** potentiality is not in the material things. So nous is not in them. The material things are **only** the understand**able**.

Neither the potential nous nor the material things are understanding activity. That comes in the next line.

SEE ENDNOTE 112 ON THE IDENTITY OF NOUS AND NOOUMENON; SELF-KNOWLEDINGS, NOT MERE KNOWNNS

III-5

OVERALL:

BEFORE YOU STOP AT EVERY LINE FOR MY COMMENTS, PLEASE READ THIS SHORT CHAPTER THROUGH FRESHLY WITHOUT INTERRUPTION:

deAn 430a.10

Ἐπεὶ δ' ὅσπερ ἐν ἀπάσῃ τῇ φύσει ἐστὶ
 τι τὸ μὲν ὕλη ἐκάστῳ γένηι τοῦτο δὲ δὴ πάντα δυνάμει ἐκεῖνατ,
 ἕτερον δὲ τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα,
 οἷον ἢ τέχνη πρὸς τὴν ὕλην πέπονθεν,
 ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς·
 καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν,
 ὡς ἕξις τις, οἷον τὸ φῶς·
 τρόπον γὰρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργεία χρώματα.
 καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγής, τῇ οὐσίᾳ ὧν ἐνέργεια·
 αἰεὶ γὰρ τιμώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἡ ἀρχὴ τῆς ὕλης.
 τὸ δ' αὐτό ἐστὶν ἢ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι·
 ἢ δὲ κατὰ δυνάμιν χρόνῳ προτέρα ἐν τῷ ἐνί,
 ὅλως δὲ οὐδὲ χρόνῳ, ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ.
 χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστί,
 καὶ τοῦτο μόνον ἀθάνατον καὶ αἰδίου
 οὐ μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθέες,
 ὁ δὲ παθητικὸς νοῦς φθαρτός· καὶ ἄνευ τούτου οὐθὲν νοεῖ.

Since **just as** in all of nature there is something which is **matter** to each kind of thing
 (and this is what is potentially all of them),

while on the other hand there is something else which is their cause

and **maker** by making them all,

these being related **as an art to its material**

so there must also be these differences **in the soul**.

And there is a nous which is such as to **become all things**,

and there is another which **makes them all**
 as a disposition, **like** light makes,
 for in a way light too makes potential colors into active colors.
 And this nous is separate, unaffected, and unmixed,
 it is **in substance activity** (energeia).
 For that which makes is always superior to that which is affected,
 and the principle [is always superior] to the matter.

Knowledge in act is the same as its object.

As potential it is prior in time in the individual

but in the whole [it is] not in time;

and there is not when it is understanding and when it is not understanding.

In separation it is just what it is, and **only this is immortal and eternal.**

But **we** do not remember because **this** is unaffected,

whereas the affectable passive nous is perishable, and without **this** understands nothing.

TEXT

EVEN IF YOU ARE EXPERIENCED IN THE *DE ANIMA*, PLEASE READ MY SHORT COMMENTARY THROUGH ONCE WITHOUT THE ENDNOTES, SO THAT THE CONTINUITY OF THE ARGUMENT CAN EMERGE. THEN YOU CAN GO BACK AND READ THE ENDNOTES. THE REFERENCES AND SUPPORTING CITATIONS ARE IN THE ENDNOTES.

It helps to know that Aristotle made no chapter-divisions. The few paragraphs of this brief “chapter” are really the culmination of III-4. So we should be engaged in the train of thought which continues here. In III-4 he first mentioned Anaxagoras’ universe-nous and then defined our potential nous as able to learn, **potentially** (capable of) **becoming** (the forms of) **all things**. It cannot have any actual form of its own, since it **can** receive **any** form. Therefore the potential nous is no actual thing at all **before it understands** (prin noein, 429a24). Then the potential nous **becomes** the learned. But to acquire the learned, must there not be (and have been) some **learning** and **understanding**? And in the material things the forms are only what

can be understood, not understanding. III-4 ends by saying that neither this (potential) nous nor the material things are understanding. The things and nous so far are only understand**ables**, not understanding. Can nature and nous exist just as understandably order**ed**? Must they not also be an order**ing**? Now Aristotle continues into our chapter.

430a10-12 Since, **just as** (ὅσπερ) **in all of nature** there is something which is **matter** to each kind of thing
(and this is what is potentially all of them),
while on the other hand there is something else which is their
cause and **maker** (ποιητικόν) by making (ποιεῖν) them all

As he does often, Aristotle uses “just as ...” which is followed (at 430a13 below) by “so ...”

We recall that the word “matter” in Aristotle does not mean stuff or body, but rather potentiality, the field of change, what can-become. Aristotle distinguishes between activity and its recipient.

430a12-13 -- these being related **as** an art **to** its material

Here the nous is understanding itself in its own activity. With “just as . . . , so . . .” the nous proportions (compares, analogizes) itself to art and to the matter of art. Like the material of an art, nous (understanding) **can take on** forms, but nous (understanding) also actively **makes** (enacts) all the forms. Earlier the art of building was his example. The materials change into a house but the builder doesn't change into something else (II-5, 417b9).

As activity (energeia) is to recipient, and **as** art is to its material, so

430a13-14 -- **so** there must also be these differences
in the soul.

This is a distinction **within** soul, so both **are** the soul. Now he states the two sides:

430a14-15 And there is a nous which is such as
 can become all things,
 and there is another which
 makes (ποιεῖν) them all

In III-4 we have already discussed the nous that **can become** (the learned forms of) **all** things, and therefore cannot have any form of its own. So, of course the activity (energeia) which **makes all** forms cannot have just one of the forms it makes, either. Neither is caught in a form.

SEE ENDNOTE 113, 430a14-15 ON “MAKES THEM ALL”

But nous does not invent the forms of things. Rather, nous makes

430a15-17 **as a disposition (hexis, ἕξις), like light makes;** for in a way
 light too makes potential colors into active (*energeia*) colors.

This is again a comparing, analogizing, proportioning: Aristotle says “**like** light makes... **As** light **is to** the colors, **so** nous **is to** what we understand.”

Light **makes** an active color **from** what is otherwise only a certain composition of elements, only the potentiality of that color. The actual color we see is not lying there, given. The actual colors we see are the light activity. We see light. But light does not enact just any arbitrary color. Light enacts **the thing's** color. Similarly, the forms in things don't just lie there as known, neither do we invent them. The thinking activity (energeia) **makes** (enacts) the understood objects **from** the understandable organizing in the sensible things.

Like light and color, the active and potential nous is not two things, rather one hexis

SEE ENDNOTE 114. ON HEXIS AND COMPARISON WITH LIGHT

430a17-18 And this nous itself is **separate** (χωριστός),
 unaffected (ἀπαθής), and **unmixed** (ἀμυγής),

καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγῆς,

Three defining characteristics: The active nous is **separate** from matter and the body. Again we must recall that for Aristotle “matter” does not mean stuff; rather matter is a field that can be affected and organized. In III-4 Aristotle said that nous has no matter. Therefore it is **unaffected** (*apathes*). It cannot have a certain mix ratio, like a body has. It is **unmixed** (ἀμιγῆς). If the nous were a mixture, it would have some single proportion or form, and could not acquire/enact the forms of all things. Unaffected and unmixed and separate were said about nous qua potential (429b4). But the active nous is

430a18 it **is in substance activity**(*energeia*).

τῇ οὐσίᾳ ὧν ἐνέργεια

Aristotle often uses the phrase “is in substance” to refer to what something is inherently. Nous **is** (in substance) just activity (*energeia*). Only about the nous of the universe does he also say that it **is** *energeia*.¹

In the case of nous what defines it is not a definition but the activity. But didn’t nous just above **define itself** as “separate, unaffected, and unmixed...”? Isn’t it both the defining and the defined? Why does he say that nous is the activity, rather than the definition?

430a19 **For** that which makes (*ποιεῖν*) is always superior to that which is affected,

Nous **is**, (in substance, essence) the activity (not the defined) **because** that which makes is superior to that which is made. Activity (*energeia*) is the producing, not one of its own products. What it is, is not a form or definition (which it would make). In its case its “definition” **is** its definition-enacting-activity.

SEE ENDNOTE 115. ON “IN SUBSTANCE ACTIVITY “

430a19 and the **principle** (ἀρχή) [is always superior] to the matter.

Activity (*energeia*) is the “principle,” the “source.” For Aristotle we arrive at the source last, but when we arrive at it, the source is more immediately understandable than what we

1 Meta: ἡ οὐσία ἐνέργεια. (XII, 1071b18) (See also 1072a30-35.)

III-5: τῇ οὐσίᾳ ὧν ἐνέργεια.

knew before. What we knew before can now be better understood, because it follows from the source. Here we take nous as the understanding activity which makes all definitions.

SEE ENDNOTE 116. ON “PRINCIPLE”

430a19-20

Knowledge in act(*energeia*) **is the same as** (αὐτὸ) **its object** (τῷ πράγματι, pragmati, its **thing**).

τὸ δ' αὐτὸ ἐστὶν ἢ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι.

As Aristotle does regularly, he began with potentiality (III-4), then moved to activity,(III-5 up to here), and now comes to the object. In having an object, the active nous is knowledge in act.

Our line states Aristotle's top principle: Knowledge-in-act is the same as (“auto”) its thing. The medieval scholars called this identity “reflexive.” See ENDNOTE 112

The activity and the thing are one because the activity “turns on itself” and **takes itself as its thing**. (We don't have this in English.) The activity is an existing self-knowing.

The identity between knowledge and “the known” was asserted earlier (III-4, 430a3), but that was about the **potential** nous which learns and becomes its objects, the universal concepts in the mind. But we have to learn these from sense perception in **active** thinking. III-4 ends by saying that the potential nous is **not** the thinking activity, and that there is no thinking activity actually happening in the things. In the things there is only an active organizing of matter, but its order is determined and thinkable by thinking activity.

For Aristotle the universe (including us and all things) is not only something observed and known (as moderns usually think of it). The universe is thinking and organizing activity knowing itself.

Knowledge in act happens in two ways:

a) Our unchanging nous activity enables us to think the form (the matter-organizing energeia) in a thing while it is actually present now, one thing at a time. This knowledge **in act** happens **not within the soul** but **between** the soul and the present thing. During knowledge-in-act the thing's form **is** also the thinking activity. The thinking activity is the same as its object.

b) Nous activity is its own object also when it does not enact the form of a particular thing. The active nous just by itself is also knowledge-in-act, identical with **all things together, in the**

whole. The end of III-7 and all of III-8 will tell specifically what Aristotle means by saying “In a way the soul is all things.”

SEE ENDNOTE 117. ON KNOWLEDGE IN ACT

So far the nous part of the soul has been neither identified with, nor distinguished from the nous of the universe. Aristotle will now distinguish our potential nous which develops in time. He distinguishes us from the universe by our **potentiality**:

The potential side of the nous soul develops in time. Each person learns and can then understand. But the active part of the nous soul is always complete and not in time.

430a20-21

As potential, it [nous] is prior in time **in the individual**, but **according to the whole** (holos) **not in time**

The usual translation of “holos” is “universally” and “in general,” but we recall that “holos” means “according to the whole.” The usual translation says that the **potential** nous as holos is not in time. I think “holos” and “it” apply to the **active** nous, as the next phrase shows, but no issue hinges just on this difference.

SEE ENDNOTE 118. ON HOLOS NOT IN TIME

Time applies to nous only insofar as nous is potential. What Aristotle means by “potential nous” in an individual consists of the **made**, the **learned** forms. They have to be acquired **before** we can use them in active thinking. But we can acquire them only because the active nous is always active. Here are Aristotle’s familiar two orders, what comes last in the order of generation and discovery is first in the order of nature and the whole. In life we come to understand bit by bit, but the active nous understands the whole all at once, as a whole. In the whole the nous is not in time.

430a22

and there is not **when** it is thinking (*noein, understanding*) and **when** it is not thinking (*noein*).

Since the active nous is not in time, of course there is not a time when it is active, and another time when it is not. He asked about this in III-4 and postponed the question. Now he answers. The nous without potentiality is always active. We soul-and-body people are not

always engaged in active understanding, but the part of the soul without potentiality is always actively self-understanding all things in the whole.

Some commentators say that this half of the sentence suddenly refers **only** to the nous of the universe, but Aristotle clearly applies all he says here to "**it**," i.e., this part of the soul.

430a22-23 **In separation** it is just what it is, and only this is immortal and eternal.

SEE ENDNOTE 119 ON THE SOUL NOT IN TIME

But since it has always been active, why do we not remember its activity from before birth, or when we wake up from sleeping?

430a23-25 But **we do not remember** because **this** is unaffected, whereas **the passive nous** (*nous pathetikos*, νοῦη παθητικός) **is perishable** and without **this** understands (*noein*) nothing.

Notice again the difference between "**we**," the composite soul-and-body people who remember, and "**this**" part of us. For Aristotle there is immortality only of this part of the soul.

The active one has nothing affectable, so it has no impressions of its former activity. Memory consists of impressions on the touch organ which he also calls the "common organ" (κοινῆς αἰσθηθεῶς, *M&R*, 450a13), where the five senses join. Memory-impressions are material and mortal. So we cannot remember before we had our memory organ, or while the memory organ is affected by sleep, even though this nous is always active. In separation it will not remember. The passive *nous* is perishable and cannot understand without the active one.

SEE ENDNOTE 120. ON TECHNICAL ISSUES IN THE LAST SENTENCE

SEE ENDNOTE 121-122. ON IS ACTIVE NOUS "ONLY" METAPHYSICAL?

III-6

OVERALL

This chapter is about the objects of understanding. According to the programme laid out at the start of II-4, Aristotle began his treatment of nous with the potentiality, has then moved to the activity, and will now discuss the objects.

The objects are first those of nature up to: 430b6; then the objects of mathematics until 430b24 where objects that are “indivisible not quantitatively but in form” are taken up, i.e., substances, the kind of objects distinguished in metaphysics (“But if there is anything . . . which has no opposite. . .”).

The chapter is about different kinds of thought-**unities**. First he discusses unity by combining, then indivisibility in the mathematical continuity, then the unity of a substance.

TEXT

430a26-27 The thinking (*noesis*) of what is **indivisible** (*ἀδιαίρετος*) involves no falsity.

The chapter will mention several kinds of indivisibles. The previous sentences (end of III-5) dealt with an indivisible, *nous* itself. Another kind of indivisibles are single grasps like “body,” water,” “nose,” line.” Indivisibles involve no combination.

430a27-28 Where there is both falsity and truth, there is already a **combination** (synthesis) **of thoughts** (*νοημάτων*) **like one existing thing**. (ὅσπερ ἐν ὄντων)

The question of truth and falsity arises only when thoughts are **combined**. When they are combined, they form a new unity.

430a28-31

as Empedocles said 'where in many cases

heads grew without necks

and were **then** joined together by Love,

-- so too these **previously separates** (*κεχωρισμένα*)

are combined,

e.g. the incommensur**able** and the diagonal;

SEE ENDNOTE 123 -126. ON NOEMATA AND KECHORISMENA

What Empedocles said is an example of falsity. Aristotle uses him to show what makes falsity possible. We don't believe that just heads alone and just bodies alone were "previously separate," and were only then combined with necks. As usual Aristotle's example is a microcosm of his point, and in several ways. Necks are of course inherently connectives (between heads and bodies). Empedocles has heads growing, and also bodies. Period. Then he combines them. But just heads are not possible; they could not live. **Falsity depends on separating** (the thoughts of) things that are organically one, like heads and necks and bodies. Then it becomes possible to combine the parts truly or falsely.

But this doesn't mean that separating things in thought is in itself wrong. It cannot be false to grasp "head" anymore than grasping "nose" or the number "two." Separating things only opens the **possibility** of falsehood, since we can falsely **assert** their separation, or recombine them falsely. Necks are in a way middle terms for correctly connecting heads to bodies.

Empedocles asserts. He has separated heads from bodies and asserts that the heads grew just as heads. Empedocles went wrong because he missed **the original unity**. For Aristotle, unity is prior. The function and form is a whole which determines the parts. Empedocles thought that first there were atoms and pieces and parts which were only then combined by a unifying force, "love."

Grasping the **original** unity of an animal is not combination; but rather the grasping of a form or kind. Aristotle will take that up later in the chapter.

His second example also doubly instances the point. The word "**in**commensurable" already means the **not-going-together** of two things. The not-together is correctly combined with the diagonal since it is incommensurable (with the sides).

430a31-430b1 and if the thinking is concerned with **what has been or will be**, then **time is also** thought of and **combined** in the thought.

Unlike Newton, Aristotle does not assume an already defined time. We saw this in III-2 (426b23-28) concerning sensing, and we see it again here in the case of thought. There are not already time-points or time-unities. Rather, the unity of a given time is **made by** the unifying act of the *nous*-activity of the soul when it combines two sensations or two thoughts.

430b1-3 For falsity always depends upon a combination;
for even if someone says that the white [thing] **is** not white,
he **combines** not-white.

If we deny about a white thing that it is white, we combine the white thing with “not-white.” Predication is a synthesis, a combination.

430b3-4 It is possible to say that these are all divisions too.

To assert not-white is to combine the thing with not-white, but also to separate it from white. So combination can also be considered division, and vice versa. Synthesis and division are two ways of talking about the same act. Any assertion can be taken as the denial of the opposite. If x is said to be true of y, this also divides y from not-x.

430b4-5 But at any rate, it is not only that Cleon is white that is false or true but also that **he was or will be**.

Cleon can change because he is a particular. Universals don't change from one time to another. Therefore universal assertions don't determine time. Perhaps Cleon-was-white but is-now-sun-burnt. Insofar as things change, i.e., insofar as time applies to them, what one affirms applies in the time or times during which it is true. So this unifying of time applies to any combination, anything that could be different. The combining necessarily also defines and determines a certain time.

Mathematics (which follows) does not have that kind of time-synthesis. What is true in mathematics is always true. But we will see below that there is another kind of time-uniting which mathematics does involve.

430b5-6 **And that which produces a unity is in each case the nous.**

The whole chapter is about kinds of indivisible, kinds of unities. The unity of combining thoughts and unifying a time is **made by the nous**. Kind of unity.

430b6-7 Since the indivisible (*ἀδιαίρετον*) is twofold,
either potentially or in act, (*energeia*),

“Potentially **not indivisible**” is difficult to grasp until we realize that it means “potentially divisible.” Aristotle means that something (a line) is divisible, so obviously it is **not indivisible**. Everyone knows that a line **can** be divided, i.e., it is **divisible**, which means **potentially** it is divisible. So obviously, since it **can** be divided, therefore **potentially** it is **not indivisible**. Once we untangle this, it isn’t difficult to understand.

The difficult point is what he will show next: Whereas a line is potentially not indivisible, it is **indivisible** in act. By “indivisible in act” he means that when we think or view something all at once, we **cannot** think of **that view** as divided. But of course we **can** go on and divide the same line in two halves, if we want. So it is potentially divisible, but in act just now it is not divisible.

430b7-11 nothing prevents one **thinking** (*noein*) the
indivisible (*ἀδιαίρετον*) when one **thinks of a length (for this is**
indivisible in act (*ἀδιαίρετον γὰρ ἐνεργεία*)
and that **in an indivisible time**; *ἐν χρόνῳ ἀδιαίρετῳ*
for the time is divisible or indivisible in a similar way to the length.
It is not possible to say what one was thinking (*noein*) of in **each**
half time;
for these do not exist, except potentially, if the whole is not

divided (μη διαίρεση).

Something can be **indivisible in act**, even though it is potentially divisible. Potentially divisible” means you can stop the act and divide the length at any point. But seeing the length as a whole is an indivisible act.

The mistake we are likely to make is to consider the length as divisible in the act of thinking the whole length, just because we could have stopped or could stop and could divide the length. But we are mistaken to consider the length as if it were divisible during the act. It is divisible only if we stop so that we can divide it.

So the length is **indivisible in act**. If the length in the act were also divisible, the act would consist of the divisible parts,. Then you could never see the length at all, because you would have to see across an infinite number of parts.

The time is also indivisible in act, since there is no time during which you **first** take in one part of the line **and then** another part. If no parts have been divided, you see and think the whole line, whether looking at it for a moment or staring at it for a minute. The part-**times** for each part of the line cannot be separated since there are no actual part-**lengths**. If the line is seen as a whole it is not actually divisible.

SEE ENDNOTE 127. ON ZENO’S PARADOX

Now, in contrast, think of a point marked in the middle of the line:

430b11-13

But if one thinks (*noein*) of each of the halves separately, then one divides the time also **together** (*hama*, ἅμα) with the half-lengths, then it is as if the halves were lengths themselves.

Each half-length is now a unity, and so is the time in which it is seen.

In the modern West we are accustomed to assume space and time as if they were an existing framework, and as if they consisted of space-time points. Aristotle thinks of this as only potential.

It is wrong to translate “hama” (together) as “simultaneously,” which would assume that time-units are already determined. Aristotle says the time-unities are determined by how the

lengths are taken. The time-unity is not determined by reference to pre-existing time-unities (like Newton's absolute space and time frame). So, in translating Aristotle, one cannot just unthinkingly assume the determined time-points which the notion of "simultaneity" assumes, especially not where Aristotle is just deriving those.

If you think the halves each alone, of course each is a length and is thought in act, thereby also determining its time.

430b13-14 But if one thinks of the whole as made up of both halves, then one does so in the time made up of both halves.

This is a third possibility. With the midpoint marked, the line is not one; it has two parts. Nevertheless, if you combine them and think of it as one line with a dot in the middle, the time will still cover both parts together, and not one after the other. The two halves would be seen as one whole. So it all depends on the activity in which you think it.

430b14-15 That which is **indivisible** not quantitatively but **in form**

(ἀδιαίρετον ἀλλὰ τῷ εἶδει)

one thinks (*noein*) of in an indivisible time

and with an **indivisible part of the soul**

(ἀδιαίρετῳ τῆς ψυχῆς).

A form like "dog" or "human" is grasped as a whole. It is **indivisible** in a more basic way than seeing a line as a whole. Half a line is again a line, but half a dog is not again a dog. So a form is indivisible **both** in act and in possibility. It is one whole not only in act. It is also **potentially** **indivisible**. To think of a dog, for example, the soul part that thinks it is indivisible not just in time or length but in form.

436b16-17 That which is thought (*noein*) and the time in which it is thought are **divided incidentally**

Of course one can think of a dog cut in half, or think of a dog for 30 or 15 seconds. But this is accidental division: One does not divide dog except "accidentally;" which means one

divides the quantitative place occupied by the dog, cutting the dog arbitrarily. A form (human or dog) is indivisible in form (in its “what it is,” its power for activities). This sentence makes no sense if it is displaced to an earlier spot, as it is in the Oxford ms. The sentence is about form, and form can be divided incidentally. There is no way to divide a line only incidentally. A line can always be divided. In contrast, a form is inherently a unity, **always** indivisible both in act and potentially, and divisible only incidentally if it occupies a place which can be divided.

SEE ENDNOTE 128. ON INDIVISIBLE SUBSTANCES

430b17-20

and not as those [mathematical lines and half lines] were, although they are indivisible as they were;

for there is **in these** [quantities] too something indivisible, although surely not separate (ἔνεστι γὰρ κἀν τούτοις τι ἀδιαίρετον, ἀλλ' ἴσως οὐ χωριστόν),

which makes the time and the length unities.

And this exists similarly in **everything which is continuous**, both time and length.

Earlier he said that the unity in each case comes from **the nous**. Just above he said that forms are grasped by something indivisible **in the soul**. Here he says that the quantitative objects do also have something indivisible **in them**, which **makes** them one, and makes anything continuous one.

SEE ENDNOTE 129. ON WHAT MAKES THE UNITY OF MATHEMATICALS?

So predication cannot be the primary kind of unity. It connects into one thought what one had previously separated. In contrast, grasping a form is not combination.

Now still another kind of indivisible:

436b20-21

The point and **every division**, and that which is **in this way indivisible**, are made known **as privation** is.

Aristotle understands a point as the divider of a line, and he explains division as a privation of continuity. Unity (continuity) is prior for Aristotle. When the line is divided into halves, we recognize the **dis**continuity as a privation of continuity (as we recognize a pothole in the road). He said this also about number in III-1: “We perceive what is at rest through absence of movement, number through negation of continuity . . .” (425a19).

SEE ENDNOTE 130. ON A POINT AS PRIVATION

430b21-24

And the same account (*logos*) applies to the other cases, e.g. how one cognizes (γνωρίζειν) **evil or black**; for one **cognizes** (γνωρίζειν) them in a way by their opposites. That which cognizes (γνωρίζον) **must be its object potentially**, and the latter **must be in it**.

In the chapters on sensation Aristotle said that the sense of sight is **potentially** all colors. We see red within a potential color range. We see white as not-black, and black as not-white. So also, the *nous* is potentially every thinkable object, and knows each as not being the potential opposite, since both are in the potential *nous*.

430b24-26

But if there is anything, some **one of the causes**, which **has no opposite**, then **this will cognize itself through itself**, **and is activity and separate** (*chôristos*).

εἰ δέ τιμι μηδὲν ἔστιν ἐναντίον [τῶν αἰτίων], **αὐτὸ ἑαυτὸ γινώσκει** καὶ ἐνέργειά ἐστι καὶ χωριστόν.

What cognizes, does so with its own potentiality to become that object or its opposite. But if the object has no opposite then it cannot be cognized by a potentiality. In that case the cognizing does not cognize by providing a continuum of opposites, since the object is not something on a continuum of opposites. Such an object is cognized through itself, not through a continuum of opposites.

Two kinds of objects are referred to here. Substances like tree or dog have no opposites. In their case the “what it is” consists of activities or the power for activities, i.e. a soul. The power for nutrizing, sensing, and understanding has no opposites. Death is not a possible opposite of nutrizing, sensing, and understanding, but living things exist in the material change-continuum and therefore have that potentiality. They are destructible.

But anything that is understandable entirely without potentiality, i.e., without matter would be fully separate (from matter). Such a thing **is** just cognizing **activity**, i.e., understands itself. Such things are a kind of nous. (For example, the unmoved movers. See Endnote 117, section 5).

Aristotle has gone from physical and mathematical to metaphysical objects.

Without any potentiality such a thing would be **only** an active understanding activity. Therefore, what grasps such activity is also nothing else than the activity.

SEE ENDNOTE 131. ON “KNOWS ITSELF”

Now, how do we grasp the “what it is” of a living substance, if it is not by providing a continuum of opposites or combining ingredients or parts together?

430b26-29 Every saying says something of something, as affirming also does, and is true or false. **But not all nous is such.**

Some commentators think that the word “nous” refers only to grasping single conceptions, but Aristotle makes clear here that “nous” functions broadly, since he says : “But not all nous is such.” “Nous” as unitary grasping is what he discusses here.

That of what a thing is
in respect of **'what it is for it to be what it was'**
is true, and does not say something of something.

Since it does not affirm anything about anything, it cannot be false.

The phrase “what it is for it to be what it was” is Aristotle’s usual way of referring to what the thing is, the what-it-is in a thing which a definition defines.

430b29-30

But **just as** the seeing of a special sense-object is true,
while the seeing whether the white thing is a man or not is
not always true,
so it is with those things which are without matter.

Aristotle draws an analogy to II-6 where he showed that we **can** be wrong about which thing is white, but cannot be wrong that some thing is making white on our eyes when we see white. So also the grasping of “cow” cannot be false. Once you have the concept you can think that a clump of bushes in the fog is a cow. But you could not first grasp “cow” from a clump of bushes.

Aristotle usually says that a grasp is neither true nor false, but here he says “always true.” He often says that the true and false are only combinations in the soul (VI-4, 1027b25), but at IX-10, 1051b24 he says that in the case of an indivisible thing, “true” can mean being in touch with it, error as not in touch. But there is a further problem: Aristotle says that we get our premises from grasps (for example, PoAn II-19), but does he mean that any premise gotten from a grasp will be true? I think he means to leave a gap between grasp and premise.

Byrne² points out with telling examples that the premise is not contained in Aristotle’s statements of grasps. Byrne shows that we can draw the premise from the grasp but this requires having or making the two concepts in the premise. One needs two to make a premise (an affirmation), for example that cows “are animals” or “are valuable.” I think the “truth” of the grasp does not assure the truth of the premise.

Clearly, Aristotle holds that a substance as a oneness **exists**, unlike the merely mental attributes which we separate and re-combine. A nous-grasp is what he calls “knowledge in act” which happens only with a presently sensed thing in one activity. Knowledge in act is “identical with its thing.” He says this again in his next sentence. (He did not make the chapter divisions.)

2 Byrne, P., *Analysis and Science in Aristotle*, SUNY Press, 1997.

III-7

OVERALL:

In this chapter Aristotle puts sensing and thinking together in one continuity including much of what has been built so far. He shows the continuation of sensing into action, and how thinking functions in the continuation to action. He explains the combinations among the five senses and among thoughts in relation to good and bad, pursuit and avoidance in both practice and theory.

The previous chapter (III-6) was about the thought-objects. He said that single grasps were certain; only combinations can be true or false. We have not yet seen **how** sensing and thinking combine the single images and thoughts. This chapter shows it.

In reading the chapter it helps to know that the proportions in this chapter (“as white is to sweet, so ...”) apply both among the five senses and between sense and thought.

The chapter also shows why thinking requires images. This is because the five kinds of sense-motion continue to a single active “mean” between them all. This “sensuous mean” combines single sensations by giving them proportional relations. In proportioning the senses, this sense-mean also functions to proportion and combine the single thoughts. Since we get our thoughts from sensations, and since their combination is “marked out” there, Aristotle holds that we have to use the sense-images in our thinking.

The sensuous mean continues into desire and action. In action the human practical thinking can play a role. Chapters III-9-11 will then take up locomotion and action more exactly. The chapter provides the continuity across all the previous sections, and also the continuity from them to the next section of the *De Anima*.

I remind you that some translators use the English “sensing,” others use “perceiving” but they mean the same thing and translate the same word (aisthesis).

THIS MAY WELL BE THE MOST DIFFICULT CHAPTER OF THE DE ANIMA. ARISTOTLE PUTS HIS TREATMENTS OF SENSATION AND THOUGHT TOGETHER IN A CONTINUITY THAT REACHES TO ASSERTIONS AND TO ACTION. BECAUSE THIS CHAPTER INTEGRATES SO MUCH, IT WILL BE HELPFUL TO GO THROUGH IT FIRST JUST TO SEE WHAT IS BEING DONE IN EACH SECTION, BEFORE TRYING TO UNDERSTAND EACH LINE EXACTLY.

Up to 431a7

Aristotle didn't make chapter divisions. From the end of III-6 (things that have no contraries). He goes on to our first sentence here, about knowledge in act.

He begins from things that are actual, i.e., complete, since they are the source of everything else. Motion is always incomplete. Sensing is an activity, but it requires motion to activate it. Now he can begin with sensing (413a10) and work up from there. The chapter is going to be about both activity and the sense-**motions** which continue from five organs to one joint "mean" and then on into action.

From 431a8-19

How do single sensations and thoughts continue on into assertions? Assertions-or-denials are to thought, what pursuit-or-avoidance are to sense. Sensing determines pleasure or pain and thus desire, but when sensing is **fully** in act, sensing continues into locomotion: pursuit or avoidance. Aristotle will further discuss the continuation into action at the end of the chapter.

The necessary role of the joint senses was established in III-1 and III-2, but is now explained as a single terminus where the five senses join, a single "mean" which provides all the many proportionings. It has these many modes of "being," or of being definable.

The **motions** that activate the five organs continue from the organs to one place. (He calls it the last organ, eschaton. Later we can see that it is the touch organ, the contact organ. He also calls it "the common," τῆ κοινῆ.) Their togetherness constitutes a single mean between the five, which also functions to combine images and single thoughts.

431a20-431b2

Aristotle next shows this single sense-mean at work:

Earlier in III-2 we discussed how the joint sense-ratio discriminates between the different senses (white and sweet). **Now it does this in combining-thinking as well.**

Also new here is a **four**-term proportion: White/sweet = black/bitter. The further point made here is that **as** (white is to sweet, so black is to bitter), **so** is the **thinking** of each to the **thinking** of the others.

431b2 - 431b10

Now the continuation into practical thinking is taken up. He shows in an example how

practical action arises first by a continuity from a sensation to a common sensible (seeing a motion) and to an incidental object (the enemy). An animal would get this far. Then he shows the role of practical thinking and planning which starts from images.

431b10 - end

Continuing from practical thinking to theory, Aristotle moves to mathematical and then to metaphysical thinking. Whether the last-mentioned kind is fully possible for us, he leaves for later (for the *Metaphysics*).

TEXT

431a1-7

Knowledge in act (*energeia*) is identical with its thing (pragma). But potential knowledge is prior in time in the individual, but universally (*holôs*) not in time,
(Τὸ δ' αὐτό ἐστὶν ἢ κατ' ἐνέργειαν ἐπιστήμη τῷ πράγματι.)

These same two sentences appeared in III-5 (430a19-20). As he did there, Aristotle gets to them here **from** discussing nous. At the end of the previous chapter he was saying that there is no error when we don't connect two things, when nous grasps a single essence (the what it is) of a thing that has no opposite (a substance) and knows itself. As he did there, he goes on to say that for individuals sensing and potential knowledge comes first, but in the universe the actual things come first, because

for, all things that **come to be** are derived from that which is in actuality (*entelecheia*)

ἔστι γὰρ ἐξ ἐντελεχείᾳ ὄντος πάντα τὰ γιγνόμενα.

He begins here himself with the actually existing things. Only those can activate

potentialities, like the senses..

It is clear that the object of perception makes that which **can** perceive actively so (*energeia*) instead of potentially so;

for it is not affected or altered.

Hence this is different in kind from movement;

for movement is an activity (*energeia*) of the incomplete,

while **activity** (*energeia*) **proper is different, the activity of the complete**. ἡ γὰρ κίνησις τοῦ ἀτελοῦς ἐνέργεια, ἡ δ' ἀπλῶς ἐνέργεια ἑτέρα, ἡ τοῦ τετελεσμένου.

The activity of sensing is always complete (completely sensing) whenever it is active at all. In contrast, he calls motion “incomplete activity.” While it is happening, motion is only on the way to some result, and **incomplete**; then when it arrives and is complete, it stops altogether and is not happening at all. An activity may include and organize many motions. In the chapter both the activity and the motions of sensing will be important. We saw earlier that the motion from the sensed thing to the organ activates, but does not change the organ or the sensing capacity.

SEE ENDNOTE 42 IN II-4 ON THE MEANING OF “ACTIVITY”

SEE ENDNOTE 132. ON THE MOVEMENT FROM THE TOP DOWN AND BACK UP AGAIN.

In the chapter up to now Aristotle has discussed sensing and thinking separately. Now he will discuss them together throughout the rest of this chapter.

413a8-10

Perceiving, then, **is like** a mere appearing, or a thought (*noein*), **[but] when** something is pleasant or painful, pursuing or avoiding **is like assertion or denial**

This is a proportion between sense-continuation and thought-continuation. Merely perceiving is like a mere understanding (*noein*), but moving to obtain or avoid what one perceives is like asserting or denying. It is a four-way comparison. In the case of both sense

and thought the mere appearance or single thought-object is contrasted with continuation into action (pursuing or avoiding) which is like when thinking continues into predication (affirming or denying).

SEE ENDNOTE 133 ON FOUR-WAY COMPARISON

I stopped us in midst of a sentence which connects all of the following: sensing, a pleasant/painful thing, desiring, and locomotion, as well as thought-objects and assertion. Aristotle's sentence continues: Look above, then continue

431a10-11

and pleasuring and paining is

to be **active** (*energeia*) with the sensing broad mean

towards the good or bad as such.

καὶ ἔστι τὸ ἡδεσθαι καὶ λυπεῖσθαι τὸ ἐνεργεῖν τῇ αἰσθητικῇ μεσότητι
πρὸς τὸ ἀγαθὸν ἢ κακόν,

Note “the sensing broad mean” (mesoteti). A few lines down (431a16-20) he will explain and derive this mean.

Desire to get closer or to avoid always involves sensing something as good or bad. In later chapters Aristotle shows how thinking can distinguish the real from the apparent good (III-10, 433a26-29). So far there has been no distinction.

In this passage “pleasuring” and “paining” are verbs. What is the activity of pleasuring and paining? Pleasuring or paining **is** the **sensing mean in act** (toward the good or bad **as such**, i.e. toward a thing **insofar as** it is good, not its other attributes). How are good and bad **sensed**? We must recall from III-2 that sensing is pleasant when what is sensed is within **the range of** the mean. What is translated as “broad mean” (μεσότητι) is the range within which the proportion of the sense holds and is not violated. A sensation is painful when it exceeds that range and thereby hurts or destroys the sense-proportion. This “mean” is the source of the famous ethical “golden mean.”

SEE ENDNOTE 134. ON THE MEAN (μεσότης, μεταξύ, μέσον)

431a12-14 Avoidance and desire **in act** (*energeia*)
are the same thing,
 and **that which can** desire (*orektikon*) and **that which can** avoid
 [the part of the soul which can do these] **are not different**
 either from each other or from **that which can** perceive
 though **their being** (*einai*) is different.

For “avoidance” read “avoidance or pursuit.” For “desire” read “desire to obtain or desire to get rid of.”

The same soul-part which senses, and pleasures/pains, and desires, is also what moves (avoids or pursues). It is one thing but capable of many definitions. As so often with Aristotle, **one concrete thing can serve different functions** and therefore it can have different definitions. I use the example of a small organization where the secretary may also be the treasurer. The same person is differently defined. One person can “wear many hats,” we say. All these functions are part of the same sensing **activity**. (Below, at 431a16 we are going to see that these functions involve the **continuation of the sense-motions,**)

Already in II-2 and II-3 Aristotle said that if a living thing can sense, it will also have pleasure and pain, and these include desire. What is new here is that when the sensing activity is **fully** in act, it **is** also locomotion. He hasn’t yet explained this; he is just asserting it so far.

SEE ENDNOTE 135. ON PLEASURE

The same sense-proportion does sensing, pleasuring/paining, desiring/hating, and moving to avoid/pursue. He says this about sense, but how is the thinking side related to moving into action?

431a14-16 To **the thinking soul**, (διανοητικῆ)
images serve as sense-presentations (αἰσθήματα)
 and **when it affirms** or denies (φήσει ἢ ἀποφήσει)

good or bad [of something], **it avoids or pursues.**

Above he said that affirming and denying in the theoretical sciences is **like** pursuing or avoiding in practical action. In **practical thinking** (about good and bad things) the soul continues into action, pursuit or avoidance.

The **thinking** (dianoia) that affirms or denies is of course combining two thoughts. This is not the **understanding** (*nous*) which first grasps the single concepts. The thinking he calls "**dianoia**" employs nous to combine thoughts into affirmations or denials.

We have consistently seen that Aristotle keeps thinking very close to sensing. Here he says that thinking follows the proportioning and evaluating of the sense-mean (although it has its own understandings).

Now what and where is this single sense-mean? And, why is thinking in images? It is image because for thinking images provide the function of sense perceptions. But how do they do that? **Images come from the organ at which the senses join,** (the touch organ which he also calls the "common organ," the "koine"). This organ is also the sense-mean. The five senses are not only activities; they involve sense-motions, and these move to a single location:

431a16-20

Hence the soul never thinks (*noein*) without an image,
just as the air makes the pupil such and such, and this in turn
something else, and the organ of hearing likewise,
the last in the series is one thing, (τὸ δὲ ἕσχατον ἓν,) and **a single**
mean (καὶ μίᾳ μεσότητι,) although what it is for it to be such is plural.

Notice here, Aristotle is talking of **the motions** that affect the sense organs. We have to know that for Aristotle images are continuations from the motions of the sense-impressions retained and returning from the common sense organ (SEE ENDNOTE 97).

Aristotle says that we cannot think without images **because** the mean acts to proportion and combine the five senses in the last organ where they persist and can return as an image. **The sensuous mean which discriminates and combines sensations also combines the thoughts that are latent in the images.**

Aristotle has not told us before that each of the five sense-motions from the activating thing continues on from the eyes and ears to join at a single location which acts as a mean to provide the proportional relations among them. Then he says that this mean has many functions (many modes of being), **both** for all five senses **and** for thought, as he will now show. Although thinking is a different activity than sensing, he will now show that thinking involves (a different but analogous function of) the same concrete mean.

According to modern science it is quite true that all sensations travel to one center. Aristotle has derived **the function of** the brain, i.e., the necessary existence of something that **functions** as one center for the senses and also the thinking. But as usual, Aristotle discusses the motions and the material parts in a separate treatise (*De Sensu*). In the *De Anima* until now, Aristotle has held off telling us that the five sense-motions travel to a single material spot, the same sensitive mean he discussed in II-11 as the touch organ, now referred to as the “last” organ. Still he doesn’t say that it is the touch organ, rather just “the last” (*eschaton*), “the single mean” (and later “the common” *koine*). But we know it has to be one of the five organs, since he showed in III-1 that there is no special sense-**organ** for the unity of the five. At the end of the book he will explain why it has to be the contact organ.

Aristotle tells us the bare fact that the senses are motions and move to one spot but he does not discuss internal motions in the *De Anima*. (I discuss the reason for this in ENDNOTE 98 in III-3.)

In III-2 he said that “what discriminates [between two others] must be one,” and “as it says, so it **thinks** and senses.” In III-4 and in endnotes there I have commented on the close relation of thinking (*dianoia*) to sensing. We will now see this close relation in detail.

To explain the close relation, he recalls that he spoke of the mean between the senses already in III-2:

431a20-22

What it is by which one determines the difference between **sweet and hot** has been stated already, but we must say also the following. It is one thing, but it is so as a boundary is,

Up to this point in the sentence Aristotle repeats what he already said in III-2 (426b29-427a10). Between the senses, the single mean functions like a boundary; it is one, and also the start of the other to each. But now something further:

(Why sweet and **hot**? In III-2 it was sweet and white. Hot is sensed by the touch-organ;

perhaps he needs it here since it is the *eschaton* or last thing he just mentioned in the traveling sentence, 431a16-20.)

As he often does, Aristotle states the conclusion first, and then the argument for it. This time he will show that sweet and hot are **the positive poles**, and related to each other (sweet/hot) **just as** their contrary poles are to each other (bitter/cold) in a proportion we did not have before.

431a22-27 and these [sweet and hot], being one by analogy and number,
are (each) to each
as those [bitter and cold] are to each other;
for what difference does it make to ask how one discriminates
(*krinein*) those things which are **not of the same kind** or those
which are **opposites, like white and black?**
Now let it be the case that as A, white, is to B, black, so C is to D
as those are to each other; so that it holds *alternando* too.

And, this is important because we could not sense **one thing** if the common sense could not **proportion** across the senses, as he says next:

431a27-431b2 Now if CD were to **belong to one thing**,
then it would be the case, as
for AB too, that they would be [sensed as] **one and the same**,
although what it is for them to be such is not the same -
and similarly for those others. And **the same proportion** (*logos*)
would apply if A were sweet and B white.
That which can think (τὸ νοητικὸν) therefore . . .

Aristotle is pairing sense and thought, and linking the positive poles (white and sweet) as against black and bitter.

The four-way proportion is new here. (III-2 did not have it yet.) It links **the positive poles**: White is to sweet, as black is to bitter. The positive pole of one sense corresponds to

the positive pole of each of the others, as their privations correspond to each other.

Aristotle is filling in a crucial gap between the different senses, which has remained open up to now. Each sense has its opposites, but is there a proportion such that **one definite side of each sense corresponds to one side of each of the others**, so that hot corresponds to white and sweet, and not black and bitter? Let us ask: Could hot correspond sometimes just as well to black, or to bitter? If the latter, then there is no firm unity of the senses. What Aristotle shows here is a compressed version of his extensive argument in *De Sensu*, (442a11-29 and 447b10 - 448a19), to show that we can know which ones are the positive poles of the senses, compared to the privations. I don't think Aristotle has equally good reasons for choosing the positive poles, but he has good reason for assuming that this is not arbitrary or variable.

In modern science also the hot is the active pole rather than cold. And, we also say that white light has all colors, black none. We **correlate** the energy of heat with the amount of light rather than the amount of darkness. These are related in a determined way in the things. If it were arbitrary whether it is the dark that correlates with heat, and the light with cold, or the reverse, then we could not constellate a knowledge **of things**. So we can appreciate the importance of this proportion. For Aristotle, seeing black is similar to seeing dark, i.e., seeing that we do not see. The privation pole is similar to the absence of sensing. This proportioning of the corresponding opposites is required in how we sense **and think** one thing. This is why the link of proportioning the opposites across must be stated **here**.

But as he does throughout this chapter, Aristotle has also paired sense and thought here. As the sensing of white and black is of one thing, so also the thinking of them. And, as the thinking follows the sensing, so also can it follow the connection among its own images:

431b2-5

That which can think (τὸ νοητικὸν), **therefore,**
thinks (grasps, νοεῖ) **the forms (εἶδη) in images,**
 and **just as** in those [the white, sweet, etc] what is to be pursued
 and avoided **is defined for it,**
 so, **apart from sense-perception,** when it is concerned with
 images, **it is moved,**

τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ,
 καὶ ὡς ἐν ἐκείνοις **ὁρίζεται** αὐτῷ τὸ διωκτὸν καὶ φευκτὸν, καὶ ἐκτὸς τῆς
 αἰσθήσεως, ὅταν ἐπὶ τῶν φαντασμάτων ἦ, κινεῖται·

SEE ENDNOTE 136 ON NOETIKON AND DIANOETIKON

The phrase “is defined for it” applies to pursuit (and affirmation) or avoidance (and denial). Aristotle is not pointing to a mere similarity between thought and sense; he is saying that **the same mean defines** also for thinking what to pursue in action and what to assert. Therefore he says “**so**, apart from sense-perception ... “ (i.e., with images in theoretical thought.) In theory it is also the sense-mean which proportions and evaluates the images and moves the can-think, just as with sensations. In sense and also in images the same mean defines what to pursue or avoid.

On the other hand, nous as such grasps the good, whereas sense just the apparent good. Nous grasps the ultimate ends (including the singular end of an action now (See *N. Ethics*, 1143b1-10).

Just as the single sense-mean we just discussed can mark something as good or bad for “it,” namely for the thinking soul (τὸ νοητικὸν), **so** can images for thinking, and both continue into desire and motion.

He calls the unity of white and black or white and sweet the “common sense,” which also enables us to sense motions. **One thing is sensed, also sensed as moving, and also thought-recognized:**

431b5-6

e.g.

perceiving that the beacon is on fire, and when by the common sensing (τῆ κοινῆ, the common) you **see** it moving,

you **recognize** (γνωρίζει) that it belongs to the enemy,

He gives us an image. You are a soldier in a troop at night. By one of the five senses you see the yellow color, and by the common sense you also **see** it moving, and by incidental sensing you see fire. So far, the higher animals can do all this. A deer seeing the fire moving, would have the image of a predator, and of a safe place, and it would run there. But for humans not only are there images left over from sense, but also you recognize (*gnorizein*, cognize, know) the form of fire and that it belongs to the enemy. And practical thought can do more:

431b6-8

but sometimes **you calculate on the basis of images or**

only from **thoughts** (φαντάσμασιν ἢ νοήμασιν,) in the soul,
as if seeing,
 and **plan** (λογίζεται καὶ βουλεύεται) **what is going to happen**
 in relation to present affairs.

Aristotle's word "plan" or "deliberate" (*bouleuetai*) always involves rational thought.

Here he shows that thinking can also originate something of its own: **By beginning in images** you picture the victory you want to bring about, and you plan steps from the victory backwards to the present situation. For example, from the image of winning the battle you think of your troops strengths, then you think of (and imagine) a situation in which these strengths would count most. To bring that situation about, you have to find the intermediate steps from the desired and imagined situation back to **the present condition**. You look at the situation just now and how it would have to shape up so that your guys would be in that favorable situation. You've got a good plan if you can think all the way to a first step that is possible from here, and leads in sequence to what you want to happen. This is what Aristotle means when he says that practical thinking works in reverse; it works from the imagined desired object back toward present affairs.

Note the instancing: The plan for a defeated enemy is **an image for us** of the role of practical nous which we are trying to understand right now, as well as an image **for the men out there in the dark**.

SEE ENDNOTE 137. ON THOUGHT AND IMAGES AND SITUATIONS

Aristotle just took us **from** "perceiving ..." **to** "but sometimes you calculate on the basis of images..." Now he says:

431b8-10

And when it [perception] says,
as there, that something is pleasant or painful,
so here [thinking from images] one avoids or pursues,
 and **so in action universally** (ὅλως ἐν πράξει)

He has just moved from the example and all of the above **to a universal statement** about action (*praxeî*). This “holôs” is the first step back up the ladder.

431b10-12 That which is **apart from action too**, the true and the false, are in **the same genus** as the good and bad; but they differ, the first being absolute (*ἀπλῶς*, without condition), the second relative to someone.

With this distinction between the practical and the theoretical, Aristotle turns back now to the thinking with which we began the chapter. “Apart from action,” “the true and the false” includes the science of nature: physics, and within it the *De Anima*. Next as usual comes mathematics, then metaphysics.

Aristotle is still pursuing continuation as he has been doing throughout the chapter. He is saying that the thinking continues from the sense-combining into deliberated action, and that theoretical thinking is this same thought-continuation separated from its reference to a particular situation and person.

Aristotle now continues on to separate even further, to generate the objects of mathematics.

431b12-15 **Those things which are spoken of as in abstraction** one thinks of just as, if one thought snub not *qua* snub, but separately *qua* **hollow in act** (*energeia*) one would think (*noein*) of it **separately from the flesh** in which the hollow exists.

As in III-4 he employs “snub” and “hollow” to stand for all concepts that involve matter (as the word “snub” always involves nose). By abstracting further, we get geometric patterns like concave, and we get numbers. We recall from III-4 that these abstractions each have their own kind of matter, for example the imaginary continuum in which a figure appears. We think them as separate forms, but abstractions are never forms alone:

431b15-17 Similarly, one thinks (*noein*) of mathematical entities which are not

separate, as separate, when one thinks (*noein*) of them.

This is everywhere what he says about mathematics.

Then comes metaphysics, in something like our familiar sentence, but now with an interesting addition:

431b17-19

Universally (holos) the nous in activity (*energeia*) **is** the things understood. (ὅλωσ δὲ ὁ νοῦς ἐστίν, ὁ κατ' ἐνέργειαν, τὰ πράγματα [now]).

Whether or not it is possible for it to think (*noein*) what is separate from spatial magnitude when it is itself not so separate must be considered later.

ἄρα δ' ἐνδέχεται τῶν κεχωρισμένων τι νοεῖν ὄντα αὐτὸν μὴ κεχωρισμένον
μεγέθους, ἢ οὔ, σκεπτόν ὕστερον.

Here we are back where the chapter began, with complete activity. We can read the *holos* as having been arrived at from all the previous instances of nous activity. In moving to a “holos” (universal), this statement is an instance of the type of thinking which it is about, the grasping of a principle, grasping itself, doing what the statement says.

But this raises a question: Is this thinking of ours, here about identity between thing and understanding, is **this** nous activity a purely separate object? Nous in us is not now separate from our soul-and-body persons. In asking the question we are of course already thinking of “something separate,” but just thinking isn’t identically grasping it, as we see since he leaves the question open.

He assumes that nous in separation will identically grasp what exists in separation, but can we now grasp what exists separately? He postpones the answer for its proper place, the *Metaphysics* (XII- 8, 1073b36-38 and XII-9, 1075a6-11, cited in endnote 117, section 6).

III-8

OVERALL

Aristotle calls the chapter a “summary.” It deals with the argument he repeated throughout the sensation chapters that the sense **is** potentially all sensibles, or **is** actually the one that just now activates it. Also covered is the analogous argument about nous. In our chapter he says explicitly that we learn the thought-forms only from sense. The summary ends where III-7 had just arrived, with the reason why thought requires images. However, there is something new at each point.

TEXT

431b20-22

Now, summing up what has been said about the soul, let us say again that

the soul is in a way all existing things

τὰ ὄντα πῶς ἐστὶν πάντα;

for existing things are **either** sensibles or **understandables**

(ἢ γὰρ αἰσθητὰ τὰ ὄντα ἢ νοητά)

As Aristotle quoted Anaxagoras saying, the soul **is** all things -- in a way. Everything that **is** consists of two kinds: perceptibles (αἰσθητὰ) and understandables (νοητά). We notice that noeta are existing things. Notice that for Aristotle understandables are existing things.

431b22-24

and knowledge is in a way **the knowables** (τὰ ἐπιστητά)

and sensation the sensibles.

How this is so we must inquire.

Aristotle shifts from “understandables” to “knowables” because the soul is **potentially all**

the knowables, but the soul is (enacts) the noeton of a thing only in act. To say **in what way** the soul is all things, he needs his usual distinction between potential and actual:

431b24-26 Knowledge and perception are divided to correspond to their things (πράγμα),
 the **potential** to the **potential**,
 the **actual** (*entelecheia*) to the **actual** (*entelecheia*).

But where does he tell about the actual things and actual nous? Aristotle didn't make the chapter divisions. If we read continuously from the last two sentences of III-7, we see that he has just told us that **active** understanding is identical with its things, including the enmattered substances whose forms nous enacts, as well as what exist apart from megethos. The "actual things" are those we grasp when they are now actually present. As Aristotle said in II-5, the fullest kind of actual knower "is the one who is already **contemplating** (*theorein*), the **knower** who is **actually** (*entelecheia*) and in the controlling (κυρίως) sense knowing **this particular A**. (ὁ δ' ἤδη θεωρῶν, ἐντελεχία ὧν καὶ κυρίως ἐπιστάμενος τόδε τὸ Α. (417a28-29).

Actual knowledge happens not just in the soul but between the soul and the thing. But in what respect can he say that in actual knowing the soul **is** the thing it knows? It doesn't become the letter "A." He will get to that shortly.

But what are "potential objects?" They are all the many things that might come by, but are not here now. Sense and thought are potentially all objects, as he always says.

431b26-28 **In the soul** the **powers** which **can** perceive and **can** know are **potentially** these things,
 the one the object of knowledge,
 the other the object of perception.

The soul is a power, i.e., a potentiality. The soul parts are **potentialities** for living, perceiving and knowing. As Aristotle insisted throughout (especially at the start of II-5, 417a6), "the sense is only potential." It is potentially all possible sense objects. For example, a thermometer has the potentiality to "be" **all** the temperatures marked on it, but of course only potentially, not all of them at once, actually. Aristotle has argued throughout, that each organ's

proportion **can** take on **every** sense-object-form, potentially. So the sense is (potentially) every sensible thing that **can** come by. The sensing soul-part is potentially **all** sensible objects, actually none of them, as he has said so often.

Similarly, the potential nous which **can** understand is purely potential. Before learning it is no actual thing at all, he said in III-4. He argued that it cannot have any nature of its own precisely because it has to know (be) potentially all things. So of course, in potential sensing and knowing the soul is all **potential** things.

431b28-432a1

These must be either the things themselves or their forms (εἰδη).

Not the things themselves;

for it is not the stone which is **in the soul**, but its form.

This applies to both potential and actual sensing and knowing. If actual knowing is of this letter “A,” obviously the soul does not become a letter. In actual sensing and actual knowing the soul and this Alpha have the same one sensible or understandable form. Being identical with being actively known is the only way enmattered forms exist just as forms.

SEE ENDNOTE 138. ON POTENTIAL AND ACTUAL THOUGHT AND THINGS

432a1-2

Hence the soul is **as** the hand is; **for**

the hand is a tool of tools, and

the nous is a form of forms

(ὥστε ἡ ψυχὴ ὥσπερ ἡ χεὶρ ἐστίν· καὶ γὰρ ἡ χεὶρ ὄργανόν ἐστιν ὀργάνων,

The hand is, of course, our bodily tool for the making and use of tools. Clearly, the tangible tools the hand makes and wields are not in the flesh and bones of the hand, just as the concrete stone is not in the nous.

In his book *Parts of Animals* Aristotle explains in detail why he calls the hand a “tool of tools:” “Now the hand would appear to be not one single tool, but many, as it were a **tool of tools**.”

(ἔστι γὰρ ὥσπερ εἰ ὄργανον πρὸ ὀργάνων. Points An 687a.22) All other animals cannot change their weapon ... man can choose what weapon to have. Take the hand. This is as good as a talon, or a claw, or a

horn, or again a spear or a sword, or any other weapon or tool. **it can be all of these because it can seize and hold them all.** (687a19-b7).

To use this characteristic of the hand in order to understand nous, Aristotle uses a proportion and an image. We cannot visualize or touch nous, but we can have a sense-image of a hand.

The hand always exists **actually**, as active nous exists actually. When the hand acts on matter to make and wield a tool, then the tool is also actual.

Aristotle now lets this aspect of nous and hand define a new term which he does not use anywhere else, so far as I know. The hand is “a tool of tools.” The nous is a “form of forms.” The hand and the soul are unique in this respect. Let us see further what this means.

Aristotle seems to say that the nous is a form, but on closer inspection we find that it is not, or at least not the usual kind. Nous **is a maker of forms**. A “form of forms” is like a tool of tools, like a living body’s organ that **makes tools**. Nous is certainly not itself the sort of form that it makes. The hand is not a made tool (it would have to be made by yet another hand).

In Greek “tool” and “organ” are the same word. So we see: **”In the phrase “tool of tools” the first use of the word stands for a living organ, the second for an artificially made tool.** In II-4 he says “all natural bodies are tools (organs) of the soul’s,” (both as food and as material from which to make tools). In English we would say that **the hand is the organ of tools**.

If we look back to II-1 where he begins with the distinction between bodies that are natural and those which are not, we have no problem classifying the hand. Obviously it is a natural body and a living organ, like the example of the eye in II-1, not an artificial tool like the axe. There Aristotle calls a plant’s leaf and pericarp “tools” (“organs”). These are living tools, what we call “organs” in English. The nature and definition of living organs is their capacity to initiate their functioning, unlike the axe which cuts only if moved by a hand. In the case of the hand, its own activity and function is to make and wield tools. Analogously, as a form of forms, nous makes forms.

When actually using a tool, the hand does not wave the tool in the air, but uses the tool in contact with some existing thing. Similarly, knowledge-in-act connects with some actually present thing.

Aristotle fashions the new concept, “tool of tools,” from the proportion: the understood forms are to nous as the made tools are to the hand. “Aha,” we say. So we must guard against

reading this as if nous were itself one more form or kind, which nous “makes.” The hand does not make itself. The nous does not make itself -- Aristotle thinks that it comes into the soul from the outer cosmos (*Generation of Animals*, II-3, 736b28), just as the daylight comes from there. **A form of forms is not a universal. rather it makes universals.** Universals do not exist except as concepts in the soul. Of course you have a universal concept of “hand,” but this does not make tools. And nous is not even defined by a universal concept, because as he said in III-5, the essence of nous is not the concept but its activity (of concept-making). The activity of enacting universals is not a universal.

432a2-3 and sense is a form of the objects of perception.

We must not thoughtlessly say that sense obtains sense-forms, and that nous obtains thought-forms, as if these forms were there waiting, and come magically into the soul. We have to recall that these forms are modes of the soul’s own activity of interacting with things. The sense-form **is** some proportion of (and in) the sense-activity. It senses its own proportioning-of the motion coming to it from the thing. Similarly, the form of a known thing is a separate form only as the form-of an activity of understanding.

432a3-5 **Since** no thing (*pragma*) seems (*dokei*) to exist (ἔστι) separately (κεχωρισμένον) apart (παρὰ) from extended things (μεγέθη) which are objects of perception,
the objects of thought (νοητά) are in the forms of the objects of perception,

He has already set unextended things aside at the end of III-7. Note “seems,” the word “*dokei*” with which we are familiar. (Aristotle holds that nous can exist in separation from extended things, as he said in III-5.)

SEE ENDNOTE 139. ON EXTENDED THINGS

432a5-8 both those that are spoken of as in abstraction and those which are dispositions and affections of objects of perception.

As Aristotle says in many other places, he means that mathematical objects and attributes of extended things do not exist separately. We learn them all only because they are implicit in the sense-forms.

432a8 And **for this reason** unless one perceived things one would not learn or understand anything, and

For Aristotle, thinking remains always so very close to sensing. It is only **in** the sensations themselves, that we find the understandables. This includes the first ordinary universals concepts of kinds, for example of plants and animals, colors and sizes, and growth and decay, as well as the theoretical causal essences such as nutrizing (without food and water it dies). We do not reach the understandable directly, but only through the patterns, relations, and proportions of the sensations. For Aristotle we can find the understandables only **in** the forms of sensible things.

Aristotle continues the sentence which began with “And for this reason ...”

432a8-10 when one contemplates (*theôrein*), the contemplating must be together (ἅμα) with an image;
for images are like sense-presentations (αἰσθήματα)
except that they are without matter.

Imagery for Aristotle is not just visual and auditory; it is the remains of the joint experience of the senses. Unlike sense-experience, imagery can happen without the form-and-matter things. Therefore thinking is independent of what happens to be present just then.

Thinking requires either sensations or images because according to Aristotle we find the understandables only in the sensible forms. Therefore we need sensible forms as the continuing source for the thought, and also for another reason: The sensed mean leads to assertions and denials, combinations that are true or false. As he said in III-7, “To the thinking soul, (διανοητικῆ ψυχῆ) images serve as sense-presentations (αἰσθήματα), and when it affirms (φήσῃ) or denies (ἀποφήσῃ) good or bad [of something], it avoids or pursues .Hence the soul never thinks (*noein*, νοεῖν) without an image.”

(431a14)

SEE ENDNOTE 140. ON SENSE-FORMS, IMAGES, AND THOUGHT FORMS

432a10-12

But imagination is different from assertion and denial;
for truth and falsity involve **a combined thought-presentation**
(συμπλοκή νοητιμύτων).

Aristotle compresses two arguments here: A single image is not an assertion, but combined images are not assertions either. Truth or falsity depend on **thought**-combinations, for example asserting that “Cleon is white” (III-6, 430b4). Just the images need not lead to an assertion. They do mark out the possible assertions and combinations that could follow, but thought can combine images in new ways (as III-7 showed, and as the next few chapters will further show).

432a11-14

But what distinguishes the first thought-presentations (πρῶτα νοήματα) from image-presentations?
Surely neither these nor any other thought-presentations will **be** image-presentations,
but they will not exist without image-presentations.

Even single understandings happens **in** sense-presentations or in images. But of course the thought forms are not the imaged forms. **The thought-presentations are not pictures.**

You picture water, but you cannot picture that water is an element. You cannot see or smell Aristotle’s thought that the same element is in the brown smelly stuff in the puddle and in the blue cold stuff in the river, as well as in every solid body. Aristotle insists that you cannot think water as an element without some images, but of course the thought is not the images.

Take as an example the image he gave us, above: the soul is as the hand is; for the hand is a tool of tools, and the nous is a form of forms “(432a1). We do not **think** of the soul as **shaped like** the image of the hand, only that the hand **is related to** the tools it makes **as** nous is **related to** the thought-forms it makes. This relation is now **one thought** which has no familiar name. But you

do have an image of a hand (not only visual but jointly tactile and auditory).

Since images do not involve the material things, thought has a great deal of independence from sense, but for Aristotle it never quite loses its connection to sense.

III-9

OVERALL

It helps to know from the start, that in this chapter Aristotle does **not** tell us what causes locomotion. Rather, he shows that no single soul-part (soul function) is always sufficient to cause motion **alone**. In the next chapter we will see that locomotion is caused when certain soul-parts are in a certain relationship.

Humans are of course animals, so that animal locomotion includes human locomotion. Humans are not necessarily moved by **desire alone**, since reasoning can stop them. And **reasoning alone** without desire is also not enough to move us.

As usual when taking up a new function, Aristotle shows that it is not accounted for by those he has already considered. i.e., not nutriting, not sense as such, not thinking alone, and not always even desire + reason, since a more immediate desire can stop it.

TEXT

432a15-22

The soul of animals has been defined by reference to two potentialities,
 that capable of **discrimination** (*krinein*) which is the work of thought (*dianoia*) and sense-perception,
 and secondly that for producing **motion in respect of place**.
 Let so much suffice about perception, and the nous; we must now inquire what it is in the soul which produces movement,

Aristotle had the same two at the start of the thinking section at III-3 (locomotion and *krinein* (the latter including both sense and thought). This time he puts motion second since it gets its objects from sense and thought, and since he will now go on to discuss it.

whether it is a part of the soul, separate like sizable things,

or [only] in definition (*logos*, λόγος)

or whether it is the whole soul,

and if it is one part, whether it is a special part in addition to those usually spoken of and those which we have mentioned,

or is one of these.

Is locomotion due to a separate part of the soul?

432a22-23

A problem arises straightaway,

in what way we should speak of parts of the soul

and how many there are.

Aristotle now poses a problem not just about movement, but about the unity of the soul and in what way it has separate parts and in what way not. Here we can expect to learn something more about how Aristotle considers the soul to have parts.

432a24-27

For in one way there seem to be **an unlimited number**

and **not only those which some authors mention** in distinguishing them -- the parts capable of **reasoning** (λογιστικόν),

passion (θυμικόν), and **wanting** (ἐπιθυμητικόν),

or (according to others) the **rational** (*logon*) and **irrational** (*alogon*) parts;

for **in virtue of the distinguishing characteristics by which they distinguish** these parts,

Plato had this three-way and this two-way distinction. Aristotle incorporates them, but not as the way to distinguish the soul-part that causes movement.

As we saw in II-2 and II-3, the soul is one insofar as it is the overall organization of the

body. Living bodies are organized by either the nutritive or the perceptual function.

In defining anything, we can always distinguish any number of “parts,” Aristotle says, because we can choose any characteristic according to which to divide those who have it from those who have not, and there are always many characteristics. That doesn’t mean that all distinctions are equally basic or equally helpful. Aristotle will show why some distinctions are preferable to others.

432a27-31

there will clearly be other parts too

with a greater disparity between them than these, those which we have already discussed, the nutritive, which belongs both to plants and to all animals, and the perceptive, which could not easily be set down **as either irrational or rational.**

He defends his division of parts of the soul so far: They mark much greater differences, than those proposed by others. They do not fit under “rational” **or** “irrational.” Especially, perception is not itself rational yet it performs functions vital to rationality.

432a31-432b3

There is again the part capable of **imagination** (φανταστικόν), which is **different from all** of them in being (*einai*, εἶναι) although with which of them it is identical or non-identical presents a great problem **if** we are to posit **separate** parts of the soul. (κεχωρισμένα μέρη)

The capacity for imagination arises from the common **sense** organ (See start of *M&R*) but it is not the same as sensing. Also, imagination is necessary for **thinking**. So, “if” we consider the soul-parts as if they were really **separate**, we could account neither for imagination nor for thinking. Therefore Aristotle needs the different soul parts not to be the kind of “parts” that would be just separate from each other.

432b3-4

In addition to these there is the part capable of **desire**, which is held (*dokei*) to be **different** from all **in definition** (*logos*) **and potentiality**.

To define desire you shouldn't say the same thing as if you were defining sensation. Their their object and function is different. In definition desire is a different thing than sense, which is why both desire and sense appeared in the list of soul-powers in II-3. As **activity**, neither is possible without the other, which is why desire was not on the list in II-2.

SEE ENDNOTE 141. ON "DIFFERENT IN BEING AND IN POTENTIALITY"

But if the parts of the soul were separate (*kechorismena moria*), we would have to put desire **both** in the rational and in the irrational part, thus showing that this is not a useful division.

432b4-7

And it would be absurd surely to split this up;
for **in the part that can reason** (λογιστικόν) there will be wishing (βούλησις),
and in **the irrational part** wanting (ἐπιθυμία) and passion (θυμός);
so if the soul is tripartite **there will be desire in each**.

Aristotle converts Plato's three soul-parts into three **kinds** of **one** function: desire: We had them in II-3 at 14b33 and he will reiterate them in III-10 at 33a26. (They are very variously rendered in English.)

1. boulesis: the calculative (*logistikon*, λογιστικόν) or deliberative desire
2. epithumia: the sort of desire that can go counter calculation (one's better judgement)
3. thumos: spirit or ardor

For Aristotle the three kinds differ in their relation to calculative deliberation. The first

kind involves it, the second not, and the third even less. (θυμὸς δ' ἔτι ἥττον· ἥκιστα γὰρ τὰ διὰ θυμὸν κατὰ προαίρεσιν εἶναι δοκεῖ.. ἀλλὰ μὴν οὐδὲ βούλησίς γε, καίπερ σύνεγγυς φαινόμενον·. EN 1111b.19-20). (ἀνδρεῖοι γὰρ εἶναι δοκοῦσι καὶ οἱ διὰ θυμὸν ὥσπερ τὰ θηρία ἐπὶ τοῖς τρώσαντας φερόμενα. EN 1116b.24).

We learn here that “parts of the soul” are not simply separate, but are distinguished in several more precise ways. (Recall their material unity in II-3. Aristotle usually has many kinds of unity and difference.) We have seen that the soul-parts interact to perform certain functions, and this will now be shown also in the case of locomotion.

432b7-13 To come then to the point with which our discussion (*logos*) is now concerned,

what is it that moves the animal in respect of place?

For, movement in respect of growth and decay, which all have, is held (*dokei*) to be produced by what all have, the faculties of generation and nutrition.

We must inquire also later concerning breathing in and out, and sleep and waking; for these too present great difficulty.

432b13-15 But as for movement in respect of place, we must inquire what it is that produces in the animal the movement involved in **traveling** (*πορευτικήν*).

That, then, it is not the nutritive potentiality is clear;

Aristotle makes clear that by “**locomotion**” (change according to place) he means “traveling,” not how stationary animals (e.g., sponges) move in one spot, only drawing back when poked.

He is differentiating the new function from the others we have already discussed, as he usually does first. He divides away the nutritive, since even plants have it and they don’t travel.

432b15-17 for this movement is always for the sake of something

and **involves imagination and desire,**

for nothing which is not **desiring or avoiding something** moves

unless as the result of force.

((The Greek says: "Without a desire-object (*oregomenon*, ὀρεγόμενον) or avoidance-object (*pheugon*, φεῦγον)."

Now he has told us something about locomotion: **Locomotion cannot happen without imagination and desire.** II-2 says: "if sensation, then imagination and desire." 413b23. II-3 says: "if sensation-ko then orektiko" (14b4).

Aristotle continues the argument that locomotion is not due to the nutrition function.

432b17-19 Besides, plants would then be capable of movement, and they would have some part instrumental for this kind of movement.

Aristotle often uses the word "movement" (*kinēsis*) to include all kinds of change; therefore he calls **locomotion** "motion in respect of place." Here he distinguishes locomotion from growth (movement in quantity).

432b19-26 Similarly it is not the faculty of sense-perception either;
for there are many animals which have sense-perception but are stationary and unmoving throughout.

Aristotle means that they do not travel

If, then, nature does nothing without reason and never fails in anything that is necessary, except in creatures which are maimed or imperfect,

while the animals of this kinds are perfect and

not maimed (an indication being that **they can reproduce themselves and have a maturity and a decline**)

then it follows too that they would have parts instrumental for traveling.

Aristotle is thinking of, e. g., sponges and some shellfish, stationary animals with at least one sense. They do draw back if poked, but they don't locomote, i.e., go somewhere.

SEE ENDNOTE 142. ON STATIONARY ANIMALS

To prove that locomotion is not caused by the sensation power, Aristotle argues that there would not be animals in nature with the locomotive soul-part but without legs or any bodily part to do it. This is an argument from the final cause:

He then shows that animals that don't move are not maimed since they reproduce in this form and have their own completeness and life-cycle. This is an argument from their form and function.

432b26-29 Nor is it what can reason (*logistikon*, λογιστικόν) and what is called the nous that produces the movement; for **what can contemplate** (θεωρητικόν), **thinks** (*noein*) **no object of practice**, and says nothing about what is to be avoided or pursued, while the movement always belongs to one who is avoiding or pursuing something.

He has added another characteristic:

It is not the theoretical nous which causes locomotion, since locomotion always involves avoiding or pursuing an object of practical action (*πρακτόν*). This is not a universal, but always something particular. For Aristotle even inanimate motion is defined by the end point toward which it is directed. Animals (including humans) move only if they are after something, or escaping something. **Locomotion always has an object.** As usual with Aristotle, it is the object which defines the motion. Motion is caused by the object of desire, not by an object of theory.

432b29-433a1

But even when it contemplates (*theôrein*) something of the kind, **it does not straight away command avoidance or pursuit**, e.g., it often thinks (*dianoieisthai*) of something fearful or pleasant, but it does not command fear, although the heart is moved, or, if the object is pleasant, some other part.

Even practical nous does not alone cause motion. Aristotle argues that often lack the fear which would make us move away from something harmful, although we “know better,” and that we often fail to move toward something which we think of as good. Our practical thinking moves only the heart (for him the heart has the function of the brain) but not the feet. So practical thought is not enough to make motion. What is missing?

433b1-6

Again, even if the nous enjoins us and thought (*dianoia*) tells us to avoid or pursue something, we are not moved, but we act in accordance with our wants (*ἐπιθυμία*), as in the case of incontinence.

And universally (*holôs, ὅλως*) we see that the doctor is not always doctoring, this implying that there is **something else which is responsible** (*κυπίως*, controlling) **for action in accordance with knowledge, and not knowledge itself.**

Nous and dianoia (the connective thinking through nous) are not enough to cause locomotion. Not only do we often fail to move when we think it would be best to do so, but we may even be moved toward the opposite by the kind of desire Aristotle calls “epithumia” (precisely the kind that can move against what we think best).

The doctor has medical knowledge **all the time**, but spends part of the day and night doing something else. Obviously there has to be the desire to move into action.

But is desire always enough to move us?

433a6-8

Nor does desire control (κυπίως) locomotion,

for continent people, even when they desire and want things, do

not do those things for which they have the desire,
but they follow nous.

Desire alone is not enough to cause locomotion. We see this in the case of people who can control themselves.

Throughout, here, the model-case is the most complex case, the human one. If it is covered, the other animals are covered too, since they are simpler. Aristotle's arguments run up the ladder: The mover is not nutrition, not sense, not imagination, not desire, and in animals that have thought, thought is not enough. Even thought + desire may not always be enough. (Movement depends on the functional relation between them, which is taken up in the next chapter.)

III-10

OVERALL

As always, an activity is caused by a soul-power and is defined by its object. The chapter moves to define a single source of locomotion, not two. Practical *nous* is not another power that causes movement; rather it provides one kind of object. There is only one power, the desire-power, but Aristotle defines different kinds of desire depending upon its various objects.

TEXT

433a9

It is at any rate clear that these two produce movement,
either desire or nous,

In the previous chapter desire and practical *nous* both seemed to be sources of locomotion, although neither could always cause it alone. We need to consider these two.

433a9-13

if we set down the imagination as a kind of thought (*noein*); for many follow their imaginations against their knowledge, and in the other animals thought (*νόησις*) and reasoning do not exist, although imagination does.

Both of these, therefore, can produce movement in respect of place, nous and desire.

Just above in III-9 Aristotle said that imagination was difficult to place among the divisions of soul-parts. Of course imagination is not *nous*, but in Aristotle's use of the word, "*noein*" can include imagination. Both what we think and what we imagine **may** be an object that moves us. Aristotle includes both under "*noein*" for the moment.

SEE ENDNOTE 143. ON NOEIN AND IMAGINATION

Aristotle makes clear that he means not nous in general but

433a14-15 But [this is] **nous which** reasons for the sake of something (οενεκα) and **is practical;** and it differs from the contemplative (θεωρητικόν) nous in respect of the end.

The *nous* here is the practical *nous* which has ends that can be achieved by action, (which often involves locomotion).

433a15-17 Every desire too is for the sake of something; for **the aim** of desire is **the starting-point** (ἀρχή) for the **practical nous,** and its final step is the starting-point (ἀρχή) for action.

Desire and practical nous both aim at something desirable. With practical *nous* one **starts from** the sort of aim that exists as yet only in thought, and one thinks backwards through steps that would lead it to. For example, to obtain the objective would require this and this, and to get this we would have to be there and there, which would mean going over there **from here,** and we could go if we had boots, and we can make boots! So we arrive at the first step of action which we now begin **from here.**

“That for the sake of which” is the final cause, the object which is to be attained. So practical *nous* and desire have the same final cause, i.e. the object, but the practical *nous* **begins with** desire's object (which is thus its starting point or “first principle” or premise).

433a17-20 Hence it is reasonable that **these two** seem to be the sources of movement, desire and practical thought (διάνοια πρακτική)

For the **object of desire produces movement,** and,
because of this, thought (*dianoia*) produces movement,

because the object of desire is its starting-point (ἀρχή).

Only what is desired moves practical *nous* to find a way to it, from the present. Aristotle denies that something merely thought about could make us move toward it. Practical *nous* always begins with something that is desired as its starting premise or principle.

433a20-21 And when the imagination produces movement it does **not** do so **without** desire.

Similarly, the imagination does not cause us to move unless what we imagine is also desired.

433a21 Thus there is one thing which produces movement, the faculty of desire.

He has now said explicitly that none of the objects of thought or imagination produce locomotion unless they are also objects-of desire.

433a21-22 For if there were two things which produced movement, *nous* and desire, they would do so in virtue of some common form;

They would be two of one form or kind, the kind that produces movement. But

433a22-25 but as things are, the *nous* does not appear to produce movement without desire
(for wishing (*boulnsis*, βούλησις) is **a kind of desire**,
and when one is moved in accordance with calculation (λογισμόν), one is moved in accordance with one's wish too),

It's not calculation that makes something desirable, rather "boulesis" (sometimes translated "wish" or "deliberation"), which Aristotle defines as the **kind of desire** that relates itself to practical *nous*. Aristotle incorporates and redefines Plato's three opposing parts of the soul so that they are now formulated as three of a kind, three kinds of desire.

433a25-26 and desire produces movement even contrary to reasoning;
for wanting (*epithumia*, ἐπιθυμία) is a kind of desire.

Aristotle defines *epithumia* as the kind of desire that does not include calculation and therefore may or may not accord with practical *nous* (and some people can control it, some not).

433a26-29 **Nous then is always right;**
but desire and imagination are both right and not right.
Hence it is always the object of desire which produces movement,
but this is **either the good or the apparent good;**

Nous is a grasp of something the order of the universe. this order is the real good (See Metaphysics VIII, cited in comments on III-5). *Epithumia* (the kind of desire that lacks deliberation) has an object that is **only** from imagination. It **appears** good, (and may be truly good, or not).

SEE ENDNOTE 144. ON NOUS IS ALWAYS RIGHT

433a29-30 not every good but **the practicable good.**
And **what can also be otherwise,** is practicable.

Aristotle has now defined the practical kind of good, something changeable by action, something that can be otherwise than it is. One does not take action to change what is not changeable. No one gets out of the chair to try to change the value of the square root of two, or to pull down a star.

433a31-433b4

That therefore **it is a potentiality** of the soul of this kind, that which is called desire (*orexis*. ὄρεξις), that produces movement is clear.

But for those who divide the soul into **parts**, if they divide

and separate (χωρίζειν) **them according to potentialities**, it transpires that there are **many parts**,

the nutriter, perceiver, thinker (νοητικόν), **deliberative wisher** (βουλευτικόν) and furthermore the desirer (ὀρεκτικόν),

for these differ more from each other than do the capacity for **wanting and passion** (ἐπιθυμητικόν καὶ θυμικόν).

By Aristotle's new divisions we don't have to consider the deliberative kind of desire (βουλευτικόν) as a different soul-part than the kind without deliberation. He defends this by saying that other soul-parts are far more different, but **even those are not separately-existing parts**. Aristotle defends his concept of complexly interrelated soul-parts. The sensing-power is required for thinking. One kind of desire includes calculative deliberation, so we had better not cut these two completely apart. These interactions would be impossible if we simply separate these soul-parts.

Note "divide and separate." Aristotle is arguing against considering **powers** (potentialities, soul-parts) as "**separated** parts." If the last two were separate like two stones, then the others must be plain separate too, since they differ much more. He has shown that they are not plain separate; for animals nutrition relies on touch for its objects, and nous operates on sensation and in images.

SEE ENDNOTE 145. ON DESIRE IS ONLY A POTENTIALITY

433b5-6

But **desires** arise which are **opposed to each other**, and this happens when reason (*logos*) and wants (ἐπιθυμία) are opposed

Aristotle defines *epithumia* as the kind of desire which can conflict with practical reason while *boulesis* is the kind of desire that includes weighing by practical reason.

433b6-10 and it takes place in **creatures which have a perception of time** (for the nous bids us resist on account of the future, while our want (ἐπιθυμία) bids us act on account of what is just now, for what is just now pleasant seems both absolutely pleasant and absolutely good because we do not see the future).

Only humans have *logos* and practical *nous*, so the conflict between boulesis and epithumia occurs only in humans. But other living things have a sense of time, which can lead them to chose a greater good later in time.

433b10-11 Hence that which produces movement will be one in kind, the faculty of desire **qua faculty of desire** (ὀρεκτικόν ἢ ὀρεκτικόν), **and prior to everything the object of desire**

Every activity is defined by its object which gives or shares the form of the activity (See the start of II-4). A thing causes movement only if it first become an object of desire, which depends on this soul-potentiality. It is what determines a thing as its object. So, whether deliberately desired (βούλησις) or only wanted (ἐπιτηυμία), something is an object of desire by virtue of the desire-potentiality, i.e., “the orektikon qua orektikon,” and only then and therefore does it become the cause and defining aim of a locomotion.

The object is prior,

433b11-12 for this produces movement **without being moved**, by being thought (*noein*) of or imagined

What we desire need not itself move to make us get out of the chair to try to obtain it. The attractive person across the room need not even notice that you have gotten up and are moving. The “object of desire” is Aristotle’s model-instance for how the final cause of the Universe can cause motions without moving (*Metaphysics*, 1072a20-b4)..

SEE ENDNOTE ON KNOWLEDGE IN ACT IN III-5.

433b12-13 though numerically there will be more than one thing which produces movement.

We have seen that the objects of desire can be of several kinds, and also more than one at a time. We are often in conflict between them.

433b13-14 **There are three:**

- 1) one **that which produces** movement,
- 2) second **the instrument whereby** ($\hat{\omega}$) it does so, and
- 3) third again **that which is moved**, and

1) The first (as we saw above) is the object and the soul-power together. So:

433b14-17 and **that which produces movement (1) is twofold**,

- 1a) that which is **unmoved** and
- 1b) that which produces movement **and is moved**.
- 1a) That which is unmoved is the practical good, and
- 1b) that which produces movement **and is moved** is the faculty of desire

The object is unmoved, but moves the desire-power, whereas the power is moved and moves the animal.

The soul is **the middle term between object and locomotion**. it is between. The desire-power is moved and also moving the animal.

433b17-18 for that which is moved is moved in so far as it is affected by desire, and **desire in act (*energeia*) is a sort of motion**.

The desire power is not an unmoved mover. It sets the body in motion by being a sort of movement.

SEE ENDNOTE 146. ON DESIRE IN ACT IS AN INTERNAL MOTION.

433b18-21

while that which is moved is the animal;

and **the instrument by which** (ὧ δὲ κινεῖ ὀργάνω) desire produces movement is then something bodily. Hence it must be investigated among the functions common to body and soul.

The bodily tool by which an animal moves is the ball joint. It belongs in a different book, but Aristotle tells a little of it here:

433b21-27

To speak in summary fashion . . . in **the hinge-joint** . . . the convex and the concave are . . . the latter is at rest but the former moves . . . For everything is moved by pushing and pulling . . . one point must remain fixed and the movement must begin from this.

Locomotion starts where two parts meet, one fixed, the other pushing off from it (the ball joint).

433b27-28

Universally (ὅλως) therefore, as we have said, in so far as the animal is capable of desire, so far is it capable of moving itself;

In III-11 Aristotle will explain in what way this includes even stationary animals.

433b29-30

And all **imagination** is **either** calculative **or** perceptual.

(φαντασία δὲ πᾶσα ἢ λογιστικὴ ἢ αἰσθητική.)

In the latter, then, the other animals share also.

Aristotle is defining two kinds of imagination, by applying the distinction between the deliberative kind of desire and the other two kinds. Only humans have calculative (*logistikē*) imagination, which combines images that are used in reasoning to and from the future.

III-11

OVERALL

III-11 is about the different kinds of objects of desire and motion which different kinds of animals have. Aristotle uses the distinction he just made between two kinds of imagination, calculative or sensitive (ἡ λογιστικὴ ἢ αἰσθητικὴ). Objects of desire and motion always involve one of these two kinds of imagination. A desired condition is one which does not obtain; it has to be imagined.

He begins with the sensuous kind of imagination. He is first concerned with animals that have only one sense, the sense of touch. Such animals do not have **loco**motion. They remain in place but do move. Aristotle says they have “indefinite” motion and imagination, whereas those with more than one sense have “definite” imagination and motion. We will see what this means.

Then he turns to the kind of imagination and desire-object which is formed with the participation of the practical nous. When a choice must be made, a single combined image of the alternatives is created by practical nous, so that they can be weighed.

He arrives at just three possible conflicts between alternative objects of desire.

TEXT

433b31-434a4

We must consider also what it is that produces movement in the imperfect animals which have **perception by touch only**, whether they can have **imagination and wants** (*epithumia*) or not. For they evidently have pain and pleasure, and if these **they must have wants** also. **But how could they have imagination?**

In chapter III-9 (432b20-25) he used these animals to show that sensation isn't what causes locomotion since these have sensation but don't travel around. They have only one sense, touch. He listed them at II-2, 13b4. They are important to Aristotle because they show that the essential defining characteristic of animals is sensing, not locomotion. What Aristotle means by getting the "essence" right is vital to be able to demonstrate and derive all other traits in order, so that they all fit together.

SEE ENDNOTE 147 ON KINDS OF ANIMALS

But these animals pose a puzzle. They **must** have imagination and desire, since these powers always come along with sensation. But these animals have no common sense, since they have only touch. Motion is a **common** sensible. Aristotle said at the end of III-1 that an animal needs more than one sense, if it is to sense motion as distinct from white. He said that if color were all it could sense, it couldn't distinguish the thing's color from its motion. Animals with only touch cannot distinguish hot and cold from motion, and cannot not discriminate their own motion as distinct from tangible qualities.

But these animals do not travel; they only move in place. They can bend away from things that touch them painfully. What kind of imagined object of desire do they have?

434a4-7

Or is it that **just as** they are **moved indeterminately**

(κινεῖται ἀορίστως)

so also they have these things (wants and imagination), but indeterminately?

Imagination concerned with perception, as we have said, is found (also) in the other animals,

These animals do not locomote (i.e., **travel**), and do not imagine a **defined** object obtainable along a path (from somewhere to somewhere). They do **move**, but their motions are not defined motions. For Aristotle a motion is defined by its limits, where it begins and where it stops. So he says that these animals move **indeterminately** (ἀορίστως). (*horistos* is boundary, delimited, determined. Compare *De Sensu* 39b3.)

Aristotle is proportioning: **As** they sense motion, i.e., not distinctly as such, **so** also do

they themselves move, not in accord with a delimited motion from here to there, but only in place.

Sensing at a distance is not necessary to imagine having more of a pleasant sensation, or less of a painful one. And, if there is no separate image of a desired object, the animal does not need a sense of time to recognize when an imagined object is not present. So the sensitive kind of imagination and desire can exist in all animals, including those who sense only by contact. (On the sense for time, see ENDNOTES 97 and 98.)

This was a case of an object given by the sensation-kind of imagination.

434a7-10 but that (kind of imagination) concerned with deliberation (*bouleutike*, βουλευτική) (is had only) in those which are capable of reasoning (λογιστικός)
 (for the **deliberation** whether to do (πράττειν) this or that is already a task for **reasoning** and there must be **one measure**, (καὶ ἀνάγκη ἐνὶ μετρεῖν) for one pursues what is superior; hence one has the ability **to make one image out of many**.)

Aristotle has now turned to the second kind, reasoned (λογιστική) imagination. Since all thought involves thoughts-in-images, making a reasoned choice between alternatives involves combining two images into one, holding them together in one comparison.

Do we really understand Aristotle here? Of course, if you consider buying a certain dress in one store, then see another possible choice in another store, you have to bring the image of the one to the other, to compare them. But in a situation, if one course of action will bring you into conflict with certain people while the other course of action will deprive you of a certain thing, how will these be combined into one image? Aristotle said in III-8 that “neither ... thought-presentations will **be** images, but they will not exist without images.” So he does not assume that we weigh only what we imagine, rather we weigh what we think in the images. And, it is true that imagining only the consequences of one choice and then the other, separately will not result in a weighed decision. We need to think them together.

The work of *logismos* involves a single **thought-mean** that combines the images, or

rather, the thoughts-in-images. This thought-in-image proportioning is a further function of the sensing-ratio (as he said in III-7, 31a12, 31a16).

Only humans can **reason** or **calculate**, but of course the higher animals can choose one food over another, or be trained to forgo immediate desires for later reward or punishment. It is the *logos* that is purely human.

Therefore:

434a10-11 The reason why animals are held (*dokei*) not to have opinion (*δόξα*) is because **they do not have opinions derived from inference** (*sullogismos*, συλλογισμός)

Note the “*logismos*” in the word “*sullogismos*.” In III-3 (28a21-23) Aristotle seemed to say that animals do not have opinion **because** it involves *logos*. Now he modifies this, denying again that animals have **the sort of opinion that is derived from a syllogism**. (He discusses this practical kind of syllogism at the end of the chapter.) Obviously animals do not **derive** practical conclusions from universals. Here we see that he meant that they do have “opinion” but not based on syllogism. In II-2 (413b27) he has already indicated that sensing involves opining, differing only in definiton.

Also in M&R Aristotle says that not only humans but also the higher animals have **opinion**. διὸ καὶ ἑτέροις τισὶν ὑπάρχει τῶν ζώων, καὶ οὐ μόνον ἀνθρώποις καὶ τοῖς ἔχουσι **δόξαν** ἢ φρόνησιν. (450a.16) (Also in Meta I-1 Aristotle says that bees have phronesis.)

So opinion need not involve syllogism,

434a11 but this involves that.

Syllogism does involve opinion.

Rational deliberation is the cause or middle term that distinguishes his two kinds of desire and imagination.

434a11-12 **Hence desire does not imply the deliberative faculty** (βουλευτικόν).

Objects of desire can be without the *bouleutikon* because the sensation-kind of imagination can present an object without it.

434a12-13 Sometimes it [the *bouleutikon*] overcomes and moves a wish ;
sometimes the latter does this to the former,
like a sphere,

In the *Metaphysics* Aristotle says that among the heavenly spheres (paths of the planets) the higher move the lower.

434a13-15 one desire overcoming the other, when incontinence occurs.,
But in accord with nature the higher is always predominant and
effective;
so that **three motions are thereby involved.**

For Aristotle “nature” includes humans and their deliberations as well as the good. Therefore, if the result goes in accord with the nature of things, the deliberated choice will overcome the other.

There are only three possibilities, higher overcomes lower, lower overcomes higher, or one of two lower ones overcomes the other. Why can there not be a conflict between two deliberated desires? We saw just above, 434a10, that the *nous* combines two such thoughts-in-images in the act of choosing the better, so there is always only one **deliberated** object of desire.

By three “motions” Aristotle may mean the resulting locomotions which would be defined by aiming at one of the three kinds of desire-objects. But more probably he means the internal motions by which desire is moved (433b17-18), since he compares this immediately to:

434a16 But the faculty of knowledge (*ἐπιστημονικόν*) is not
moved but remains constant.

There can't be a conflict in *boule* objects also because "the *epistḗmonikon* is not

moved." It is not a body-part. It is not moved like desire. Two conflicting desires are two conflicting **motions**, one must win out over the other. Two aims of practical *nous* become one by the single unmoved standard -- it isn't moved.

The "practical syllogism is of this sort:

434a16-19 Since the one supposition and proposition (*logos*) is **universal** (*katholou*) and the other is **particular** the one saying that **such and such a man ought to do such and such a thing**, while the other says that **this then is such and such a thing, and I am such and such a man**

The first premise is a universal, a rule. The second premise subsumes the particular situation and person under that rule. The second premise is never certain.

Now which of the two premises produces the locomotion?

434a19-20 then either it is the latter **opinion** (*δόξα*), not the universal one, which produces movement, or it is both, but the first is more static while the other is not.

Only opinion, not knowledge results from a practical syllogism.

III-12

OVERVIEW

In III-12 and III-13 Aristotle draws together and answers some questions he had left open. In II-2 he promised to tell us later the causes why sensing defines animals and why the touch sense is necessary before any other senses. In III-1 and 2 he showed that the senses must join but did not say where, only that it cannot be at a sixth organ. Now he can show how these things are all causally connected. By “cause” he means all four kinds of answers to the question “why?” Most of what is said here has been said earlier, but it is exciting to see Aristotle giving the inherent reasons, the internal connections, showing that it all fits together, and why it does.

TEXT

434a22-26

Everything then that lives and has a soul must have the nutritive soul, from birth until death;

for anything that has been born must have growth, maturity, and decline,

and these are **impossible without food.**

The potentiality for nutrition must **therefore** be present in all things which grow and decline.

He includes planets among living things. Therefore he says “anything **that has been born.**” Living things have a life cycle. They begin small and reach a definite maturity. To reach it they must grow, and they can do this only by taking in food. So there is an **inherent link** that explains why **all** living things that grow have the nutritive function.

How food is obtained will be central to much of the chapter.

The next soul-part, the capacity for sensation is **not necessary for all** living things. We have known this since II-2, but now he will show exactly **why not,** and just for which living things

it **is** necessary, and why just for those.

434a27-30 Sense-perception is **not** necessary in all living things;
for those that have **a body which is simple cannot** have the
 sense of touch,
 and without this nothing can be an animal,
 nor can those which cannot receive forms without the matter.

Aristotle gives his usual compressed argument and conclusion, for which he then fills in the links, i.e., the middle terms, “causes,” reasons why.

It is going to be the material-cause explanation, when he tells why “simple” bodies cannot sense. The formal cause defines animals; i.e., without sense-perception nothing can be an animal. It will be the efficient cause which will explain how sense-forms move through a medium. He will fill these in later. Here he goes on to the final cause:

434a30-32 Animals must have sense-perception
 and without this nothing can be an animal,
if nature does nothing without reason.
For everything in nature exists for the sake of something, or will
 be an accident of those things which are for the sake of
 something.

In modern terms we say that everything in a living thing is “adaptive.”

**SEE ENDNOTE 148 ON THE FINAL CAUSE AND THE OTHER CAUSES IN THE
 CHAPTER**

434a32-434b2 Grant then that every body which **can travel** would,
 if it did not have sense-perception,
 perish and **fail to reach its end**,

which is the function of **nature**.

For how would it be nourished?

He will give links for the last: Traveling animals must sense in order to be nourished:

434b2 **For**, stationary living things get food from that out of which they have been born.

Plants and stationary animals get food where they are; traveling animals have to find it.

434b3-4 but if it is **not stationary and is generated**, (not eternal)
a body can't have a soul and a nous that can discriminate
 (νοῦς κριτικός) **and not have sense-perception**,

Aristotle divides traveling living bodies into those that travel and are generated, and those that travel and are eternal (the stars and planets). Taking first the ones that are generated (not eternal): Only humans have generated bodies and nous. Such souls have sense perception. Aristotle has said throughout that human individuals become able to exercise their nous only from sense-perception.

Now he turns to the ungenerated (eternal) traveling bodies:

434b4-7 nor (or but?) if it is ungenerated,

For Aristotle the stars and planets are living bodies that move, although they are eternal. In *De Caelo* (292b2) Aristotle say that they are “analogous to animals and plants.” He also remarks (292a20) “**we are inclined to think** of the stars as mere bodies . . . completely soulless (), whereas one ought to think of them as acting and living.” So we can recognize that the common view today was also the common view in Aristotle’s time. It is Aristotle’s view counter the ordinary, that a heavenly body moves from a living organizing-activity analogous to our nous.

Does an ungenerated (i.e., eternal) body have sense perception?

for why would it have it?

Some manuscripts say “for why would it **not** have it?” But how Aristotle continues seems to show that there was no “not.” Sensation would be of no use to bodies that are eternal and whose nous is unobstructed by sleep or ignorance.

For this would have to be to the advantage of either the soul or the body, but in fact it would be neither;

for the soul would not think (*noein*) any better

and the body would be no better because of that.

Sensation could have no function for an eternal body that does not grow to maturity, needs no food, and whose nous is unobstructed. What Aristotle is saying here about the need for sensation to find nourishment also makes this plain.

But now the conclusion should say “No **generated** body. . .” So the text has puzzled all commentators because it says:

434b7-8

No body, therefore, **which is not stationary**
has a soul without sense-perception.

Of course it should say “no generated body.” I have no new solution for this ancient trouble spot.

So far this discussion of the need for sensation (begun at 434a32) has applied only to living bodies that are “not stationary” i.e., **travel** to find their food. We have not yet discussed the stationary animals. We left them with the plants who don’t travel for food, Stationary animals only move in place, bending to avoid something that pains them. In III-11 Aristotle called it moving “indefinitely.” Since **only some** animals travel, **why do all animals have sensation?** The question was left open also in III-9 (432b19). But now he will include the stationary ones with all animals.

Although we have not yet heard **why** all animals have sense-perception, we have known since II-2 that they all do. Therefore, what he says after “if it does have sense-perception...” applies to **all animals**:

434b9-11 Further, **if it does have sense-perceptions**, the body must be either simple or composite.
 But **it cannot be simple**;
for then it would not have **touch**, and it must have this.

He still doesn't tell us the link, why touch is not possible for simple bodies. (It comes at the start of chapter 13). Here he still pursues the final cause. He has shifted from sense-perception to just touch. He will now show why **all** animal bodies need the sense of touch in order to survive.

434b11-12 This is clear from the following.
 Since the animal is an ensouled **body**,
 and **every body is tangible**,

The Greek word is the same (“contact”) for touch-**sensation** and for contact between any two things. Translators obscure this by using “touch” for the sense, but “contact” when bodies meet and touch. Aristotle is saying that since the living thing is a body, it is **tangible**, i.e., can be contacted (bumped into, sat on) be physically touched, like any tangible body.

Now he adds:

434b12-13 and what is tangible
 is that which is **perceptible** by touch

Physically touchable (i.e., **contactable**) bodies (whether animate or inanimate) are also just what the **sense** of touch (*ἀπτικόν*) senses. If the animal had no **sense of** touch, it could not sense when it is touched, and what is touching it.

434b13-17 the body of an animal must also be
capable of **the sense of** touch
if the animal is to survive.

Is the reason why it needs to be able to sense what touches it, so that it can avoid things that bump into it? No, by that time the sense of touch wouldn't help. We are now talking about all animals, stationary as well as traveling ones. Why do they **all** need to sense what touches them?

For the other senses, smell, sight, and hearing, perceive through other things,

but anything which **touches [i.e., contacts]**

if it does not have sense-perception, will be unable, **to avoid some** of them and **take others**.

Aristotle says "**take**" (λαβεῖν) rather than "pursue" (διώκειν) which is usually the word he pairs with "avoid" (as at III-9 432b26 ff). "Avoid" requires locomotion. "Take" requires only the motion of a mouth without change of place (without loco-motion). Therefore this "take" applies to all animals. They all need to **sense** what touches them in order to discriminate what is good **to take** as food, and what to let go by. This applies to **all** animals, since without touch they cannot recognize when they are in touch with their food.

434b17-18 If that is so, it will be impossible for the animal to **survive**.

So the links are that all animals are bodies, therefore contacting and contactable, so that to select what to eat **they must sense their** contacts.

The plant gets its food from the roots in the ground, so it need not recognize what touches it, for example a bug, or seeds falling on it. It does not need to select its food by touch.

434b18-19 For that reason **taste** too is **a form of touch**;
for it is concerned with food,
 and **food is a tangible body**.

In his demonstration in II-3 (14b6), the premises were that touch is the sense for the moist and dry which are tangible qualities, and that food is the moist and dry. He proved that touch is inherently the sense for food. Here he premises that taste senses food. Since food is tangible, he concludes that taste is a kind of touch.

434b19-22 Sound, color, and smell do not feed, nor do they produce either
 growth or decay;
 so that **taste too must be a form of touch**,

Aristotle said all along that taste is a kind of touch, but until now he did not demonstrate the internal links: Since taste **is** concerned with food, and food is a tangible body, and

because it (taste) **is** a perception of what is tangible and nourishing.

Outline of the proof:

taste senses food,

and food is a tangible body

what senses tangible bodies **is touch**.

so that **taste too must be a form of touch**,

SEE ENDNOTE 149. ON COMPARISON WITH II-2.

434b22-25 These (taste and touch) therefore, are necessary to the animal,
 and it is clear that it is not possible for an animal to exist without touch.

But **the other senses** are necessary for the sake of well-being and **not for every kind of animal** no matter what, although they

must exist in some,

Although “necessary” (αναγκη) only for **well-being**, this is still a kind of “necessary” because for Aristotle the word “necessary” means: “**if** such and so is to be, **then** X is necessary.” So, **if** the animal is to survive well, **then** they are necessary **for this to happen**.

In chapter 13 Aristotle will distinguish these two kinds of “necessary.” Without touch the animal dies instantly, whereas it can survive for a while but not well, if it loses its distance senses.

Now Aristotle shifts to the question of not running into things, which we seemed to miss before. The distance senses are necessary for the well-being of which animals?

434b25-27 e.g. those capable of traveling. For if they are to survive, they must perceive not only when in contact with an object but also at a distance.

Up to now we have been discussing the final cause. This is the sort of explanation based on what is necessary “to survive.”

To discuss the distance senses, Aristotle turns to the efficient cause: How?

For Aristotle locomotion happens **not in an empty grid of space-points**, as in the Western view. Locomotion and distance-sensing go on in air or water. What is the reason why only air and water (not each of the four elements) are media for distance sensing?

434b27-32 And this (ability to sense at a distance) would be so if the animal is capable of perceiving **through a medium**, the latter being affected and moved by the object of perception, and the animal by the medium.

The medium of sense-perception is a neat case of a middle term. The medium gives a causal explanation for distance sensing, and it happens to be located between.

For that which produces movement in respect of place produces a change up to a point, and that which has pushed something else brings it about that the latter pushes, the movement taking place through something intervening;

In Aristotle's theory, each bit of the medium affects the next bit. For example, heat travels because as each bit of air heats up, it also heats the next bit.

When an impact travels, each bit of medium changes the next. For Aristotle the medium acts bit by bit. Rather than one initial impact activating inert bodies, Aristotle's is a primitive field theory.

434b32-435a4

the first thing that produces movement pushes without being pushed,
and the last thing alone is pushed without pushing,
while that which intervenes does both, there being many intervening things.
So it is too with alteration, except that things are altered while remaining in the same place,

He assumed that the color and shape travel as each bit of the medium affects the next. .

e.g. if something were dipped in wax, the latter would be moved as far as the object was dipped;
but a stone is not moved at all,
while water is moved to a great distance;

In Aristotle's theory, the first push does not itself travel. It only pushes into the medium. Then each next bit of medium takes the motion further. If the medium is thick as wax, the effect stops right where you stop pushing. If the medium is fluid like water, the fluid will move much further than the push. In a stone the ring will not even enter to begin a movement.

435a4-6 and air is moved to the greatest extent

In air the color and pattern go right through it; that is why you can see it. It comes right out on the other side of the air.

and acts and is affected if it persists and retains its unity.

Hence too in the case of reflection it is better to say not that vision issuing from the eye is reflected back,

An old theory had rays emitted from the eyes, on the model of an echo or reflection.

435a6-8 but that **the air is affected by shape and color**, as long as it retains its unity. Over a smooth surface it does retain this;

Aristotle thinks rather that echo or reflection are special cases, when the air acts as a unit, as with a mirror or a smooth surface on water.

Shape (and any common sensible) is sensed in each of the five senses along with color and sound, etc. (III-1). Aristotle thinks that they affect the first bit of air, which moves the next bit, as in wax when the seal ring pushes it, only much further so that

they reach us.

435a8-10 hence it in turn produces movement in the organ of vision,
just as if the design (σημείον) **had penetrated through to the further side.**

Since the wax is fairly solid, it holds the pattern of the seal on the ring, because the shape travels only as far as you push your ring in. According to Aristotle's theory, if the wax were much softer, the shape of the seal would travel further into the wax than where you stop pushing your ring. And, if instead of wax it were air, the shape would come all the way through and out the other side of the air.

So it is clear that if the animal body were made of water or air, the sensations would go right through the body and out its other side. Aristotle continues without a break into III-13.

SEE ENDNOTE 150 ON HOW MUCH IS LINKED IN THE CHAPTER

III-13

OVERALL

Aristotle continues to fill in the chain of causes which he began in III-12. He gives two reasons why a body that senses cannot be simple, i.e., made of one element. It must be solid and it must be a mean between all four tangible qualities. He shows where the five senses join and why they have to join there. Then he fills in why the very being, definition, and composition of an animal's whole body is the sense of touch.

TEXT

The preceding lines have explained that the sense forms go right through water and air (which is precisely why they are media), and since a medium is always "simple," i.e., consisting of just one element (either just air, or just water), Aristotle can now explain why a body that senses cannot be simple.

435a11-12

It is apparent that the body of an animal cannot be simple;
I mean, for example, composed of fire or air.

He says what he means by "simple." He means consisting of just one element (earth, air, fire, or water). Air, water, and fire are too fluid. About earth he will explain below. If an animal's body were made of one of the media elements, the sense forms would pass through it.

435a12-13

For without touch it cannot have any other sense-perception;

Aristotle has not yet given the links that explain how the other senses are made possible by touch. First he will tell us why a living body cannot have the sense of touch if it is simple.

435a13-14 **for** every ensouled body is capable of touch, as we have said.

All living bodies including plants can be touched (contacted) although plants don't sense the touch.

435a14-17 Now the other elements, except for earth, could become sense-organs, but they produce sense-perception by perceiving **through something else**, i.e., through media.

In Book II Aristotle said that the eye contains water, and the ear contains air, and with these organs we pick up the sensibles in these very media. (Fire was excluded for another reason.) Elements (which are media) are appropriate for distance-sensing.

435a17-18 But touch occurs by directly touching objects;
that too is why it has its name. ["touch"]

Using the same Greek word, Aristotle says that the **sense of** touch-contact is the only one that perceives by means of **touch-contact**, which is why this sense is named as it is.

435a18-19 Indeed **even the other sense-organs perceive by touch**,
but through something else [a medium];
touch alone is held (*dokei*) to perceive **through itself**.

When things depend on something else they must eventually come to something that depends on itself. If the senses sense through something else, there needs to be something that senses through itself, if sensing is to remain in the body, and if the senses are to join. So the distance senses eventually touch (contact). But to see this, we have to recall from III-7 that the other sensations move on from their special organs and come to rest at one "last" organ.

" . . . the air makes the pupil such and such, . . . and the organ of hearing likewise, **the last** in the series is one (τὸ δὲ ἔσχατον ἔν)" (III-7, 431a19)."

Now he has explained why this last organ has to be made of something solid (i.e.,

touchable). **The distance senses must terminate, if they are not to go all the way through the animal and out the other side.** as they would do if the body were made of an element (a medium), as he explained in the last lines of chapter III-12 (434b11-12).

So the distance senses are really **also** sensed by touch (contact), as he says here. Of course they have to terminate (i.e., contact) in the body, rather than only traveling.

435a20 **Hence none of these elements could constitute the body of an animal.**

Aristotle came to this conclusion in of III-1, but did not supply the links. Now he gives **the reason why** a sensing body cannot be made of an element. (I.e., cannot be simple).

435a20-21 Nor can the body be composed of earth.

But the need for a solid terminus is not the only reason why touch sensing requires the body not to be made of one element. Even though the element earth is mostly solid, there is another reason why the touch center and the animal body need to be a mixture -- a proportion of **all** the elements. The flesh and the touch center have to be “the mean,” the proportion of all four touch-qualities, in order to be able to sense the proportions of other tangible bodies.

435a21-24 **For touch is, as it were, a mean between all objects of touch,**
[all the tangible qualities]
and **its organ** is receptive of not only the qualities which are distinctive of earth but also **heat and cold and all the other objects of touch.**

In II-11 Aristotle explained touch in this way, (the mean can sense every tangible object by the deviation). There he said that “the sense [of touch] being **a broad mean** (*mesotētos*) between the contraries [hot/cold, fluid/dry] **the mean** (*meson*) **can discriminate** (*krinein*.” In III-4 he said that the flesh is made of the same four which it also discriminates. This function of the body’s flesh-mixture as “mean” is the explanation (the middle term) for **“receiving forms without their**

matter,” (III-12, 434a27-30) which is the very definition of sense-perception. Therefore, if the touch organ were made of just one element, it could not sense the proportions of other bodies.

435a24-435b2 **And for this reason** we do not perceive with our bones and hair and such-like parts-because they are composed of earth.

Since earth is not a proportion of all four, it cannot be their mean, as flesh is.

For this reason too plants have no sense-perception, because they are composed of earth.

Aristotle says that plants consist **mostly** of earth. Plants do contain some other elements. Earth alone would not hold together; only mixtures do that. Plants are “made from **more earth**” (τὰ μὲν γὰρ ἐκ γῆς πλείονος συνέστηκεν, οἷον τὸ τῶν φυτῶν γένος, *De Respirat.* 477a27). Also: “Although dry and earthy, plants contain a moisture which does not easily dry out” (φυτοῖς . . . διὸ καὶ ξηρὰ καὶ γεώδη ὄντα ὅμως οὐκ εὐξήραντον ἔχουσι τὸ ὑγρόν. “ Long 467a.8-9).

A stone has some moisture; pure earth would be a powder. As an example, he says that mummies sometimes suddenly crumble into dust when totally dry (*Meteor.* 390a25).

Nevertheless earth as we find it is solid. But touch sensing requires the mean of all four elements.

435b2-3 **But without touch it is not possible for any other (sense) to exist,** and **this sense-organ** is composed neither of earth **nor of any other element.**

He summarizes that all senses must arrive at a touch-contact organ, and to sense touch the organ cannot be an element.

And, since animals are touch-sensitive in **all** parts of their bodies, the mean is also the composition of the flesh of their bodies.

435b4-13

It is apparent, therefore, that this is the only sense deprived of which animals must die.

For, it is not possible for anything which is not an animal to have this, nor is there any other sense except this which something which is an animal must have.

And for this reason the other objects of perception, e.g. **color, sound, and smell, do not in excess destroy the animal, but only the sense-organs**, unless incidentally, e.g. if a push or a blow takes place together (*hama*, ἄμα) as the sound; by sights and smell too other things may be set in motion which destroy by contact. And flavor too destroys only in so far as it happens to be together (*hama*, ἄμα) capable of coming into contact.

But an excess in objects of touch, e.g. hot, cold, or hard things, destroys the animal.

In other words, heat or cold or hardness can kill you, whereas too bright lights or loud sounds can only make you blind or deaf. This is **because** animals are touch-sensitive all over. The touch sense **is** the proportions of the animal's body and the defining essence of animal.

435b15-19

For excess in every object of perception destroys the sense-organs, so that in the case of objects of touch it will destroy touch, and by this the animal is determined as such.

For it has been shown that without touch it is impossible for an animal to exist.

Hence excess in objects of **touch** not only destroys the sense organ, but the animal also, because this sense alone it must have.

The loss of the distance senses will not instantly kill the animal, whereas it dies if the composition of its body is destroyed. Without the distance senses it can still live, though perhaps not long or well.

435b19-25

The other senses, the animal has, as we have said, not for its existence, but for its well-being,

e.g. it has sight in order to see, because it lives in air and water, or, universally (*holōs, ὅλως*), because it lives in something transparent; and it has taste because of what is **pleasant and painful**, in order that it may **perceive** these in **food** and have **wants** and be **moved** accordingly; and hearing in order that something may be indicated to it [and a tongue in order that it may indicate something to another.

See on voice at the end of II-8. The last sentence would lead on into the *Politics* where interaction between individuals is taken up.

Aristotle summarizes what he has done in III-12-13, relating in one causal argument most of the strands and functions that were taken up in the *De Anima*. He has demonstrated why plants do not sense, why animal nutrition requires sensing, and why the senses must terminate at the organ of touch. That is why touch is the terminus of the *De Anima*.

SEE ENDNOTE 151 ON TOUCH IS THE TERMINUS OF THE *DE ANIMA*.

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Book III

80. On One Sense Object in Two Media

A few intricate considerations are implied:

One might object that the argument doesn't cover the possibility that one of the two media might contain a sensible that the other medium lacks. This still seems possible since Aristotle didn't say that all sensibles always go through both media. But Aristotle said rather only: "If there is more than one medium for the same sensible (as color goes through air and water) then the animal with an air-organ will sense that same sensible also in water, and vice versa. Where does he say that one of the media cannot lack a sensible which the other contains?

From the last lines of II-12 just before this argument begins, we might infer that both media (the two pliable elements) are always affected by any sense motion. (See next ENDNOTE.)

81. On Solidity

In Aristotle's most proper use of the word, a "body" is a mixture of all four qualities in some proportion. "Touch" and "contact" are the same word in Greek (435a18). What makes contact possible is a high degree of solidity, corporeality, body-ness, which makes for defined limits. (See *De Gen & Cor* cited in ENDNOTE ON SOLID BODIES in chapter II-11.) Two bodies can be said to "touch" only if their limits are in the same place and they also retain their limits (if they do not merge).

The fact that air and water are media (pliable) falls together with the fact that they are elements. They are not contactable bodies, or more exactly, contactable only to a low degree. They can take on various forms because they do not maintain their own limits, which means they are "undefined," not delimited. With this in mind we can look back to the end of the last chapter (II-12, 424b11), where he said: "not every body is affected by sound, color and smell. . . . those which are affected, are undefined and inconstant (αορίστα και ου μενεί) such as air." As usual, Aristotle makes his definitions with inherent connections between them, so that he can demonstrate with them. Since for Aristotle solidity requires a composition of all four, the reason why the media of distance-sensing are precisely elements is their relative undefinedness, their lack of solidity due to their being uncomposed, which is precisely their being elements, not

compositions.² Hence they lack limits, defined surfaces, hence they are incapable of shutting other motions out, therefore they are capable of taking on other forms which is what media do.

Then he eliminates fire and earth as media for other reasons.³

There are certain problems. Flesh is a medium, yet it **is** a mix of all four qualities (III-4 429b14-16). Aristotle says that flesh is at the midpoint of solidity/pliability. In this respect flesh is like the wax he cites in II-1 (412b7) and III-12 (435a4) which is why it can take on the form of a seal. Although composed, its solidity is a mean between the fluidity of air and water and the solidity of earth. But of course flesh is the medium of **touch**, i.e., precisely the degree of **bodyness**, i.e., **contactability** is what it takes on and transmits to the touch organ. He covered this kind of medium in the first part of the argument.

The elements are not only the constituents of bodies. Of course, the elements are also in the universe all around us. The fiery heavenly bodies, the air, then the ocean, and then the earth are arranged in that order. Each element has a defined place in the others. For Aristotle a motion is defined by a direction and an aim. When left to its natural motion, each element is moved toward its natural place and comes to rest there. (See Lang, H. S., *The Order of Nature in Aristotle's Physics*. Cambridge, 1998.) The media-senses go through the two “undelimited” elements all around us.

We can certainly touch air and water. I am not sure that this is covered in II-11 where he said that the intangible or barely tangible is also an object of touch.

What about crystals? In II-7 Aristotle said that some solid bodies are transparent. They do have defined, touchable limits; how is it that they are media for color? What could he answer? I was not able to answer this question in II-7 either.

This part of the chapter (about bodies, media, and organs) concerns the material side of the argument against a sixth sense. The formal side follows in the second part.

2 Ice and crystals are special cases. I have not found his treatment of them satisfactory. See II-7, 418b6-9 on transparent solid bodies, and *De Gen & Cor*, 330b26 on ice.

3 He says that pure earth would be a dry powder, but in nature the earth contains moisture. (*De Sensu* V, 445a23, *De Gen & Cor* 330b23, 335a1) I do not see how that is an adequate explanation for the solidity of earth, given that he says that solidity requires a composition of all four elements.

82. On No Special Organ for the Commons

This statement continues from the previous part. The argument against an additional sense has proceeded in terms of media and **organs**. Of course organ and sense are the same single thing (defined in two ways). That there is no special **organ** for the commons is **the material side** of the fact that there is no special **sense** for them.

The sensible motion that affects us is from the white or the loud. If the white or the loud moves, we sense the motion from the white and the sound, but there is not still another motion that moves our senses just from the motion. It is always the sense-motion of white or loud which reaches the eyes or ears. The formal cause has to do with the objects, the commons themselves. From now on, the argument will be in terms of the objects, **what** the five senses perceive directly and incidentally. There is also an argument from the final cause at the end.

Aristotle will tell us much later (in III-7, 431a19) that the five sense-motions join in one place. Even then he doesn't say where. They come together at the "the last thing" (το εσχατον). Only in another book does he say what part of the body this is. Aristotle would never say that the senses join **because** they meet in one material organ. Quite the contrary, it is in terms of their function of sensing the same object, that he will show why they must join as one sensing. Material conditions are required to be a certain way if the function is to happen. Therefore the function explains what the material conditions must be. If one wants an edible cake with a certain kind of taste, then the ingredients and their proportions must be as in the recipe for that cake. They are determined by the function for which the cake is wanted.

See for example *Parts of An.* 640a20. "Because that which is going to be . . . has a certain character, therefore of necessity some particular thing P must be or must be formed; (it is) not because P is now or has been formed, therefore the other . . . "

83. Five Kinds of Sensing

1) by **one** sense only, directly itself (καθ' αὐτο):

white by seeing, sweet by taste, high pitch by sound, etc.

2) by **each** sense directly itself (καθ' αὐτο):

the commons (motion, size, figure, number, one)

3) by one sense incidentally from the other four:

sweet by vision, white by taste, etc.;

the commons by each sense from each other,

4) by the joint sensing of the five senses:

the commons as commons

one thing;

5) **only** incidentally from all five senses:

Cleon's son, bile, your friend, the food we eat, the house we live in.

We need to notice that "incidental sensing" can mean indirectly from the direct sensing of a neighboring sense as in 3), or it can mean without any direct sensing, "only incidentally," as in 5).

The joint sensing also has two functions: While each single sense senses the commons directly, they are discriminated due to joint sensing. Cleon's son is sensed incidentally by joint sensing. We must not lose track of the fact that Cleon's son is a sense object. The only incidentals are a kind of sense objects.

84. On Other Readings of 425a14 - 425b3

Once the argument I set out above is clear, you can see that the alternative readings must come to the same result as well. Many variant readings are possible.

Could Aristotle mean that the supposed sixth sense would sense the commons directly from the things? But there is no organ for the commons, and no sense-motion from them other than the five special sense-motions. Also, if **it** sensed them directly, then **we** would surely sense them directly, whereas Aristotle concludes that we would sense them only incidentally. So this is not Aristotle's supposition.

There is still another reason. The supposed sixth could not sense the commons directly without sensing the specials as well. What could movement and size be without color and the other specials? Only the white, black, or loud thing moves and has size. Even the frog who

(according to recent studies) senses “only movement,” actually senses black dots moving (the flies it needs to eat). Without black it could not sense the motion of the dot-shaped things that it eats. The specials have to be sensed along with the commons, but if the sixth did all of this, then it would BE a common sense of all five. So this supposition reveals the necessity for Aristotle’s common sense, if the commons are to be sensed as such.

Aristotle also does not mean that if there were a sixth, then the five would lack the commons. If the white thing moves and is large, there would be no way for the special senses not to sense this. So even with a supposed sixth, the specials would continue to sense the commons directly.

But if one still wants to insist that the supposed sixth sense senses the “commons” in things directly and without the specials, then (although we would perceive them thus directly) they would be related to the specials only by an incidental relation. They would not be the commons **of the specials**.

Aristotle made no chapter divisions so it always helps to read the first sentence of the next chapter. We see that he continues to argue against a special sense. There he argues that there is no other sense to sense “that we sense.” The supposed sense would sense what is already being sensed. This is almost certainly also the case here. The supposed sixth here would sense what the five sense in common.

We must take the supposed sixth as getting the commons not directly from things, but rather from the five. Since the sixth would be **another** sense, a mere neighbor of the five, they would still sense their commons directly, but the sixths could get them only from the five **other senses**, by incidental sensing from its neighbors. With the sixth we would sense nothing directly. This is the outcome Aristotle finds, and it is clearly the supposition he intends.

It might be, for example, that over the years you have met five people who have been to Zanzibar. They don’t know each other so they don’t know that they share this. You haven’t been to Zanzibar, so you don’t share it. Now you bring them together to a party at your house. They recognize their common experience and delight in referring to places on Zanzibar. But you don’t have their commonality even now. The sixth would be like you in my example. Their commonality inheres in their togetherness. A sixth could not have their commonality. Only they together can.

Without many senses jointly, we could not sense the commons **as common**, even

though each special sense perceives them directly. Without the joint sensing, there would not be one moving thing that we see and hear and taste and touch. We would not sense any of the commons **as such**. Then the senses would not sense an organized experience. Motion, size, figure, and number would not be **inherently connected** to the things we sense through the five.

85. On the Word "Logos" ("Ratio" or "Proportion.")

As I said in the ENDNOTE ON "LOGOS" in II-12, the many uses of the word understandably force a translator to use various translations. I usually argue that a single word in Greek should be rendered by the same English word throughout, so that the reader can learn the author's use of it. I admitted that this is difficult for "logos." **But the many uses cannot be divided from each other.** It is not a case like our word "jar" which has two distinct meanings. Rather, the various meanings of "logos" form a single cluster all of which comes with the word each time it is used. As with many words, one has to see what effect the use of the word has in each different situation. This applies also, for example, to the Latin word "ratio" from which we get rational, rationing, reason, and of course our word "ratio."

I argue that we must think "ratio" or "proportion" wherever "logos" appears throughout. (Some spots to look at from here: II-4 416a17, II-12a27 and again at 412a30). This would be true in every case of a word that brings a cluster of interrelated meanings. But for Aristotle there are inherent links between these different uses. the word "legein" is much stronger than just any act of saying. For example, "Rather one thing (το εν) must tell (*legein*, λεγεῖν) that they are different; for sweet is different from white. The same thing (το αυτο) then tells (*legein*, λεγεῖν, proportions) this; hence, as it tells (*legein*, λεγεῖν), so it both thinks (*noein*, νοεῖν) and senses." ὥστε ὡς λέγει, οὕτω καὶ νοεῖ καὶ αἰσθάνεται (III-2, 426b22). The single mean **tells**, (clearly a proportioning, an ordering, not verbal), and this telling determines both thought and sense, (and of course then also what we will say in words).

Are "proportion" and "ratio" be used synonymously? I have been doing so. Strictly speaking, a proportion consists of four terms, $a/b = c/d$. Not until III-7 does he discuss four terms. A single sense-form is a ratioed result. A "logos" is clearly a ratio-system, but not yet A is to B as C is to D.

The sense is a logos, a ratio, i.e. an enactment of one possibility in relation to the whole system of ratios **just as** middle C or any one note or melody happens in relation to the whole tuning system of the strings.

"Legei" is a form of "logos." "Logos" can mean:

- 1 word and telling;
- 2 definition or account; and
- 3 due proportion.

Legei is also used when it means "tells" a story. (You legei a story; "phasin" is saying).

Even if we are not inclined to read the word with the internal connections between its uses, we would still pick these connections up in our context here. Aristotle has just shown that sense-activity is a proportioning (logos). We came from a long discussion of voice, and of pure tastes, and pitches and their chords, harmony and mixture. The sense **is** a logos and this gave the word "logos" his special, carefully shown meaning of proportion or ratio, which he has now affirmed three times. Leading up to our passage he had asked about white and sweet, "by what do we sense **that they are different?**" He showed that this can be done only by sense. Now he says "that which tells (legei) **that they are different . . .**" (426b22). Therefore the verb-form "legein" picks up this proportioning which he just stated with the word "logos." It is both its usual "telling" and the "proportioning" activity of sense.

Furthermore, this meaning of "legein" instances itself twice: The sentence "**As it tells, so it thinks and senses**" says that thinking-telling is done by the same one ("it") that does the proportioning, so the sentence itself **tells** that both meanings of "legei" apply.

Let us notice also that this telling here is in the form of a proportion ("as ... so").

All along, concepts are being formed about and from the senses. So it cannot be wrong to notice how he is forming concepts from sense, since just a few pages from now he will discuss how this is done. Right here the assertion "as it tells, so it thinks and senses" is itself a concept that tells that the same sense-ratio functions in thought and sense.

We recall that we have been comparing and discriminating sense-qualities throughout the chapters on the senses, not only here. For example, in II-10 we compared taste qualities (sweet) and colors (white), and we also did this about pitches, chords, and salt. We had to consult our images of these to understand the arguments. It will be a major point of Aristotle's that one cannot think without sense-images. Of course, when we are thinking (making) comparisons among the senses, it is obvious that we need those to be present to us, if we are to agree that loud/soft is like bright/dark, or that the varieties of smell mostly follow those of

taste. In thinking about sensing, we have all along been doing what his conclusion tells here.

But why does he put “thinks” ahead of “senses,” since the sense-mean is prior. Sensing is prior in the individual, but thought (noei) precedes in nature.

86. On the Derivation of the Definition of Pleasure

In II-2 and II-3 Aristotle did not show, he merely asserted that living things have pleasure and pain if they have sensation. Now he has laid out the whole internal order that is involved. Sensual pleasure properly is sensation near the mean, and even more, if it is a blend.

The pleasure is not a second thing added to sensation. It is rather a characteristic of the sensation itself. We are accustomed to think of separate entities: the experience, the pleasure, the evaluation of the pleasure as good, then the standard for what is good. In contrast, for Aristotle evaluation is not something external that has to be brought to a sensation. He gives these aspects internal linkages between them. (He often says that one single thing has a number of connected parameters.) For him the pleasure is the same single thing which is also the sense-experience. The pleasant sensation is also the “apparent good.” (III-10, 433a27).

We recall that “the sense is a proportion” (II-12). The mean vs. the extremes is not an added-on standard. In the nature of sensing he finds something that does not depend on culture, opinion, external value systems. Therefore Aristotle considers pleasure “natural” when it is within the range of the sense-proportion. Aristotle’s *Ethics* depends on this spot in our chapter.

But doesn’t Aristotle know how much the various cultures differ? The Greeks of his time were quite aware of cultural differences both with other peoples and even between different city states which were only a few miles apart. It was a famous slogan in Greece long before Aristotle, that “nature and nurture cannot be separated.” And for Aristotle, human beings are not possible apart from a polity. But neither can everything human be attributed just to nurture, culture, and training. Nature provides a standard although it is often violated by people.

Aristotle said that one could develop habits to experience pleasure when exceeding the natural proportions. **Sense-experience** provides as a standard, so that other factors can be considered in relation to it.

Compared to Aristotle, the modern view of sense-experience greatly narrows how we think about it, and what can be derived from it. So much of what Aristotle gets from sense must, in the modern view, be added to sensing from the outside. If we first assume that there is no organization **internal** to sensing, no proportion and balance of living and surviving in the environment, then Aristotle will seem to be adding a prejudice.

We tend to think of sense-experience simply as **what** we sense, so that a gap separates sensing from values, desire, pleasure, pain, ways of life. And, we are accustomed to a gap between sense and thought. Where we have gaps, Aristotle looks for inherent internal relations. Here and in the next few chapters we need to notice the exact steps by which he finds so much within sense experience which leads directly from sense to thought and understanding. His derivation of sensual pleasure is a vital step in this continuity.

The strategy of building inherent linkages can be powerful and promising, when translated into any modern context. For Aristotle, concepts, even the highest kind, are the further reaches of an active ordering that is already internal to sensing and living. Experiencing happens in the context of living so that its ratios, relationships, order, and organization are in context. Therefore they are not arbitrary. And the order of understanding, because it emerges from sensing, is also not arbitrary but inherent.

Of course pleasure and pain are not emotions for Aristotle. Emotions are bodily disturbances which he likens to illness or drunkenness (I-1, 403a16-24). Drunkenness and other emotions can be accompanied by pleasure, but the pleasure is an aspect of the activity of sensing.

Pleasure need not be sensual. It can be an aspect not only of sensing but also of other activities. Aristotle says that understanding involves even more pleasure than sensing does. And God – who is the ordering activity of the universe – has the greatest pleasure. God doesn't have sensation. From this we can conclude that for Aristotle the possibility of pleasure is inherent in activity, *energeia*. *Energeia* involves order; it is inherently an organizing.

87. On Aristotle's Derivation of the Definition of Pain

426b7 lupei: (pains)

The Ethics hangs from this spot. In II-12 he has already said that extremes "dissolve"

(luetai) the ratio. Here in III-2, he has already said above that the extremes “destroy” the proportions of the organ. Now, after discussing pleasure as determined by mixture, blend, or mean on the ratio, this time when he mentions the extremes, he says that the extremes **hurt** the organ. **This defines pain** in terms of this same single sense-proportion.

Bywater’s change makes Aristotle say only what he said before, ignoring the fact that pleasure and pain have just been derived.

88. On Hypokeimenon

26b8 Each subject (hypokeimenon) (also at 25b15 near start) is “matter,” not because the organ is material, but as the genus is “matter” in relation to its species. For example, something that is just animal doesn’t exist; it must be dog, horse, or human being. So also, color doesn’t exist except as red or blue or some other color. Each sense-genus is a continuum, as we saw throughout.

89. On the Flesh Is Not the Ultimate Organ

ἢ καὶ δῆλον ὅτι ἡ σὰρξ οὐκ ἔστι τὸ ἔσχατον αἰσθητήριον· ἀνάγκη γὰρ ἂν ἦν ἀπτόμενον αὐτὸ κρίνειν τὸ κρῖνον.
426b.15 The different senses **must** travel to one center, else the discriminations couldn’t happen and we would not discriminate white from sweet. We could not see that we see and don’t taste, or vice versa, or both together. Therefore the sentence which immediately follows “white and sweet” is about the ultimate organ.

Compare: Also in III-13 435a18: “αὕτη δὲ δοκεῖ μόνη δι’ αὐτῆς . Only touch seems [to sense] through itself.” Note the “dokei.” It means “by common opinion,” or “seems to be so.” He explains there that only touch (“contact”) can be where the media-senses come in contact with each other and terminate, i.e. from being media travelers they stop i.e. terminate, i.e. contact something. So the touch organ is the “ultimate” organ and so it is also “the discriminator.”

If the flesh were this organ, touch would be alone, since we know that the other senses do not join it in the flesh. Flesh has only touch, not seeing and color etc. But If touch were alone, he says: ἀνάγκη γὰρ ἂν ἦν ἀπτόμενον αὐτὸ κρίνειν τὸ κρῖνον. “By touching, the discriminator would discriminate itself.” Or: By the same touch it would also do the discriminating of itself.

((The translators find no role at all for the "autou" here. Hamlyn misplaces it where it adds nothing, and loses the point: He has: "it would be necessary for that which discriminates to discriminate when it is **itself** touched." (In that case the "itself" would add nothing to the meaning.) The point is that the discriminator would have to discriminate **itself** (when touched).

Aristotle calls it "the discriminator" (or that which discriminates; *to krinon*,. But we have to have read III-7 and III-12 and III-13 to follow him. He mentions it here only because the argument he just presented corroborates what he said in II-11, that the touch organ (the contact organ) cannot be the flesh. If it were, the senses could not join there, so **touch would be left alone and would have to discriminate itself**.

That this is the point can be seen also from the argument from which Aristotle digressed, and to which he now returns. It is that a sense can be discriminated only by reference to others, and he now returns to that argument.

Many different readings of this passage seem to be possible. Hamlyn and most translators including Smith, Hett, and Moerbeke read the phrase to say that discriminating would have to be by touch (i.e. contact). This seems to follow if flesh were the discriminator, since flesh senses by touch, so discriminating would be by touch. It seems to me that this misses the big point that **the other senses wouldn't be there**, at the surface and throughout the flesh, so if it were the discriminator, the discriminator would have to discriminate itself alone, which is not possible according to the argument in which Aristotle is engaged.

90. On the Unity of the Person 425b35

Kant's concept of the "unity of apperception" founds the unity of all experiences on their being "mine." The concept of the unity of the person is usually added on to "experiences" as if their unity were a relation that is external to them. For Kant all unity is imposed; it comes down upon discretas. But Kant did not mean that an experience is the sort of thing that could happen without me. Of course its being "mine" is constitutive and inherent in what an experience **is**. But whereas Kant merely invoked it, Aristotle derives the unity. The sensations are possible only as differentiated-from, (i.e. "discriminated" in reference to) each other. A sensation of white happens only as discriminated from black and sweet.

But is the unity of the senses really also the unity of the person? Not quite, but the

relation is close. The soul is the form or kind of body, and for animals this single capacity for unified sensing is the form of the whole animal. In II-3 Aristotle said that in animals the sensing power reorganizes nutrition and reproduction. For him there is always just one soul and hence one body-organization, and humans are still animals. In humans practical and theoretical nous can make for deliberation (boulesis) and can participate and even stop sensual desire.

“It is doubtless better to avoid saying that **the soul** pities or learns or thinks (*dianoesthai*). It is better to say that it is **the human who does this with the soul**.” (I-4, 408b15).

So the power for animal and human functions is somehow different from the person who does them with the soul.

One can argue that it is nous rather than sensing, which provides the unity of what a person **is**. In III-6 we are told that “something indivisible from the soul” gives unity to mathematical forms and forms such as man and dog. These forms come to us through sensation, but they are forms of understanding, not sensation.

91. On Time

For Aristotle, a single determined moment is **a product** of the togetherness of the senses. Don't assume that time units are just given as a grid of determined now-moments made in Greenwich, England, or by idealized observers signaling from space ships. Rather than assuming, Aristotle questions time, how it is defined, and how single “simultaneous” moments come about. They are not just given.

The idealized observers in modern science are, after all, modeled on human or animal perceivers. One can ask: What exactly is it about an observer that makes for the capacity to determine a single time? How do **we** generate time and determine a single **now**?

Kant held that the subject imposes unity on the flow of time. He accepted Newton's absolute time, but as something imposed by the unity of an observer. That is very different from Aristotle's treatment here. For Aristotle the question is rather, how the unity of an observer comes about. The sensing-together **creates** a unit of time for an observer. (Merely asserting a together does not.)

I have predicted that quantum mechanics will soon free itself so that one can write

formulae in which time and place are determined (retroactively) **from** an interaction. Currently quantum has to be fitted into relativity which preserves Newton's absolute space and time, albeit with several observers instead of one. (See Gendlin and Lemke "A Critique of Relativity and Localization." See also Jon McGinnis, "A Time to Puzzle: Aristotle's Puzzles Concerning Time" (Apeiron).

92. On the Senses Together

As white apprehends black, so sweet apprehends bitter (*De Sensu* VII, 448a1).

White, not black, is to sweet (and hot) as black is to bitter (and cold). The proportional links between the senses constitute a vital network in the organization of nature. The tasteless is proportional to seeing darkness. Aristotle will employ these relations in III-7.

With our subjectivist habits, Aristotle's linking of white with sweet and hot may seem just sentimental to us. Of course, Aristotle's physiological information is primitive. We have to grasp the role of this argument. If the white/sweet/high pitch/hot poles did not have a definitive relation, and if the opposite poles did not have their relation to each other, then the sensible qualities in things would have no definite organization. In Aristotle's concept of nature, sense-experience is internally organized and interrelated before there ever are separate sensations. I say all this to mark the difference between Aristotle's view and our usual view, and to ask the reader to attend to the powerful philosophical strategy of this chapter despite Aristotle's primitive information.

The sense quality is not something that already exists out there, waiting to be perceived. The things do not come with sense-ratios on them. They don't have color or sound. But for Aristotle this does not mean that sensing is "subjective." Without animals the inanimate bodies would all be as they are now, but without their sense-proportions. Sensing and life are active processes of nature. Life processes are not subjective representations of inanimate things. They are active natural processes in their own right, interesting and complex ones.

Aristotle is saying neither that sensing gives merely a subjective impression, nor that it pictures an objective reality apart from sensing, rather that sensing is itself a process of nature, a proportioning which makes complex life processes possible.

In our Western scientific universe there are no active plants and animals, only passive points related by observers. There is an unbridged gap between the material reductions of science and the human world -- because the active self-organizing plants and animals are missing in between.

For Aristotle, the sensible world does not consist of percepts waiting for a perceiver. Nature inherently includes the animals' active proportioning. The sensible world exists as proportioned by a real existing activity: animal life. The activities of animal perception are a major part of nature. The usual Western assumption is just what Aristotle argues against, here: the assumption that the senses are first separate in the newborn, and that their interrelation develops later. New research on infants shows that this is not so. Newborns who were given a rubber nipple of a certain shape in their mouths are then able to pick out by sight the one they had, and prefer it to the others, but current theory is unable to account for this. (See my "Body, Language and Situation," part B.) Our latest findings happen to corroborate the view that the unity precedes the differentiated senses. But the issue doesn't concern the findings as much as the structure of our concepts.

The process of living is not a representation of its environment, nor does it create the reality of its environment. Living is rather an ongoing interaction which employs and thereby articulates (activates) what would not occur (would remain merely "potential") without life going on in them.

As usual, for Aristotle, **the unity** or proportioning between different sensations is **prior to their separate definition and discrimination.**

93. On "by Sense"

You may be in the habit of considering all that this chapter shows as done by thinking and knowing, but don't let that lead you to miss that **Aristotle derives it all from sensing.**

Kant did not merely study this chapter; he was intoxicated by it. Nearly all of it can be found in the basic structure of the *Critique or Pure Reason*. Kant took over Aristotle's sense-proportions, unity, determination of time, and the rest, but Kant rendered them all as "forms of thought." Aristotle derives them from sensation. Aristotle does also consider all order in nature as aiming at nous, but this is a very different relationship and does not mitigate the fact that we

must acquire all our concepts from sense, as Aristotle says at the end of III-8. His self-active nature became for Kant just a passive “manifold” that needs to be organized by our logical connectives. The whole sensed world is rendered as if it were inanimate, rather than chiefly life processes that go on in their environment.

94. On γνωρίζειν and φρονεῖν

The word γνωρίζει is used in two places near the start:

427a.21 Τὸν ἀμφοτέροις γὰρ τούτοις κρίνει τι ἡ ψυχὴ καὶ γνωρίζει τῶν ὄντων,

427b.5 τοῦτο γὰρ ἐναντίον τῷ τὸ ὅμοιον τῷ ὁμοίῳ γνωρίζειν.

γνωρίζειν covers the very general meaning of “apprehending” or “taking in” without specifying just how it is done. For example: τῇ κοινῇ ὁρῶν κινούμενον γνωρίζει ὅτι πολέμιος (III-7 431b6). Also:

τούτων δὲ οὐκ ἔστιν ὀρισμός, ἀλλὰ μετὰ νοήσεως ἢ αἰσθήσεως γνωρίζονται (Meta 1036a.6).

Of particulars there is no definition; we apprehend (gnorizein) them by noesis and sensing.

We appreciate something presented, however it may have been obtained. The word is usually translated “cognize” or “recognize.” No just-right word exists in English.

From its context here we can see that γνωρίζειν, the mere apprehension, can include φρονεῖν whereas krinei excludes it (SEE NEXT ENDNOTE), because φρονεῖν does not do any original discriminating, but obtains what is represented from sense and noein, as we shall see later. Aristotle thereby bridges to the quote on phorein from his predecessors.

The word gnorizein can be characterized in contrast to episteme: Aristotle says that although particulars “don’t have definitions, we know (γνωρίζονται.) them by **understanding** (meta noesews) and sensing (τούτεν δὲ οὐκ ἔστιν ὀρισμός, ἀλλὰ μετὰ νοήσεως ἢ αἰσθήσεως γνωρίζονται., Meta VII-10,1036a6). We **know** (gnwrizontai) each, but the word for “know” is not “episteme” which concerns only what cannot be otherwise.

95. On Discriminating (Krinein)

Aristotle uses “discriminate” to mean **both** to differentiate from other things, and **thereby** to bring in front of you. As we learned in the last chapter, for Aristotle what is presented before us is always also discriminated-from other possible kinds of presentations

Imagination is not a discriminating “krinein” because it does not create a presentation of its own, but rather gets it from sense. Let me show that this is what Aristotle says.

At 428a1 Aristotle tells us explicitly what “krinein” includes. “Now if imagination is that in virtue of which we say that an image occurs to us, . . . is it a potentiality or disposition (hexis) in virtue of which we **discriminate** (krinomen) and **are in truthing or falsing? Such are sensation, opinion, knowledge, and nous**”

Phronein is not listed as a discriminating even though we are surely in truthing or falsing with it. It is not listed because like imagination what it presents comes from another faculty. This shows:

We cannot split between “discriminating” and “truthing and falsing.” In the above passage. We might have been tempted to do this, if imagination were a krinein, as if it were a different fact that we are neither in truthing nor falsing in it, since it doesn’t involve premising (hupolepsis). But then how can $\phi\rho\nu\epsilon\acute{\iota}\nu$ be omitted from the kinds of krinein, since we certainly err in it. This is because like imagination, phronein does not form its own presented object.

Imagination give us a picture, so it might seem to be a discriminating power or habitus.

Concerning krinein and truth and falsity, see next ENDNOTE ON THE CLASSIFICATIONS.

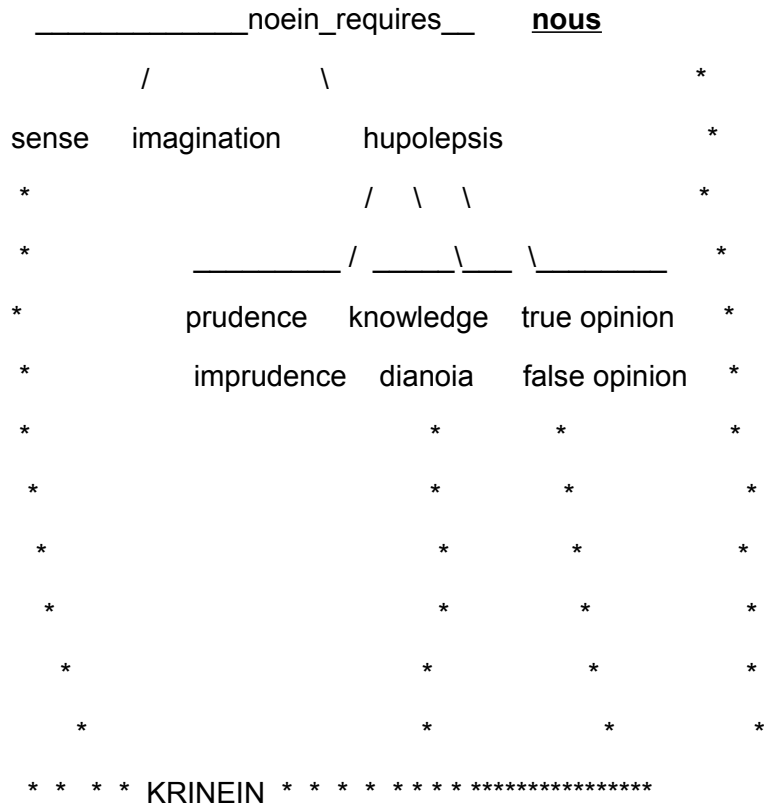
Since imagination is not a discriminating, Aristotle owes us an explanation of how the image does come about. He tells us at the end of the chapter (and in Mem).

Some of the kinds listed under krinein were earlier said to have a right and a not-right mode. Imagination does not. Imagination does not discriminate, therefore it has no false discriminations of its own. It is not true or false by itself, rather, it is false if what is presented is not present but the person believes that it is.

Surprising and well worth noticing is how little originality Aristotle grants to imagination. SEE ENDNOTE 100 ON COMPARING THE ROLE OF IMAGINATION IN ARISTOTLE AND IN MODERN PHILOSOPHY

96. On Aristotle's Classifications

Nous is added for the first time (under krinein). Nous discriminates single ideas, understood, without combinations or assertions. So it is never false (III-6) because it does not premise. It contains no propositions. It involves **no hupolepsis**. (We notice that it was not included under hupolepsis, above.)



Nous cannot be done in a wrong way. It involves no hupolepsis (see III-4-8). It has no wrong form. Nous activates the lower forms of thinking (noein).

Noein, when it can be **both right or wrong** (27b9-11), is dianoeisthai (dianoia).

Dianoia can be mistaken because it combines (συμπλοκή, *Meta* 1027b.29-30). SEE ENDNOTE 22, 33.

Noein requires hupolepsis, but there are other kinds of hupolepsis.

“Knowledge” is of unchanging essential forms that have become forms of the soul which it can enact within the soul. It is knowledge when we know the essential being of each thing. ἐπιστήμη τε γὰρ ἐκάστου ἔστιν ὅταν τὸ τί ἦν ἐκείνω εἶναι γινώμεν, (*Metaphysics* VII-6, 1031b.6)

Error // falsity: They are different: **Falsity** (pseudos) does **not** necessarily involve **error** (apate): Imagination is “mostly false” but since we need not premise that what we imagine is so, we need not be in error. (442b8)

Discriminating (krinein) does not include imagination or prudence (phronein) because what appears in them comes from something else. Imagination has only what remains from prior sensation. Imagination is a pathos (a being affected) of the ultimate organ, which he also calls the “common sense organ,” the koine (450a10). Similarly, prudence (phronein) gets its discriminations and premises from other faculties (III-10, 434a18).

Krinein includes what can be false, as we can see in the case of the common sensibles which are certainly “discriminated,” and are sometimes false.

Krinein includes what can be always true, as nous and the special senses are, since neither involves hupolepsis.

Krinein can include what is always true also in the case of a right process, as knowledge is, since the wrong process is not called “knowledge” but its opposite.

Animals can make mistakes without having the thinking capacity, as we can notice (425b4) where translators say “seeing that it is yellow one might “think” it bile, the Greek word is oietai; it does not mean “think.” It is used as “we take it as” bile. Aristotle is using a word he can apply to animals. But notice that this is a mistake **of incidental sensing**. If we are **not** sensing the object, we can make a similar mistake by imagination, but mistakes by seeing and incidentally taking are mistakes **of sense**. We seem to **sense** something we do not in fact sense. With Aristotle we cannot attribute this to imagining the bile or the bitter while seeing the yellow. We might **also** have an image of the bitter from the past, but we are incidentally **sensing** both the bitter and (that it is) bile.

Dianoia and opinion both involve logos (27b15, 27b33), (account, argument, proper proportions). In both the process can be right or not right.

97. On Ants, Bees, and Grubs (428a5-428a11)

Everywhere except in this chapter Aristotle affirms that **all** animals have imagination. Therefore this passage about the ants, bees, and grubs has puzzled commentators down through the centuries. Albertus Magnus in his Commentary insisted that the translator made a mistake (cited in Robert Pasnau's translation of Aquinas' Commentary).

In his commentary, Aquinas refers us to III-11. The animals discussed there have "indeterminate imagination" (ἀορίστωτος) because they have only one sense, the sense of touch. They are rooted to one spot and do not travel. This cannot apply to ants, bees, and grubs.⁴

Hamlyn rightly thinks it might concern some kind of distinction between two kinds of imagination. But he refers to Aristotle's later distinction between "sensuous" and "calculative imagination." Aristotle says that only humans have the latter.

Many current commentators want to alter the text. Torstrik wants to apply it only to worms, deleting ants and bees. Busse thinks the sentence is a later addition. Sacks blames the way Ross "reconstructed the text." But this wish to eliminate what is puzzling from the text would not resolve the problem because a little later in the chapter Aristotle twice more indicates that not all animals have "imagination" I don't know why no commentator seems disturbed by these statements which come just a little after our passage, but I admit that I also noticed them only after I had noticed the explanation I will present below. For now I wish to use these statements as evidence that one need not alter our passage:

No beast has belief, but **many** have imagination (428a.21).

τῶν δὲ θηρίων οὐθενὶ ὑπάρχει πίστις, φαντασία δὲ πολλοῖς.

and

Some beasts have imagination, none have logos (428a.24).

τῶν δὲ θηρίων ἐνίοις φαντασία μὲν ὑπάρχει, λόγος δ' οὐ.

4 Aquinas in his Commentary on III-3 refers us to III-11. There he does say that there is a kind of imagination which occurs only during sensing, involves pleasure and pain, and "does not involve retaining a distinct image," but he attributes this kind only to "imperfect" animals, those that have only one sense and do not travel. This leaves ants and bees only as a puzzling exception since they do travel. Also in the opening pages of his Commentary on the *Metaphysics* concerning the phrase "Now in some animals" (980a.28), Aquinas is mistaken when he says that all perfect animals, since they travel, must have memory images.

Since one would have to change Aristotle's text in these two places as well, no purpose is served by trying to alter our passage. The question concerns the whole chapter.

In the chapter Aristotle does not bring up imagination until 427b15. At 428a2 just before the passage on ants, bees, and grubs he says:

"If we speak of "imagination" as that by which an image occurs to us..."

εἰ δὴ ἐστὶν ἡ φαντασία καθ' ἣν λέγομεν φάντασμα τι ἡμῖν γίνεσθαι

He contrasts this with speaking in a metaphorical sense of the word "imagination," but he is clearly defining his use of the word here. The word "imagination" here in III-3 means having an image presented in front of us.

If that is so, then what Aristotle means by "imagination" in II-2 does not require having an image since he says there that all animals have imagination. He defines animals by the capacity for sense-perception, and then says: "and if sense-perception, then also imagination and desire (εἰ δ' αἰσθησιν, καὶ φαντασίαν καὶ ὄρεξιν 413b.22). I explained there that imagination (of more pleasure or less pain) functions to lead from sensation to desire (and thereby to locomotion). Now I will continue the argument concerning images, memory, and time.

Near the end of our chapter (from 428b11 on) Aristotle gives what has usually been considered the definition of all imagination, the continuation of the sense-motion causing the persistence of sense-percepts. But we could always have known that this kind of "imagination" is possible **only for some animals**, since it is well known that Aristotle says that sensations persist only in some animals, and that he calls this "memory." The last chapter of the *Posterior Analytics* and the first chapter of the *Metaphysics* are among the most often quoted.

"... sense-perception. All animals have it, but **in some** the percept (αἰσθημάτος) **persists**, while **in others it does not** (*Post. Anal.* II-19, 99b.37).

"From sensation **memory** is produced **in some** [animals] but **not in others** (*Meta* I-1, 980a27).

Quite apart from ants, bees, and grubs, the **persistence** of sense-motion should never have been taken to define all kinds of "imagination," since it was known that percepts **persist** only in some animals. If having images is defined as the persistence of percepts, and percepts persist only in some animals, then only some can have images.

Images are a continuation of sense-**motion**. Where has Aristotle told us that the activity of sensing involves a motion? He did say that a motion from the medium reaches the organs

and is proportioned there by the sense. In III-1 he told us that the five senses join, and in III-7 he says that **the motions** from the five senses continue to one organ. He doesn't discuss the motions as such:

“Just as the air makes the pupil such and such, and this in turn something else, and the organ of hearing likewise, the last in the series is one thing, (τὸ δὲ ἔσχατον ἓν,) and a single mean (καὶ μία μεσότης,) 431a16-20.)

Where will Aristotle discuss the sensing motion(s)? The next endnote (#98) will explain Aristotle's reasons why he never discusses the internal motions in the *De Anima* but always only in other books. The continuing motion involved in having images is considered in his separate treatise on *Memory and Recollection*. There we see immediately that the “persistence” of sense-motion required for images is indeed the persistence which Aristotle calls “memory” in *PA* II-19 and in *Meta* I -1 and attributes only to some animals. He says explicitly that all images are essentially memories:

Hence memory is found in **some** other animals, not only in man (*Mem* 450a.16).

διὸ καὶ ἑτέροις τισὶν ὑπάρχει τῶν ζῴων, καὶ οὐ μόνον ἀνθρώποις
“It is obvious, then, that memory belongs to that part of the soul to which imagination belongs; **all imaginables are essentially memories**” (450a22--b1). Τίνος μὲν οὖν τῶν τῆς ψυχῆς ἐστὶ μνήμη, φανερόν, ὅτι οὐδὲρ καὶ ἡ φαντασία· καὶ ἐστὶ **μνημονεύει** καθ' αὐτὰ μὲν ὅσα ἐστὶ φανταστᾶ.

The word “*mnemoneuei*” means memories, i.e., **what** is remembered, memory-images.

But it is not Aristotle's way to explain a function from the material side. Rather, the function determines what matter is required for the function. He does not say that images belong to memory, rather that “memory belongs to that part of the soul to which imagination belongs.” And, indeed we have seen that the function of imagination is broader than the having of images.

Aristotle says that memories involve a sense of time.

“Memory [refers to] what is past. All memory implies a lapse of time.

Hence only those animals that sense time can remember.” (*Mem* 449b.29)

ὥσθ' ὅσα χρόνου αἰσθάνεται, ταῦτα μόνον τῶν ζῴων μνημονεύει

Time, for Aristotle, comes from motion and exists only as a comparing of motions. (But see ENDNOTE 100 for some of the many other statements Aristotle makes about time.) Because time is determined only from activity or motion, therefore Aristotle discusses the perception of

time in *Mem* along with the motion that constitutes memory. Motions are not activities and so do not properly belong in the *De Anima* (SEE NEXT ENDNOTE 99).

In *Mem II* Aristotle shows that time is sensed along with how we measure motion and distance. But notice: Time is not a common sensible. The perception of time is not a parameter of a present sensed thing, but rather the sense for an elapsed time span. It comes whenever a memory image moves to us from the organ in which it is engrammed.

Since all images are essentially memories, the animals that have images recognize that what seems presented in front of them is not actually present. To see this one needs to recognize the role played by time in the first part of our sentence. Aristotle leads up to the statement about the insects by saying:

“... as in dreams... Secondly **perception is always present (paresti)**, but not imagination, but if they were the same in act (*energeia*), it would be possible for all beasts to have ...” εἶτα αἴσθησις μὲν ἀεὶ **παύρεστι**, φαντασία δ' οὐ. εἰ δὲ τῆ ἐνεργείᾳ τὸ αὐτό, πᾶσιν ἂν ἐνδέχοιτο τοῖς θηρίοις . . . (428a.8)

The meaning of “present” (*paresti*) could certainly be “present in the animals” (as Hamlyn thinks), but that would make the passage redundant. The statement would deny imagination to animals from the start, rather than saying why not. The word “*paresti*” cannot mean something “presented” before us, since images do present something before us. But it can certainly mean that in the case of an image no thing is actually present there. (Compare *παρίστατο* at *Meta* 1009b18.) Reading it in this way also explains Aristotle’s train of thought, since the statement follows immediately on his mention of dreams, since in dreams what is imaged is not present. With an image there is usually no thing **present**. I think we can read the sentence as saying :

“... as in dreams... Secondly, **a perception is always [of something] present (paresti)**, but not imagination ...”

Now we understand that in his compressed way Aristotle did make reference to the sense of time which images involve and require. Images do not involve some thing being there, because they come from the past.

Later in the *De Anima* Aristotle says that images can be combined so as to picture possibilities that have not happened (III-7, 431b6 and III-11, 434a9). Combinations can concern future events, rather than only the past. However, it is clear that an animal that has an image is

able to recognize that what is shown is not present. Such an animal distinguishes “present before it” from “present in present time.”

So we recognize that what has been considered Aristotle’s definition of “imagination” as sense-remains defines only one kind of “imagination,” and applies only to some animals, those that have memory.

In summary, there are at least six indications that having images -- the kind of “imagination” discussed in this chapter -- is not the only kind of imagination.

- 1 Aristotle says “If we mean by “imagination” having images ...” (428a2).
- 2 Ants, bees, and grub worms do not have images, but all animals have imagination
- 3 “No beast has belief, but **many** have imagination” (428a.21).
- 4 “**Some** beasts have imagination ...” (428a.24).
- 5 Images are sense-perceptions that “persist,” and Meta I-1 and PA II-19 make clear that percepts persist only in some animals. There he calls this “memory.”
- 6 In *Mem* he explains that images are memories and bring with them the sense for time.

Returning now to the kind of imagination Aristotle infers in II-2: “and if sense-perception, then also imagination and desire (εἰ δ’ αἴσθησιν, καὶ φαντασίαν καὶ ὄρεξιν, 413b.22), we see that imagination is a middle term that leads from sense to desire. Aristotle then provides two other middle terms between sense and desire, in order to show why sense involves imagination and desire: “**For** where there is sense-perception, there is **also both pain and pleasure**, and if these, there is of necessity also wanting (ἐπιθυμία)” (413b22-24). And, for Aristotle, wanting is one kind of desire (ἐπιθυμία ὄρεξις τίς ἐστίν. 433 a 25).

So Aristotle is explicit about the function of this kind of “imagination” which does not involve images. It links sensing to wanting.

Aristotle does not say more here, but we can elaborate somewhat. For Aristotle, when a sensation is painful, its pain is not a second event, not another activity in addition to sensing. Rather, it is the sensation itself which is also the aversive quality, and that quality also involves the possibility and wish for less of it. Similarly, pleasure is a sensation which inherently involves the possibility and wish for more.

Being guided to move by the possibility of less or more of a sensation is a kind of

Book III, Endnote 98. On Why Memory Is Excluded from the De Anima. The Dividing Line for Inclusion: Function Versus Motion; Why Memory Is a Motion.

imagination that comes necessarily along with pleasure and pain. It does not involve having a picture of the preferred condition. Of course insects have this kind of imagination. The argument that I just cited comes in II-2 where Aristotle is speaking of an insect. He has cut it in half and observes that each half **moves** away. He concludes: "Each of the parts has sense-perception and locomotion, and if sense perception then also imagination and desire" (413b20).

In III-10 Aristotle again relates desire and movement in all animals. There is no desire without imagination: He says: "in so far as the animal is capable of desire, it is capable of moving itself, and **it is not capable of desire without imagination** (433b29). So it is clear again here, that imagination is a link without which there is no desire and hence no locomotion.

Of course the bees, ants, and worms can move. They also sense when something else moves, quite without having images. What they do not have is an image presented before them. What they do have are sensations some of which are painful which inherently involves the possibility and wish to move away. Pleasant sensations inherently involve imagining and wanting to move toward their source. Aristotle posits a kind of imagination implied in the very nature of sensation, a kind that does not involve persistence of percepts, i.e., memory images.

We have now solved the problem about the ants, bees, and grubs, but we can go much further if we try to understand why, according to Aristotle, only some animals have images, and how images come about. What has seemed like a puzzling little wrinkle will force a reinterpretation of the account of imagination in the chapter (from 428b11 on), and of the role of images.

Important implications will appear if we ask why memory and its link to imagination is not covered within the De Anima. SEE NEXT ENDNOTE 98.

What we said here also has major implications for Aristotle's view of the role of imagination in cognition. SEE ENDNOTE 100.

98. On Why Memory Is Excluded from the De Anima. The Dividing Line for Inclusion: Function Versus Motion; Why Memory Is a Motion.

My comment here continues from the previous ENDNOTE.

We are led further, if we ask: Why is memory and the fact that images are memories not

discussed in the *De Anima*? Why for Aristotle does memory have to be discussed in one of his separate treatises on soul-and-body? The usual answer seems true but not sufficient. It is true that Aristotle thinks of memory as a property of the bodily organ that retains sense impressions. But, all images are made of memories. Why then is imagination included in the *De Anima* while memory is excluded?

“There is no memory ... without an image. ἡ δὲ μνήμη . . . οὐκ ἄνευ φαντάσματός ἐστιν, (450a12).

Conversely:

All imaginables are essentially memories.” μνημονευτὰ καθ' αὐτὰ μὲν ὅσα ἐστί φανταστᾶ (450b1).

Mnemoneuta are what we remember, the memory-images.

Since all memories are images and vice versa, the difference lies in how they are considered. I will try to show that the function of imagination is wider than that of memory-images. Actual images are memories. As we saw in the previous ENDNOTE, they consist of internal bodily motions. I will then argue that this function/motion distinction is the dividing line that determines what Aristotle included in the *De Anima*.

As we saw in the previous ENDNOTE, the **function** of imagination is wider than the having of actual images presented before one. The function of imagination provides having the possibility of something other than what is being perceived. All animals have this, some only because painful sensations inherently involve the desire for a state in which they would be gone, whereas pleasurable sensations inherently involve the desire of having more of them, which then leads to desire and motion toward or away from what is being sensed. But the *De Anima* also includes images insofar as they provide the **function** of imagination, although without discussing the memory-motion as such. Within the *De Anima* Aristotle says that the function he is discussing is or includes a motion, but then he stops. For him a function is not fully explained by the material. Rather, the function primarily explains what the material components “must be,” if the function is to be provided. Therefore Aristotle is consistent when he includes the function of imagination (including images) in the *De Anima*, while any further discussion the motion is placed in one of his treatises on the soul-and-body.

The dividing line:

To see why the memory aspect of images is excluded, let us try to understand Aristotle's dividing line in other cases. The question affects our understanding of the whole book. For Aristotle the soul consists of “the principles” of all of the life sciences. We have to ask what is

meant exactly by “principles” in our case here. The principles are activities and powers which are also (inclusively) called “functions” (*erga*). We have to bring it home to ourselves why activities, powers, or functions can have a lot said about them, as such, without the bodily motions they determine. We want to see how the functions can constitute a whole book in their own right. I will try to show first in other cases what Aristotle includes within his dividing line between the principles and all the rest.

In our chapter (428b30) Aristotle defines imagery as “a motion taking place as a result of sense-perception in act (*energeia*).” Then he does not further identify this motion.

Very much as he does here, Aristotle tells us in III-10 that “desire is itself **a kind of motion**” – – and does not go on to tell us just what motion he means. One must search his soul-and-body works to find this motion. (See III-10 ENDNOTE 146 ON DESIRE IS AN INTERNAL MOTION.) We recognize that Aristotle is following the same methodological distinction there too. He considers the function of desire. He says that desire “is” a motion, but does not continue even far enough to identify the motion to which he refers.

Similarly, in III-9, 10, and 11 Aristotle discusses locomotion as the ultimate enacting of the activity of sensation, but only hints at the ball joint by which the motion is generated. A different book will take it up.

Similarly, in II-7 he tells us that color “lies upon what **has** in it the cause of its visibility” but only in *De Sensu* does he tell us that he means the transparent which he says inheres also inside all bodies and therefore at their limits, so that this bodily transparency can “have” its hexis, the light (see ENDNOTES 55 and 58).

Similarly, in III-7, Aristotle tells us that the five senses “travel” to one common “mean” (431a17). So we see that the five senses involve five kinds of motion, but just as in our chapter, Aristotle does not discuss the five kinds of motion. He barely implies that they are motions. The sentence in which he does so has puzzled many commentators. But we see the same methodological dividing line again. How these motions make green rather than red is reserved for the separate discussion in *De Sensu* (See also ENDNOTES 55-58).

Aristotle tells us his dividing line, for example in *De Sensu*. He begins his discussion of the sense organs by saying that the *De Anima* has already covered their **function** (*ergon*).

καθόλου μὲν εἴρηται ἐν τοῖς περὶ ψυχῆς, τί τὸ ἔργον αὐτῶν καὶ τί τὸ ἐνεργεῖν καθ' ἕκαστον τῶν αἰσθητηρίων (439a9). Now he will take up each organ and each kind of sense-motion.

Let us take Aristotle's distinction between function and motion here as our cue for the dividing line between imagination which is considered in the *De Anima*, and memory which is not. Aristotle regularly omits the motions from the *De Anima* and considers them in a separate (soul-and-body) context, in this case his treatise *Memory and Recollection*.

Let us enter into this treatise, to find out exactly how and why Aristotle says that memory is a motion.

Why is memory considered a motion?

a) In what way is a picture a motion? For Aristotle a sensation is a motion in the sense organs. The five kinds of such motions – joined – constitute the motion of which the continuation is imagery (428b10-16). Therefore images are motions in the same way that sensations are motions. But whereas **a sensation** is a motion, **sensing** is **not** a motion but an *energeia* (although sensing involves motions).

The five kinds of sense-motion come from the **activity** of sensing. The sensing gives the proportions (color, pitch, etc.) to the motion which come from the object and the medium. The sensing does not arise in a purely mechanical way directly from the external motion of the medium, as in a Western kind of explanation. If it did, there would be little to say about the principle, i.e., about activity. As we saw especially in II-1 and II-4, Aristotle's concept of "activity" (*energeia*) is central to his whole approach. An activity is always fully ongoing, complete in any moment. An activity does not change, although it may be the organizing and enacting of many changes. For example, digestion is always fully ongoing, but it is an organizing and enacting of a whole series of bodily changes. Sensing is an activity, a functioning, receiving externally originating motions and proportioning them to produce the five sense motions and their joining. In contrast, memory is **only** a motion.

b) Another reason is Aristotle explanation of memory "impressions" as the product of a motion. It is the continuation of the joint sense **motion** which impresses the percept upon the organ. ("Memory (is) a kind of picture **impressed by the motion** of sensing." 450a32)

Aristotle says that the cognition (*gnosis*) of time and images belongs to the *prote aisthetikw*, but from the fact that images are impresses (i.e., material) it is clear that they come from the common sense organ. Perceiving time is not a direct sensing by the common sense.

c) The return of the image, its coming back to us, is also a motion. Aristotle's view that the coming of an image is a motion is especially clear in the case of recollection. Like other

motions it has this characteristic: Once started, the motion continues. Memory images keep on coming even when we no longer want them (453a30).

d) Another characteristic of motion is its path. Aristotle says that if the events we recall happened in the order ABCDEFG, we remember F more easily from D than from A. The orderly path shows the motion character of how memories come. We find it also when we are actually traveling: As we approach a place we have not visited for many years, we suddenly remember the name of the town, perhaps also the names of the next two towns.

Aristotle is thinking of the memory training which was common in ancient times. Using a series of familiar places, one attached the items to be remembered, one at each place. Then each place would bring the next place to mind, so that the attached items would all be remembered. Aristotle alludes to this method in our chapter at 427b20. The Romans used the well known entrances to the Colosseum.

We have now seen why Aristotle thinks that memory and recollection are motions. Is there not also a memory *function* of the soul as such?

Could one argue against Aristotle that memory is **not only** a motion, but constitutes soul-functions of its own? Let us look at the roles of memory that Aristotle discusses in *Mem*, to see why he doesn't consider them functions, powers, or activities.

Memory is crucial in the development from sense through memory to what he calls "experience," and then to universals and knowledge (*Meta* I-1, 980a27, *Post. Anal.* II-19, 99b.37). In *Mem* Aristotle reiterates that there is no thinking (noein) without images. He said it also in *De Anima* III-7, (431a16-20). The role of memory in thinking is a role of images as indirect presentations of the thought-objects. Why isn't that role of memory an activity or power of the soul as such? Many memories constitute one experience, he says. Why does Aristotle consider memory only as a bodily ingredient for thinking, rather than itself a function? What if we could never remember what we thought a few months or moments ago? But Aristotle argues that thoughts are not **in themselves** objects of memory. Only images are inherently capable of being memory-impressions. The thoughts-in-images are "**only incidentally**" objects of memory, because the images are objects of memory (450a14). Aristotle says explicitly here that thinking cannot be a remembering. We can remember an earlier thought-in-image, but **a thought-object cannot be impressed on a bodily organ**. Only the image can be impressed. We can remember word-sounds and pictures but not the understanding. For example, the

image of a tree or of water can be an imprint, but not how we understand it as an instance of nutrizing which defines plants.

Could recollection have been considered as a function of the soul as such, rather than as just “a motion originating from the soul? (“... recollection starting from the soul and terminating with the movements, actual or residual, in the sense organs” I-4, 408b15-18). We have just seen his reasons for considering recollection motion, but of course recollection is not **just** a motion. There is an activity involved in deciding what to recollect, and what use to make of the recollection, but for Aristotle the activity that determines the use of recollecting is a kind of thinking (“syllogismos,” 453a10).

Similarly, diagramming (“diagraphein,” *Mem*, 450a1) is an important activity. By diagramming we estimate distances and the length of elapsed time. The proportional relations of the parts or intervals of our imagined picture corresponds to the proportions of the parts or intervals outside. Could this estimating not be considered an activity and function of the soul as such? Aristotle says that what he is showing here about diagrams applies to the function of images generally in thinking (450a1). So the function of diagrams is a function of images. One can ask: Since diagrams show something about the function of images in thinking, why does Aristotle not discuss diagrams in the *De Anima* rather than only here in connection with the motion of memory? Again the answer seems to be that diagramming is a comparison of motions, an outer and inner motion.

“For one thinks of things that are large and at a distance ... by a proportional motion, for there are similar figures and motions...” (Mem 452b.9-13)

νοεῖ γὰρ τὰ μεγάλα καὶ πόρρω . . . τῇ ἀνάλογον κινήσει· ἔστι γὰρ ἐν αὐτῇ τὰ ὅμοια σχήματα καὶ κινήσεις.

These diagrams are again a case of motions which Aristotle does not include in the *De Anima*. They are inner **motions** which are analogous to outer motions, by which we estimate the intervals of distance and time that motions create. (Aristotle denies that space and time points and intervals exist apart from motion.)

Let us now look at one more instance of the dividing line. Which organ is the one on which sense remains are impressed? That body-part is the heart, as the physiological books make clear (439a3, 456a3, 647a31, 781a23). But in the *De Anima* he does not name the heart; rather he defines this organ entirely by its functions. Sometimes he calls it the “last” or “ultimate” organ. When he argues for the necessity of one organ where the five senses join together, he calls it the “common organ.” He defines it as a material organ, but does not tell us

that it is the heart, not even in III-13 (435b15-19) where he says that the destruction of the touch organ kills the animal. When he speaks of its function, he need not say which body part it is.

Aristotle can maintain the functions apart from the motions and body parts because the determining factors are activities. We have noticed how fundamental the concept of “energeia” is for him throughout. The Western life sciences lack the concept of a self-organizing activity (especially a reflexive activity like sensing and understanding) because they derive no basic conceptual models of nature from zoology and psychology. In Aristotle’s concept, life activities are what exists independently. An activity can exist whether it organizes motions and material – or not. Most of the activities in the *De Anima* do organize motions and body parts, but much can be known about their functions before one reaches the point where one would need to study the motions and body parts for the sake of knowing them in their own right.

In making the line so sharp, sometimes stopping with one sentence, Aristotle imposes a lot of work on his readers. But his dividing line is successful. The conceptual strategies and functional concepts in the *De Anima* are still useful today. He divided them off from his frequently mistaken physiology in other books. He was right about a basic difference between the two. We see it when we realize that we are no longer so interested in most of what he segregated in his physiological books. For example, in the *De Anima* he derived the brain by its functions. His false location of these functions as being in the heart is not so interesting to us. But we are still interested in the kind of concepts and arguments he used in his arguments about the five senses joining. It is an interesting overall strategy to define functions as such.

99. On Moving a Phrase from 428b24

Those who accept the displacement of the phrase from Aristotle’s third to his second item, have to deal with the fact that there are now two occurrences the word “accidents” “συμβέβηκε.” Hamlyn drops one “συμβέβηκε.” Smith keeps both instances of the word, but finds no way to give the second any added meaning. Hett refuses to translate the clause altogether. I think the phrase could not have been originally written in the place to which it has been moved.

I have not studied the manuscripts and do not know what reason Bywater gave for moving the phrase up a few lines. Perhaps he was bothered by Aristotle’s referring to the commons as “incidental,” since II-6 tells us that the commons are sensed καθ’ αὐτό. If this was

the difficulty, we can recall that in III-1 Aristotle said that the commons are **also** sensed incidentally by each sense (because the other senses have them). But this use of *symbebekos* refers to the indirect mode of sensing, not to the relation of the commons to the thing. But I think Aristotle is using the word in his usual nontechnical way. Very simply, I think that where the phrase occurs originally it says that motion and magnitude are attributes (*συμβέβηκε*) of the thing.

Throughout Aristotle's works the word *συμβέβηκε* means non-essential "attributes," i.e., "accidents." Whether the thing is just now moving or not does not define what the thing is. This Greek word with its single meaning is translated as either "accidental" or "incidental." The moved phrase appears where Aristotle is relating the three as they are **in the things**. He speaks about **the commons** (motion, etc.) as resulting **from the things** (which move, e.g., the son of Diareas walking, or bile), and it is **to these** things that **the specials** (white, bitter) belong. So motion and magnitude "are accidents" (i.e., not essential defining attributes) of the things.

It is important to keep in mind that the commons are accidents of the things, because from Western science we are accustomed to consider them as defining what a thing essentially ("really") is. We agree that the color doesn't define a squirrel as a squirrel, but we tend to think of it as a movable structure of atoms in space. For Aristotle the commons are not what a thing essentially is. We can easily understand the passage where it was, but even if we could not, in fact **especially if we cannot explain it**, it needs to be left in place. What is hard to grasp may be a way of thinking that would be new to readers. I don't know Bywater's reason, but if he moved the passage because he could not understand it where it was, then I must say that this was not a good reason. Although now a widespread attitude, I think it is absurd to want to change a manuscript that has been preserved for twenty-five centuries, just because one reader doesn't grasp something. If we are going to cut-and-paste away every sentence the connection of which we cannot immediately grasp, ancient manuscripts will soon have nothing to offer that a modern reader does not already assume.

100. On The Limited Role of Imagination for Aristotle Compared to Modern Philosophy

In ENDNOTE 97, from the lack of images in insects we were led to Aristotle's view that images are memories and involve the perception of time (*Mem*). Then, in ENDNOTE 98 we were able to use the instance of memory to define the dividing line between what Aristotle includes in

the *De Anima* and what he excludes. Here I will argue that Aristotle strongly limits the role of the imagination and that this limitation is inherent in “Aristotelian realism” which differs greatly from the subjectivism and constructivism of modern Western thought. His “realism” is best understood in relation to the limits he places on the role of imagery.

For example, for Kant everything we experience through the five senses is arranged within logical and mathematical patterns in space and time by the “**productive** imagination.” Aristotle can sometimes seem to agree that we sense things within imagination, space, time, and mathematics, but this is not his view.

Aristotle seems to agree with Kant when he summarizes a section of the *Physics* by saying: “it is evident that every change and everything that moves is in time” (*Physics* IV-14, 222b30). (φανερὸν ὅτι πᾶσα μεταβολὴ καὶ ἅπαν τὸ κινούμενον ἐν χρόνῳ.) But a little later in the same chapter he argues that time does not exist. Motion exists. Time is only a “measure” of motion. “Time is a number.” There is time only if someone with a nous-soul does the measuring (223a26).

The reason everything appears in time is because imagery brings the sense of time, and Aristotle says that we don’t think without imagery: “. . . contemplating (*theôrein*) must be together (ἅμα) with an image; **for** images are like sense-presentations (αἰσθήματα) except that they are without matter. Aristotle also says that we think “**in**” the images. “That which can think (τὸ νοητικὸν), therefore, **thinks** (νοεῖ) the forms **in images** . . .” (III-7, 431b2) (τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ).

But thoughts are not equivalent to images. “. . . what distinguishes the first thought-presentations (πρῶτα νοήματα) from images? Surely neither these nor any other thought-presentations will **be** image-presentations (φαντάσματα), but they will not exist without image-presentations (φαντασμάτων)” (III-8, 432a8-14).

Similarly, Aristotle denies the existence of empty space. He says that the belief in empty space comes because when content is removed from a container, there **appears** (φαίνεται) to be a dimensional empty space (211b15, 212a11), but no such thing exists. (The air enters where the previous content was.) When the thing is gone, there is only the appearance of empty space.

For Aristotle time, empty space, and mathematical objects do not exist separately. More important and less well understood is Aristotle’s argument that the mathematical objects do not exist **in** the things either. (“Ὅτι μὲν τοίνυν ἔν γε τοῖς αἰσθητοῖς ἀδύνατον εἶναι (XIII-2, 1076a38). Neither are there numbers in sensible things. διὰ τὴ οὐδαμῶς ἐν τοῖς αἰσθητοῖς ὑπαρχόντων τὰ πάθη ὑπάρχει αὐτῶν ἐν τοῖς αἰσθητοῖς. (XIV-3, 1090b3). (See also *Meta* III-2, 998a7, and III-5, 1002a12.) Numbers and geometric figures enable us to “**measure**” existing things accurately, although there are no

figures, numbers, or units in the things.

In this precise way Aristotle gives mathematics a valid scientific status, but argues that they only measure and relate to existing things. **The mathematically-patterned objects must not be identified with the sensible existing things or imputed into them.**

Aristotle made a huge mistake when he didn't see much promise in Demokritus' science of things as geometric structures. On Aristotle's basis our modern science could not have developed. But we already have our vastly successful science. We risk nothing if we also think beyond its way of limiting itself to conceptual patterns of inanimate structures.

If the structures in space and time are not existing things for Aristotle, and if they are not even in existing things either, then **what are existing things?** When does Aristotle think he is dealing with an existing thing, and – it comes to the same question: **In just what way does sensing reach existing things whereas the images do not?**

Aristotle's whole philosophy requires that our **knowledge of existing things** must come from sense-perception. We have seen in the previous ten chapters how very much Aristotle derives from sensing, much more than modern philosophy attributes to sensing. (See especially III-1, my list at the start of III-2.)

In our chapter (428a1-5) Aristotle shows that imagination is not “one of those potentialities or dispositions in virtue of which we discriminate (*krinein*) and are truthing and falsing? Such are sensing, opinion, knowledge, and nous.” Imagination is not a source of anything.

Aristotle insists that knowledge comes entirely from sensation, not images, but why does that make a difference, considering that he also says that images have the same pictured content as sensation: “... imagination is held ... not to occur apart from sense-perception, ... but only ... of that of which there is perception ... [imagination] must be like perception” (428b10-14). It might seem that images cannot bring anything different than sense already brings. But we noted that images bring the sense of time (images are memories), whereas sensing is always in the present. This is one great difference between sense and imagery, and it will lead us to other differences.

Kant invites us to “imagine” that all objects are gone. We note that space and time are still there even without objects. So it is evident that we project space and time, and that any objects that can ever appear must appear within our imagined space and time. The objects we sense or conceptualize have to be “appearances” within imagined space and time. This is the source of modern subjectivism, idealism, and the current “constructivism.” Sense-perception is

reduced to momentary effects which are arranged and unified by the structures of imagination and thought.

In contrast, for Aristotle, while the images have the same **content** as sense has, the **sensing happens only with a present thing**, whereas an imagined thing need not be there, and is usually not there. While for Kant the fact that we can imagine space and time even without things shows that space and time are unavoidable parameters of any object that could possibly **appear**, for Aristotle the same fact leads to the opposite conclusion: **The parameters of appearance which images share with sensation cannot possibly distinguish an existing thing, since images can be before us without an existing thing.** Therefore the pictured content which images retain from sense cannot be the distinguishing characteristics of existing things.

We have to ask what it is in sensing which, for Aristotle, indicates that sensing reaches an existing thing, since **the content that is pictured** by sensing and images can occur without the thing. Before we can answer what indicates existing things, we have to recall that, for Aristotle, the pictured content of the five sensations does **not** exist as such in the things. What he says in this regard is often missed by commentators.

For Aristotle sensing is not a picturing of the thing. Sensing is a single activity with a thing, and always with a present existing thing. He says explicitly in II-5 (417b22-26) and in our chapter (428a.8) that sensing requires the occurring of a present particular existing thing. The key to understanding this is interaction. Aristotle is called a “realist” because he does not doubt that we live in midst of nature in the universe, and that our sensing is an activity with existing things. But he is not a “naïve realist” since he denies that existing things are as we picture them. Sensations are not copies, not representations. **Sense-forms are not forms of the thing; they are forms of the interactive activity.**

Because we exist in midst of existing things, Aristotle is sure that sensing always involves some existing **thing** which moves a medium that moves our sense-organs, but we can be mistaken “about what or where the thing is” (II-6). When we see red “there is red,” but the thing that causes the red might be a finger pressing on the eye (De Sensu, 437a24). He denies that our percepts exist in the thing. What we call “the sound **of bronze**” is the form **of the joint activity of thing and organ.** The sensing gives pitch-proportions to the vibrations of the air. Seeing red or green is the form **of the seeing-activity** which gives color-proportions to the light from the surface of the thing.

This view seems familiar to us but in modern science the thing that causes the sensing of red (whether flower or finger) is taken to be a mathematically patterned space-time structure. The light is taken as space-time vibration patterns. But for Aristotle the existing thing is **neither** the colors nor the vibration geometry presented in space-time images before us. So the question is: In what way are existing things reached in the sensing activity? How does sensing exceed the **content** that percepts and images present before us?

The activity of sensing exceeds the pictured content of percepts and images in at least three ways:

a) How can Aristotle be sure that sensing is in direct contact with a present existing thing? It is because we interact with things not only through percepts. The sensed things are also the things we pick up, the things we use. We eat some of them!

Although we have only the five sensations **directly**, it is vital to Aristotle's approach that we sense the existing things – – although indirectly. He says “colors, smells and sounds do not nourish” (II-3, 414b7). He defines the sense of touch not just in terms of the sensed qualities, but as “the sense for . . . dry and liquid and hot and cold **things**,” (II-3, 414b6). We sense the existing things that do nourish, and we eat them. **With the joint five senses the animals sense the present existing things with which they have their activities of feeding, mating, and motions of pursuit and avoidance.**

In Physics I-2 Aristotle says that it is obvious that there is nature. What we conclude about it may not be so. By “nature” he means things that act from themselves, not our constructions. What seems obvious to him is that we live among existing things. This may seem speculative to us. But modern science also involves something that has the role of what obviously exists. It comes with experiments. That is where we assume as Aristotle does, that we “obviously” interact with an independent nature. We build a machine and know with logical necessity how it will work, but then we still have to turn it on and test how it does work. Sometimes it actually works as we predicted. Then we can say after turning it on just what we said before we turned it on. Nevertheless, to us the statement of a prediction is obviously different from the same sentence if it states the result of an operation. Modern science depends on the interaction with “nature,” not only on our concepts. Very similarly, although not as a deliberate test, for Aristotle **the doing and the results** differentiate present interaction from imagining. For example:

He says: “**imagination is not the same as sensation.**” (*ἡ φαντασία οὐ ταὐτὸν τῇ αἰσθήσει.*) “... No one

who during the night thinks he is in Athens whereas he is really in Lybia, gets up to go to the Odeion” (the concert hall in Athens, *Meta* IV-5, 1010b1-11). Images involve a sense of the time from which they stem, and they are recognized as different from the presently-sensed things with which we act.

In our chapter Aristotle says: “In sensing something is always present” (paresti) (428a.8), but here “present” does not mean that it is at a point in a time sequence. Insects and other lower animals have no sense of time but they recognize a sensed thing as **present** because sensing is always of things that are present.

The English term “**incidental sensing**” (II-6) makes the sensed **things** sound less real than the direct sensations, but for Aristotle the fact that there is some existing thing is more real, even though you can be mistaken about what and where it is.

When see a moving white thing from a distance, the thing might be your friend coming down the road. You could be mistaken, but some existing thing is causing the moving white. Even when your friend is close, you sense only your five sensibles and motions **directly**, but through these you sense and live with your friend. Just as you do not eat colors and motions, so also you do not relate to colors and motions as a friend.

We can conclude that for Aristotle the activity of sensing always involves a present thing the existence of which exceeds what can be pictured before us.

b) Motion and continuity are another kind of existence that exceeds the modern space-time-image scheme. For Aristotle we sense them directly. His view is the reverse of defining motion as a comparison across a change in points of time and space. For Aristotle division requires a motion that starts and stops to create definite point-locations. Someone has to **put** a point on a line; only such a point divides it (III-6). Motion (and rest, shape, size, number, and one) are “common **sensibles**,” not cognitive space-time structures, and they are **attributes of** the existing “incidentally” sensed things (428b24). An insect can sense something moving. We animals sense motions whole and continuous (III-6), according to Aristotle. If we could not, if we had to unify points of space and time, Zeno would have been right.

Again in this instance, Kant and Aristotle agree on the facts about imagery but not on its role. They agree that a system of points cannot provide the relating, determining and unifying which such a system requires. **The great difference is that in the modern system the unifying activity is considered external to the system.** If one considers only pictured

contents, the continuity falls outside the system. If the things are taken to **be** the percepts and mathematical structures before us at space-time points, then the activity of relating the points (the “idealized observing”) must come to it from outside. For Aristotle, motion is directly sensed, even by a worm. Continuous motion is directly sensed within nature and does not need an external unity imposed on it.

c) Sensing involves **sensing that we sense** (III-2, 425b12). Understanding inherently understands itself. This reflexive turn exceeds any pictured content. By this “turn” the activities generate and indicate their own existence.

he who sees **perceives that he sees**, and he who hears that he hears, and he who walks that he walks, and in all other (activities) there is something which perceives that we are active, . . . **we understand that we understand . . . for perceiving and thinking is existence.**”

ὁ δ' ὁρῶν ὅτι οὐκ αἰσθάνεται καὶ ὁ ἀκούων ὅτι ἀκούει καὶ ὁ βαδίζων ὅτι βαδίζει, καὶ ἐπὶ τῶν ἄλλων ὁμοίως ἔστι τι τὸ αἰσθανόμενον ὅτι ἐνεργούμεν, . . . κἂν νοῶμεν, ὅτι νοοῦμεν, . . . τὸ γὰρ εἶναι ἢν αἰσθάνεσθαι ἢ νοεῖν, *Ethics* 1170a29-b1

The self-sensing and self-understanding activities are existences. And

“because to them [good people] existence is good and pleasant, for they are pleased at the overall-sense (συναισθανόμενοι) in them of what is intrinsically good . . . he [such a person] needs therefore to overall-sense (συναισθάνεσθαι) the existence of his loved one as well, and this will be realized in their living together and sharing in discussion and thought.” (*Ethics* 1170b3-13)

ὅτι τὸ εἶναι ἀγαθόν ἐστιν αὐτοῖς καὶ ἡδύ συναισθανόμενοι γὰρ τοῦ καθ' αὐτὸ ἀγαθοῦ ἡδονταί . . . συναισθάνεσθαι ἄρα δεῖ καὶ τοῦ φίλου ὅτι ἔστιν, τοῦτο δὲ γίνονται ἂν ἐν τῷ συζῆν καὶ κοινωνεῖν λόγων καὶ διανοίας·

In at least these three ways, – a) the interactive existence of incidentally sensed things, b) the priority of sensing continuity and motion over time and space, c) reflexive life activities, – Aristotle can speak about **the sensing of existing things** as different from what images can present.

Western skepticism compared to Aristotle’s kind of “skepticism:”

With the modern kind of skepticism we wonder about all our percepts and knowledge as a whole, whether they are all only a product of imagination. There seems to be **a single gulf** between us and something that exists independently. That overall question leads to Western subjectivism, Descartes, Berkeley, Kant, and Brentano’s need for a concept of “intentionality.”

With another kind of skepticism, – Aristotle’s kind, – one does not have the overall doubt about whether we live among existing things which we sense, eat, inhale, walk upon, talk to, and live with. Aristotle makes no single subject/object gulf. Rather, he makes **many gulfs**.

Aristotle lived in a time when skepticism and eristics were in fashion. **He assumes that nothing exists just as we picture or conceptualize it.** He makes **different** distinctions in the case of different kinds of knowledge and perception. But then, in what I might call a “reverse skepticism” he also saves them all.

For example, he distinguishes many more modes of sensing and knowing than any other philosopher, and finds a differently-limited legitimacy for each kind of sensing and knowing. The special objects of sense (the color, the sound) are not false, but they are not attributes of the thing. What we take to be the thing could be something else and somewhere else. We understand things only by means of conceptual universals that do not exist in the things. We measure things by numbers, lines and figures which don't exist in them either. Anything true or false is a synthetic combination which cannot characterize what exists (Meta VI-4). Only particulars exist, but particulars cannot be defined (Meta VII-10, 1036a2-9). Each kind of perception and knowledge he takes up has only some validity in some respects.

The difference between the two kinds of “skepticism” illuminates a deep-going fault line in our modern system of science, a fault line Aristotle can avoid. Galileo and Descartes created a physics of mathematical structures, but Descartes considered it “only hypothetical.” Hume developed a genuine doubt, and Kant built that doubt in as unavoidable because it is inherent in having objects **appear before us**.⁵ The single gulf must happen to a science that renders its objects exclusively in the space and time of imagination.

So we have to avoid saying vaguely that for Aristotle imagination “comes between

5 Kant had second thoughts when he made changes in the Second Edition of the *Critique of Pure Reason*. The only new section he wrote is a “Refutation of Idealism” in which he tries to counter the subjectivist reading which he knows he has invited. His major revision is to argue that nothing determinate in time can exist without something external that affects us; The imagination has to be considered something empirical and external (whose workings always remain unknown to us). Therefore, there is something external and empirical even if we are affected only by images. Something can be experienced in time only if a space-point is held constant, the change at that point is thereby in time. **Kant adds that the decision whether a given thing is imaginary or not has to be made on empirical grounds.** (See my “Time's Dependence on Space” in *Kant and Phenomenology*, Seebohm, T. M. and Kockelmans, J. J., eds., University Press of America, Washington, D.C., 1984.) Kant's addition has received very little attention. After Kant, Fichte and Hegel, most philosophers have simply accepted the problem of subjectivism in science, and a total gulf between nature and human affairs.

sensing and thinking,” as if this could be said of Aristotle in something like the way it can be said of modern philosophy. I think I have shown that it is rather their difference, their great contrast, the way Aristotle limits the role of the imagination so that sensing greatly exceeds it and does **not at all** happen within it.

101. On the Analogy between Understanding and Sensing.

Aristotle often analogizes sense and understanding (for example, in all of II-5 and at the start of *De Anima* III-8). Here he upholds the analogy about **receiving** a form, but not about **how** the receiving comes about. The difference is that the nous is unaffactable.

How can it be valid simply to apply to noein what was the case with sense? As we notice throughout, Aristotle frequently says “just as . . . so . . .). I call it “proportioning.”

But how does Aristotle avoid misconstruing a new topic by simply “applying” a model he has formulated in another area?

When Aristotle applies an analogy, we can see that he expects the new topic to be like the previous only in **some** respects. Then he usually specifies what is the same and what is different in the two topics, as he does here. And of course, even the analogous terms come to be specified in a new way in the new topic. He doesn’t just “apply” an analogy; he rolls it up to the new topic to bring out what is similar and what is different, and what the new topic requires.⁶

One could certainly point out that different models and analogies would have different results than Aristotle's.

Analogy is an interesting way to think about a new topic. You bring the concepts you worked out in other cases, but you don’t apply them like a cookie form. Rather, you hold the concepts next to the new topic, to bring out what fits and what doesn’t. **Of course this method**

6 See Wilfried Fiedler ANALOGIEMODELLE BEI ARISTOTLES, B.R. GRÜNER Amsterdam 1978 p. 287 about Aristotle’s analogies: “Sie dienen immer nur als heuristisches Prinzip zur Aufdeckung möglicher Strukturen ...Ihr tatsächliches Vorliegen muss erst aus der Sache erwiesen und erhärtet werden.”

They serve only as heuristic principle for the discovery of possible structures ... their factual presence must first be shown and confirmed from the thing.

assumes that you already have experience of the second topic, so that what fits and what doesn't can emerge for you.

Analogies can be used to mislead people who have no experience of the new topic. Then they cannot judge what applies to the new topic and what does not. **Concerning the use of analogies one needs to see the crucial role of familiarity with the new topic.**

In the analogy here Aristotle already knew a lot about nous including that it is unaffectable (I-4). The analogy leads him to pinpoint this difference and to rework the conceptual scheme which he brought from sensing.

102. On Megethos

When Aristotle speaks of “megethos” he means a three-dimensional **thing**, but **considered** just as dimensional. He can be confusing because he often considers one thing in several different ways. We tend to think either of the concrete material thing or just its dimensions as a figure in geometry, but Aristotle has the concept of a material thing considered just in terms of its dimensions, without considering what it is. A megethos is any extended thing.

For example, he says that a sense organ (say a nose) is a megethos. “For the instrument which perceives must **be a megethos**, while . . . what it is to be able to perceive (αἰσθητικῶ) and the sense (αἴσθησις) are surely not magnitudes but rather a certain potentiality of that thing.” II-12, 424a26). Clearly he means that a sense organ is a concrete material thing.

Another example: “It is generally agreed (dokei) that nothing has a separated (kechwrismenon) existence except magnitudes (II-8 432a3). Clearly he doesn't mean that nothing exists but mathematical. Mathematical objects do not exist separately. Aristotle uses “magnitudes” throughout to refer to separately existing sizable things, considered without further defining them.

A megethos is always three dimensional but he does also discuss two dimensions (a line) and one dimension (a point). These are mathematical. To exist on its own, a megethos has to have three dimensions, in which case it is a body: “A body is the only complete magnitude since it is the only one that is delimited in three directions.” (*De Caelo* I-1, 268a7). Just one or two dimensions does not delimit a body.

Of course, a body is not just its dimensions. The dimensions are merely its limits. It has limits only because it holds itself together and moves in one piece. For Aristotle the limits do not define a body, neither do its elements. Only its kind of motion does. Megethe exist separately but only because megethe are bodies, although considered just in terms of their limits.

Bodies are “prior” because bodies create their limits; limits don’t make bodies.

If what is last in the order of generation is prior in the order of substance, the body (τὸ σῶμα) will be prior to the plane and the line. . . more complete and whole **because it can become animate**. On the other hand, how could a line or a plane become animate? (Meta XIII, 1077a26)

εἰ οὖν τὸ τῆ γενέσει ὕστερον τῆ οὐσίας πρότερον, τὸ σῶμα πρότερον ἂν εἴη ἐπιπέδου καὶ μήκους· καὶ ταύτη καὶ τέ λειον καὶ ὄλον μάλλον, ὅτι εἴ μιν γίνεταί· γραμμὴ δὲ ἔμψυχος ἢ ἐπίπεδον πῶς ἂν εἴη;

A three dimensional thing **can** be alive. What it is as a living thing will determine its limits, not vice versa. For example, a nose is a megethos. But as a nose it has to be defined from the sensing, not just as its elements (cold and fluid), nor just as a megethos.

I am quite sure that Aristotle thought of a nose here, but he didn’t **say** a “nose.” I said it.

Considered just as a megethos it could be a stone, a clod of dried mud, a horse, an eye or a nose, any sizable thing.

All the contexts show that by “megethos” (magnitude, also translated “size”) Aristotle refers to a sensible sizable **thing**, not a mathematical object.

103. On Einai and Katholou,

Ordinary English has no way to say what Aristotle says, and no established words for his many distinctions concerning what exists, and in what respects we can know it. Different translations make opposite use of the same English words. It does not pay to ponder the English terms, since there are no real equivalents. Therefore we need to use some of them in Greek. Aristotle develops his own precise uses of the terms. Philosophers often enable certain words to have new meanings in new sentences that change many background assumptions. Therefore we can learn the meaning of such words only from their contexts.

The “being” (“εἶναι” essence) of a thing is that, **in the thing** by which it would be defined. We define things in terms of universals (katholou). To understand “einai” better, we must first discuss katholou, and then return to einai.

Universals (*katholou*, καθόλου) (from Pos An) are:

1. commensurate

The concepts we learn and can then think when we wish (just discussed above) Aristotle calls “katholou” (according to the whole, kata holos). The word “katholou” is always translated by the English term “universal” but this misses much of what Aristotle means. Our modern notion of “universal” concerns only the logical **extension**, expressed by the word “all” or “some” or “a few.” For example, whatever we would say about flesh, we consider it a universal if it applies to **all** flesh. We might say that all flesh is red when cut open. But this can be true of watermelons. We can say that it is the way of all flesh to decay eventually, but this is also true of bones. Aristotle would not call these attributes “katholou” because for him a katholou definition of flesh would **define flesh and only flesh**. “Angles adding up to 180 degrees” is not a katholou of isosceles triangles because this is commensurate with triangle, not isosceles triangle.

2. belongs inherently (καθ’ αὐτό καὶ ἢ αὐτό)

For him a universal attribute must belong to the thing not only commensurately but also inherently **as itself**. For example, in France certain human rights are granted by the government. But the Declaration of Independence attributes these rights to human beings as such and inalienably. A “kath auto” trait is one that the thing cannot lose unless it changes into some other thing. For Aristotle a universal (katholou) has to be kath auto. It has to belong necessarily to the thing from what it itself is.

“Thus then, we have established the distinction between the attribute which is true in every instance, and the essential attribute. I term *katholou* an attribute which belongs to every instance of its subject and to every instance **per se and qua itself**.”

Τὸ μὲν οὖν κατὰ παντός καὶ καθ’ αὐτὸ διωρίσθω τὸν τρόπον τοῦτον· **καθόλου** δὲ λέγω ὃ ἂν κατὰ **παντός** τε ὑπάρχη καὶ **καθ’ αὐτὸ καὶ ἢ αὐτό** (APo 73b.25-).

3. exhibits the cause(s)

“The value of the universal is that it exhibits the cause” (APo 88a.5). τὸ δὲ καθόλου τίμιον, ὅτι δηλοῖ τὸ αἴτιον. For Aristotle a thing’s “causes” or “reasons” are basically internal, only sometimes external. So the word “cause” can mislead us since in English it is used primarily for an external relation like one billiard ball pushing another. For Aristotle natural motion depends not on an external mover but on the body’s internal nature such that, for example, if water is heated sufficiently it becomes steam (which for him is something else) and moves up; cooling steam makes it into water which always moves down. It is heated or cooled by something else, but then the body itself determines how it moves.

“Cause” includes all four of Aristotle’s answers to the question “why?” The four causes are: the source of the thing’s motion (traditionally the “efficient cause”); its internal organization (“formal cause”); the aimed-at aspect of its organization (“final cause”); as well as what the thing is made from (“material cause”). In many things the same aspect accounts for two or three causes at once. For example, as we have seen, in living things the form is also the moving cause.

4. according to the whole:

A thing’s own essential nature inherently connects it to other things. The word “katholou” derives from “*kata holos*” which means “according to the whole,” or “in virtue of the whole.” In the English translations, Aristotle’s constant talk of the whole disappears. It is as if he never mentions the whole. Or worse, “holos” is translated “on the whole,” as if it meant an approximation. The German translations at least retain the verbal connotation of “considered according to the whole” when “holos” is rendered “*im ganzen*” or “*im ganzen betrachtet*.”

Substances exist independently and also participate in a whole (II-4, 415b2) in which they are connected. (“all things are ordered together somehow, but not all alike, both fishes and fowls and plants . . . (Meta XII, 1075a16-24). What something is from itself is also what connects it to the other things in the whole. We will see as we proceed, that each substance actively makes itself as a kind of completeness in matter, so that it exists individually as well as within the whole.

einai “being”

The “being” of a thing (εἶναι, from Latin: “essence”) refers to what the thing is, that from which its other traits can be derived.

One thing can have more than one einai. For example, I am one thing but what I am is a man, also a father and a professor. Different attributes follow from them. Being a “professor” is not what makes me a man or a father, but all three are predicated of numerically one thing. Other examples: A point on a line is numerically one but can be “different in being” as the end of one segment, the start of the other segment, and as midpoint. The same hill can “be” (defined as) an ascent or a descent. Aristotle says: “existence has many senses” πολλαχῶς γὰρ τὸ εἶναι λέγομεν. (XIII-2, 1077b15).

It can seem very questionable to call how we define something the “being” of the thing. Isn't this just our concept? Modern thought has generally assumed one fundamental divide between “existence” and our perceptions and conceptual “constructions” (as they are often called). Aristotle handles the question in a more complicated way. I discuss this further in ENDNOTES 106 and 109.

104. On the Straight, and Other Places Where It Is Mentioned.

I-2, 404b23: Aristotle quotes Plato: “Nous is one, knowledge two,” because “between two points” there is “only one straight line.”

I-5, 411a5: with the straight (εὐθεῖα) we recognize both itself and the crooked (καμπύλον).

Physics V-3, 226b32: The straight line is the shortest... and the only definite one... and a measure or a standard must be definite”

Meta V-6, 1016a12-15: The straight is more one than the bent. We call the line which contains an angle one and not one, because it may or may not move all together. The straight always moves as one. καὶ ἡ εὐθεῖα τῆς κεκαμμένης μάλλον ἕν· τὴν δὲ κεκαμμένην καὶ ἔχουσαν γωνίαν καὶ μίαν καὶ οὐ μίαν λέγομεν, ὅτι ἐνδέχεται καὶ μὴ ἅμα τὴν κίνησιν αὐτῆς εἶναι καὶ ἅμα·

These quotations show that Aristotle considers all the many possible curves as defined by their deviations from the one straight line.

105. On Things That Differ from Their Being Contrasted with Substances

Since these are different, a megethos and the being (εἶναι) of a megethos, and water, and water's being, and so too in many other cases (**but not all, for in some cases they are the same**),” (429b12)

In contrast to things like megethos and water which “differ from their being,” Aristotle says **in the parenthesis** that some things **are** the same as their being. Here he does not say which things these are.

I need to tell the reader that most commentators interpret “the same as their being” to refer only to God and the unmoved movers. They take the difference between things and their being to apply to all things that have matter. They say that the “being” is simply the thing considered without its matter. I find that this would contradict what Aristotle says in many places which I will cite.

I find Aristotle clearly saying that a thing like a megethos or a line **cannot** be understood by taking away its matter and considering just its form. I think he is saying that the being of a megethos **cannot** be understood without its matter. One **can** define its matter alone, but not its form alone. One can imagine a blank continuum, but one cannot have a line without a continuum. He shows that if these are considered without their matter, one gets something else. The defining “being” of abstract things is the next more abstract form, which in turn cannot be understood without its even more abstract matter.

It might seem to be a difficult question which things are defined by what they themselves are. But notice that the series from megethos to “two” includes none of the things we are studying in the De Anima. Living things, plants and animals, are not included in this series. He mentions them later in the chapter (εἰδῶν, 429b.28) where he says that they are the same as their nous-form, i.e., the same as their being.

The matter of living things is defined only in terms of **their own** form, the soul which organizes the matter of their bodies. This is the reason why the being of living things can be considered in this brief book, the De Anima, without the massive amount of information Aristotle has written in his many books about the heart, the brain, the lungs and other parts of animals, about the course of the various blood vessels and sinews, endless detail about how the embryo is formed and grows, as well as vast amounts of detail about each species. We don't need to read all this to understand the De Anima because according to Aristotle the living things are **definable by their activities**, and these can be **considered** without their matter although not

without understanding that the activities organize matter, and exist in matter. This means that for Aristotle living things are what he calls “substances.” Substances do **not** differ from their being, the internally arising activities that define them.

The Metaphysics says:

“A particular thing is considered **to be** nothing other than **its own substance**, and the to ti en **einai** is called **the substance of that thing** (Meta VII-6, 1031a17).

ἕκαστόν τε γὰρ οὐκ ἄλλο δοκεῖ εἶναι τῆς ἑαυτοῦ οὐσίης, καὶ τὸ τί ἦν εἶναι λέγεται εἶναι ἢ ἐκάστου οὐσία.

“... the being (einai) of the soul is the same thing as the soul.” (τὸ γὰρ ... ψυχῆ εἶναι καὶ ψυχὴ ταυτό.) “Soul and the being of soul are the same.” (ψυχὴ μὲν γὰρ καὶ ψυχῆ εἶναι ταυτόν, Meta VIII-3, 1043b2). “**the soul is the 'what it is for it to be what it was'** (τὸ τί ἦν εἶναι) and **the definition (logos)**,” (II-1, 412b15-17)

(τὸ τί ἦν εἶναι καὶ ὁ λόγος ἢ ψυχῆ)

(On Aristotle’s use of “substance” and “the substance of”, see ENDNOTE 2.)

Let us ask more precisely how substances which define their own matter differ in Aristotle’s view from the abstract things in our series here.

A horse is a substance. According to Aristotle, the horse’s “being” is the soul-power for its activities. Of course, a horse is **also** a megethos. (See ENDNOTE 102.) We can analyze the horse in terms of size, also in terms of elements, geometric figures, and numbers, but in Aristotle’s view these will not enable us to understand what a horse is. Or, consider a nose. Its size and shape will not tell us what it is. Only the living activities of smelling and breathing define a nose. Only nutrizing and reproducing make and define the matter that can smell and be a nose. In short, Aristotle’s view is: **Abstractions cannot define substances.** Substances exist in terms of their activities and powers which define their matter. Although always in matter, the living forms remain themselves when they are considered without their matter.

I am sure that this is what Aristotle says, but can we make sense of it all the way through? **Here** is the place to understand the living substances in contrast to this series of abstractions.

Aristotle says that activities and powers (the living things forms) **can be considered** without their matter and still be the same form, whereas we **cannot consider** a megethos, an element, or a line without its matter because without their matter we get something different.

Aristotle’s view may be hard for us to grasp because we tend to assume that “existence” means filling the space before us. For Aristotle what most exists is activity (energeia) which is

precisely not something that we see in a space before us. We can see the horse before us, but the horse's power to turn food into itself is its internal self-organizing which we do not see before us. For Aristotle existence (*energeia*) is activity. Only activity exists fully; everything else exists derivatively, such as powers and motions. Mathematics "don't exist at all, or only in a certain way" (XIII-2, 1077b15). A mathematical form does not generate its matter. On the contrary, the figure depends on a matter which can be defined and imagined without the figure. *Qua megethos* it does not organize matter. Aristotle defines a body by its motion, up or down. As a *megethos* it does not move up or down.

But can't we still object that it is only Aristotle's choice to assert that activities exist as such, and elements or lines do not? We could certainly turn Aristotle's argument around and claim that lines, quantities and elements are what horses "really are." The progress of modern medicine comes from understanding living bodies as "really being" elements, lines and numbers. One can argue that the living activities are only of sentimental interest, that living things "really" exist only as atoms and spatial structures. In that case the activities would **not** exist as themselves whereas the lines and number would exist as themselves.

If we turn Aristotle's view of existence around, the difference he sees here would still obtain. We would argue that appearances before us (dimensional things and lines) do exist as themselves whereas **living from inside** does not exist as itself, but the abstractions in our series here would still differ from Aristotle's internally self-organizing activities.

Aristotle reverses the common Western view: In English "abstractions" are without matter. We speak of "abstracting **from** matter." Of course he agrees that mathematical are considered without wood or steel or flesh. But he uses the word "matter" differently. **In Aristotle's view the abstract things consist of a kind of matter.** Whereas in classical physics "matter" and "space" are different from each other, for Aristotle they constitute one field. Purely empty space is imaginary. A line requires an imaginary continuum which he calls "intelligible matter." A number exists as a position on the continuum of the endless series of numbers. When this "matter" is removed from lines or numbers, they disappear. **For Aristotle, abstractions are not definable without their own matter.**

Commentators including Aquinas say that the active nous "abstracts" the forms of substances from their matter. I argue that for substances this is not the right term and not the right notion. Aquinas is already a little in the ambience of the modern view. **For Aristotle**

considering a material substance without its matter is not a case of “abstracting.”

Aristotle applies the word “abstractions” only to the mathematical objects. In Aristotle’s terms the forms of substances are not abstract. They are (the power for internally arising) activities, whether considered along with their matter or as understandable forms.

For Aristotle **living** matter cannot be defined apart from the soul activities. (See ENDNOTE 16.) Therefore Aristotle can define living substances as their being, their own organizing *energeia*.

Where does Aristotle arrive at his concept of “substances?” Not in our chapter. Where in the *De Anima* does he say all this? He doesn’t say much. He mentions substance at the start of II-1. In II-4 he says “for substance is the cause of being in all things, and for living things it is **living** that is being (*εἶναι*)” (415 b12). Of course, the whole *De Anima* is about things that live, i.e., originate their activities from themselves, but he does not tell us that this is what makes them substances. He has a separate work about substance, the *Metaphysics*. He always decides very sharply just where to write about each topic. For the reader that isn’t so helpful. One can spend years trying to understand the middle books of the *Metaphysics*, but only the actual instances in the *De Anima* show what he means.

In the first half of the *Metaphysics* Aristotle does not decide which things are substances. The word is used **to ask** “what is substance?” by which he means: **What exists?** More exactly, he asks: **What exists from itself, independently**, not as a relation, product, or combination that depends on something else? At the end of Book VI he says that the true or false is **not** existence since it occurs only in the soul.

In *Meta* V-8 one sense of “substance” includes the elements in the cosmos (earth, the oceans, the air, and fire) but in Book VIII he decides that they are **not** substances because “they aren’t one thing, only a mere aggregate, before something is made out of them” (1040b8). A little later he also **excludes** artificially-made things (tools, paintings, houses) because what they are depends on an external design imposed by someone who makes them. There he says: “Probably, then, things that are not naturally composed, are not substances.” (1043b23). We have to infer that a natural solid body **is** a substance because it moves as one thing, and was not made by something else.

In Book VII at last he says that **especially the living things are substances** (“*malista*,” *Meta* VII-8, 1034a4). But we need the *De Anima* to know how living things exist as their internal power to originate their activities and bodies (the power he calls “soul”).

In our chapter so far he has not dealt with living things or with any substances. They come up a little later (429b.28) where he talks about things which **are** the same as their nous-forms (εἶδαι), i.e., their "being," i.e., so that they can be considered without their matter. Those things (defined by their own activities, nutrizing, perceiving, noein) can be understood just by nous, and only by nous.

Here in this series on which I am commenting, we are still thinking with dianoia which involves imaginable matter, not only nous. We have not yet arrived at the kind of thinking which is just nous understanding itself, the kind he likened to a straight line "relating to itself."

106. On Reversal of "Being of Flesh and Flesh;" Things or Relations?

Why does Aristotle mention "being of flesh" first, and only then "flesh?" In all the other pairs the being comes second.

Except for flesh, our progression up the ladder is always from the previous **being** on the right to the next-higher sensible **thing** on the left. Then we move to its being, and from its being in turn to the next sensible thing. Why does he move from the being of water directly to the being of flesh?

Pondering such tiny questions is always worth while in a carefully constructed text. Even if Aristotle wrote it without pondering, there is going to be a reason why it came onto the page in this way. And the reason usually leads further in. **In this instance the question will lead us to ask about the transitions between the two columns.**

First we want to see that the relation of the second pair to the first differs from the relation of the third to the second: Whereas sensible water is a constituent in a megethos, **sensible flesh is not a constituent in water.** So

He says that the flesh is a special case. On the one hand it is just another megethos defined by the hot/cold, fluid/dry proportion of the elements that compose it. On the other hand, the flesh also defines the elements by touch-sensing the hot/cold, fluid/dry qualities. (Aristotle defines the elements by the touch qualities.) To which of these two must we go from the being of water? It has to be the side that defines the cold and fluid. For this we do not go to the **sensed** flesh as a sensible body like other bodies. We have to go to the **sensing** function which is the **being** of flesh, its function as the sensing "mean." That defines the cold and fluid which

was involved under "the being of water." In this special case we do go from the being of water directly to the being of flesh. Therefore the reversal.

Now let us see how we move on from the flesh pair. **From** which side do we move to the next step? Is it from flesh as sensed, or from its "being" (its sensing-defining function)? What does he move to? He moves from the snub-shape of the flesh. Well, which has the snub shape? The sensed flesh has the snub shape, not its being (its function as mean). Since we move up from the snub, the reversed position of the two terms works upward as well.

If we see this, we can also understand the relationship across the two columns of pairs. It might give the impression that the things **are** relations to each other, and similarly the "beings" to each other. It would be an error to read it that way. Only the being of each thing relates a thing to the next **thing**. And each being needs the next **thing** between it and the next being. If it were not so, there would be no things, only a relational texture, as I will now argue.

For Aristotle things are not just instances of a concept, as moderns often assume. Aristotle's view is **neither** that things exist only as instances of conceptual relations, **nor** that they are internally unconnected. As so often, Aristotle wants it both ways. To see this, we need to notice:

Aristotle does **not** define each **being** by the next-higher **being**. It is not the case that **the being of** a megethos is defined by **the being of** water. A body contains ordinary concrete **sensible water**, the left column thing water, not what defines water (not its being). Similarly in the case of mathematical things, the being of a curve is defined by (its deviation from) a straight line, not by the being of a line which is two. The number two does not define a curve. Each being is defined by the next-higher **sensible thing**, not by the next-higher being. **The connections within each column are not directly vertical; they first slant to the other column, and then back.**

To see the importance of this, it may help to recall that Aristotle comes after Democritus and Plato. Comparing him to them can show why the thing/idea difference matters so much to Aristotle. But don't take sides. All three views are important in philosophy in our time too. We want to understand their uses and limits.

Democritus taught that **only** atomic constituents **exist independently**. They had only external relations to each other. Aristotle teaches that **only** living things and moving bodies (substances) **exist independently**, and **also** in relation to everything else.

In Plato's dialectic **only** the interrelated whole **exists independently**. The things are only "images" of the concepts. Every definition soon contradicts itself and leads to a more comprehensive definition. Dialectical relations of concepts can seem to absorb everything. The relations surpass the modest, short-lived existence of things like conscious animals and you and me. If just relations exist, then nothing but the whole would exist from itself.

To Aristotle it is important throughout to view things not as absorbed into conceptual relations, comparisons, differences. The order of the whole connects actively self-generating substances (1075a16-24).

107. On the Flesh As Mean

We should not speak of flesh as if it were the sense of touch. Above Aristotle says "it is **by the faculty of sensation** that we discriminate the hot and the cold . . ." We also recall from II-11 that the flesh is not the organ of touch. But it is in the organ that the various sense qualities are defined. In which way, then, is it the flesh that defines the hot/cold/fluid/dry which defines the elements, as Aristotle says here?

Aristotle says that the composition of flesh is just at the mean proportion between hot, cold, fluid, dry. The flesh is sensitive all over the animal. The organ of touch has to be somewhere further in the body. The organ **produces** the touch-sensation by sensing an object's deviation from the

flesh's own mean. In the role of medium, (the role which the air has in hearing) the flesh can carry the touch-sensation because it is middlingly solid/fluid, i.e., it is composed according to the mean proportion. In this respect it is like the wax in II-1, 412b7. (See ENDNOTE 14.)

108. On How the Same Line Becomes Thinking

as a bent line **relates to itself** after it has been straightened.

The line is an image for thinking. We can imagine a straight line, but we cannot image its relating to itself. Thinking cannot be pictured; it is **only** thinkable. We don't think the image; we think **in** the image.

“That which can think (etikon) therefore, thinks () the forms in images” (end of III-7).

“But what distinguishes the first thought-presentations from images? Surely neither these nor any other thought-presentations will be images, but they will not exist without images. (end of III-8).

What might he mean by saying that thinking is the same faculty as sensing, only like the line to itself? He might mean that it is the same proportioning as sense but taken by itself. For example, imagine the touch-sensation of your finger on your nose. Then imagine the touch sensation of your nose on your finger. These are two left-over sensuous memory images. Now **take** the one warm yieldingness which you found on both sides. You are **thinking one** proportion or likeness between the two sensings.

The sense-proportion of flesh is alike in both sensations, but sensing does not sense the likeness between them. The likeness cannot be sensed or imaged; it has to be thought, found by comparing. We think it in the image. The image is the same, only **how we take it** is different. In philosophy this conceptual “taking” is a frequent theme. For example, Husserl invokes it (Ideas I). Wittgenstein points out that we cannot picture the family resemblance which we notice in the photographs in a family album. Here we can say that when you look at a picture of yourself and see that it has the same proportions as your face has, you are taking just the proportion as such. You think the same proportion as one, although you cannot see it as if it were a third picture.

But we don't need my example of flesh touching flesh. Even touching the table two different things are involved, the table and the skin. Sensing does not sense itself. (It senses only **that it senses**.) Sensing is always of something else; it is always two. But understanding understands itself. And, “understands itself” can mean that it understands what understanding is, and it can also mean that any specific thought-object is a form of itself. I think Aristotle plays this little puzzle throughout. You compare various sense proportions, and arrive at likenesses and differences between them, but the resulting thought-object, the noun, your comparison is nothing but your **comparing** activity.

“**The bent line** is to itself **straightened**” says that after straightening it is still the same line. Thinking is still the sensing, only now to-itself. Sensations are the sense's own proportioning. A ratio (logos) is separable like a melody or a recipe. To generate one proportion between two sensings is a further function, one proportioning of two proportionings. The same

proportioning with an extra turn becomes the thinking. (“ . . . either two powers, or the same in different respects.”)

Aristotle's view of thinking as emergent from sensing seems to keep thinking always very close to sensing, despite its being also very different since it makes a new object by being to itself.

.....

More detail on “straightened:”

I-3 406b30 Aristotle cites Plato's Timaeus: The demiurge bent a straight line, imagined like a strip which he then cut in two lengthwise (τὴν εὐθυωρίαν εἰς κύκλον κατέκαμψεν). The two strips were then crossed to make an "X", and then made into two circles by **connecting each to itself**, bending them back so that all four ends of the X meet in one spot, making two circles one inside the other. So Plato's demiurge, beginning with a straight line, bent it into the spheres of the planetary motions, and Aristotle, here proceeding in the opposite direction, pulls the bent out straight again, but keeps the line relating to itself.

Plato's demiurge connected each line to itself. I think that this is the origin of the Aristotle's “line to itself.” I take the “bent” line as curved so its ends point to each other. Of course just the word “bent” could mean like a “V,” but I think we can take “bent” to mean pointing at itself. Then if it is returned to its original straightness it would still be the same line. Plato was deriving the concrete material universe from pure thought. Aristotle is moving from the material things to pure thought. He takes the activity of thought (nous) as straightening the enmattered line.

In our passage the word “line” (gramma) does not appear, nor at first does the word “straight” (εὐθύ), only “pulled out” (ἐκταθῆ). We can take the pulling out as the activity which **makes** what Aristotle **then in the next part** calls “straight.” I take the **thinking** (noein, understanding) as analogous to the **activity of pulling-out**, so that the straight is the product.

A line also divides. Sensing and thinking are two kinds of what Aristotle calls “discriminating” (krinein, III-3, 428a4). In discriminating between sense and thought, the thinking discriminates between two kinds of discriminating.

We saw in III-3 that in Aristotle's use “krinein” means not only dividing but also making something appear as a result. So here the discriminating discriminates itself. This might be a

way in which the analogy applies "to itself," but perhaps we have extended the metaphor much too far.

At any rate we can say:

- (1) Thinking discriminates **between** itself and sense by proportioning "**just as** bent ... **to** itself, **so** pulled out **to** itself."
- (2) Thinking is one of the two discriminated sides, the "pulled out to itself" side.
- (3) Thinking is the discriminating activity in (1) taken as just itself.

Aristotle's takes noein throughout as a self-understanding with its own resulting object. This applies only to noein, (understanding), not dianoia (combining, predicating).

109. On Things and Faculties in Parallel: Aristotle's Many "Fine" Distinctions at the Edge

And universally (και ὅλως), **as** the **things** (πραγματα) are separate from matter, **so** also **those of the nous** [are separate from their matter]. (429b21-22)

The conclusion here is an instance of the parallel Aristotle always draws between faculty and thing. Since the things in our series were constituted by their matter, we could not understand them just with our nous. We had to understand the water with images of sensible matter (cold and moist) and we needed imaginary matter to understand mathematical things.

We notice that Aristotle uses the word "pragmata" (things) here. It confirms our reading that on the side of megethos and water he means the things. On the "being" side he meant "those of nous," i.e., what defines the things.

On the "being" side one might ask: Is Aristotle just reading **our** understanding into the things and calling it **their** being? How could he consider this a sound approach? His approach is actually complex. He never simply equates what is in things with our sensory or conceptual ways of defining them. Instead he asserts both an interactive link **and** a gap. The linking relation is never representation, never copying. Indeed, it is just the link which also defines the gap. He asserts that the thing and the sensing and understanding activity share one single

actual form but only while together in the activity. When they are no longer in act together, we only have images and universal concepts which are not in the things at all. And, the things are only potentially colored and thinkable. The concept or image we retain afterwards is not the one form of the shared activity. (I discuss this in detail in ENDNOTE 117.)

Apart from the single shared form in act, Aristotle defines many different ways in which a form in the things can be considered, and many different ways in which we have images and universals without being engaged in one activity with a thing. It is very difficult to keep all his specific differences in mind, and never quite clear whether they can all obtain together consistently.

Aristotle can seem like a naive realist, as if the forms of the real things are as we sense and know them. But no students would have come to his school if he had taught naive realism. In Athens the philosophers were skeptical about everything. It was well known that all concepts are limited and can be broken down. In Plato's dialectic the definitions change on almost every page. There are different concepts in each Dialogue, always a long series of changing concepts. That is Plato's way of dealing with the limitations of all concepts.

Aristotle saves his concepts. He found another way to deal with the inherent limitations of concepts. He establishes many different differences between different kinds of existing things and different ways they are sensed and known. This is how Aristotle deals with the limitations of concepts.

He is impatient with dialecticians and skeptics for lumping everything together to doubt everything at once. Life and action wouldn't be possible if we didn't eat, sense, and know particular existing things, but one has to make distinctions. For him there is not just one kind of sensing and knowing about which to wonder whether it ever reaches the things. The things are always participating in our living, sensing, and thinking, so that faculty and things are always inherently together in each living activity, but what they share in the active encounter is utterly different from what thing and faculty are apart from the encounter.

It sounds like naïve realism if we just repeat his statement that "the organ and the thing share the same form" during actual sensing. Commentators have not always emphasized that the shared sense-form (the color or sound) is not in the things. It is actual only when a thing's actual sounding coincides with an animal's actual hearing (III-2 at the start). Similarly red and green are actual only while we actually see light.

What then are potential sounds and colors? One meaning is an intermediate kind of actual, when nobody hears or sees but a medium is active and has those forms. In this way actual colors do exist in light. The bronze's own sound is *actual* only in continuously moving air (II-8). This intermediate actual contrasts with the *potential* sensibly in the thing without a medium in act. The bronze alone has no sound. Its "potential sound" is only its hardness and smoothness, due to which bronze *can* have a sound. (Wool can't.) The potential color is the elemental mixture on the thing's surface which determines what color the light will actualize.

So it cannot be one question to ask whether sensing ever reaches real things. He seems to assume that it *always* does in ongoing interaction, but also that our percepts and images are *never* what is in the thing. Sensing cannot be "subjective" since it happens with the things, but the color exists only as a form of the light. The proportions that make red or green are given by sensing as a proportioning activity, but even so they are not subjective since the thing's surface determines whether light and sensing actualize red or green.

So his view is not that sensing copies a form off the things, so that we could ask whether they are correct representations or not.⁷

With him the realist/subjectivist question ceases to be one question. The medium and sensing *generate* the sense-form which then exists in the medium-activity (still potentially) and is actual only in the animal's sensing encounter with things. We animals live in a world of actually-colored things, but only as the result of medium and sensing activity.

A rather similar but more complex theory is what I take him to mean when he says that we grasp things by direct interaction but that the universals by which we understand and define them are not in the things. Universals and definitions exist just within the soul. Thinking (dianoia) combines terms (συμπλοκή) and can be true or false. (III-6, 430b26-29). Very sweepingly, he says that the true and false are *only* within the soul; they are not being (existence). (Meta 1028a1). What we predicate of things is not as such in the things even though it can be true. The true and false exist only within the soul, because they are

⁷ McDowell and more recently other Analytical philosophers have created a view of sensation without representational "sense data," denying that these have to be posited between us and the sensed things. (See M. Esfeld, "Aristotle's direct realism in de anima." *Review of Meta*. 54, 2.) Some other Aristotelian strategies are also coming into new analytical work. See also Gallagher 2005.

attributions, combinations. Our definitions always have several terms, at least genus and species, whereas "in the thing the form is one," he says (end of Meta VII-12).

All of us first learn Aristotle's philosophy in a highly simplified version with his many distinctions merged, as if form, universal, being, substance, definition, and the understandable, were the same thing. But it is not easy to learn his "fine" distinctions.

The distinctions are difficult to grasp and their readings are controversial. Aristotle has many terms for what we call "existing." He has more different terms than ordinary language, more terms than any other philosophy I know, among them τοδε τι, τι εστι, τα οντα, νοητα, πραγμα, ιναι, το τι ην ειναι, ουσια, η ουσια, καθολου, συνολον, ειδος, and more. Here, to understand his parallel between faculty and things, we need only to know that Aristotle makes such distinctions so that we don't take the togetherness of knowledge and existence uncritically.

We begin with simple concepts and may achieve advanced grasps late in science. He shows in the *Posterior Analytics* (for example, II-13) how much work and many attempts are involved in such a late understanding. It cannot be demonstrated but many demonstrations can lead up to getting it.

These are all "fine" distinctions but they are not small. He considers the things in parallel with how we sense or know them but he also specifies the differences between them.

Let us now return to our modern doubt whether our sensing and knowing can ever reach what exists. We see that Aristotle assumes that the universe is primarily activity, not the things which he views as products of activities. He assumes that living, sensing, and understanding are activities going on in the universe. Therefore he does not share the modern wish to know the universe as it would be without including sensing and conceptualizing. That makes him seem a naïve realist. But the utter gap between the "one" in the thing and the many universals in our definitions makes him seem like a nominalist. I say that no familiar modern philosophical position really fits him.

Aristotle distinguishes right here between :

- 1 The form that organizes the matter in the living thing
- 2 The same organizing form considered as the understandable ("in the thing it is one")
- 3 The learned conceptual universals in our potential nous (genus, species, several

universals)

4 The nous activity which generates a single understanding in interaction with the thing.

110. On Mathematics

Aristotle often moves from the science of nature to mathematics and then to metaphysics. Our series here has gone from natural things to mathematical objects, and then stopped with the parallel conclusion about matter. The metaphysical things are not in this series. They come immediately next, here (429b29). They are the “forms” (eidei) which are understandable in things. Since substances are defined in the *Metaphysics* his discussion there will be part of that science.

I want to argue that this order of the sciences does not mean that mathematics constitutes a zone within which existing things must appear. Aristotle’s view of mathematics differs markedly from our Cartesian-Kantian tradition. **For him the imaged continuum of the “abstract things” of mathematics is not the framework within which the things exist.** The space and time of mathematics are not realities as with Newton. Time is only a measure (of motion). Distinct space points (“places”) are determined only by bodies touching. Empty space does not exist. Aristotle says that empty space only seems (*φαίνεται*, 212a.10) to exist because something seems left over when we empty a container. (See *Phys.* IV-1, 208b27-209a4 and IV-4, 211b15-22. See also Einstein’s discussion of Aristotle’s denial of empty space, quoted in ENDNOTE 59 in II-7.)

I emphasize that Aristotle rejects the common modern assumptions, because I don’t want us to read them unwittingly into Aristotle. But don’t take sides. We need to see his point of view but we cannot just agree with him. For our technology we need our mathematical empty space and time.

His view of space and matter were already difficult to grasp in his own time. His student, to whom he entrusted his manuscripts, wrote what moderns take as a defense of empty space. Democritus’ concept of empty space (the void) precedes Aristotle and was well known. Since Kant most people assume that what exists is what occupies space-time. Aristotle denies this assumption.

The mathematical objects are not prior in existence. Mathematics does not supply definitions of substances (independently existing things). Units and numbers enable us to measure things accurately, he says, but the “intelligible matter” of such units is not a layer between us and existence.

In the series we just had, Aristotle showed that mathematical objects cannot define self-determining things. Curves, lines and numbers cannot be considered without imagined matter.

The mathematical are not prior existences . In Meta XIII-2 he says:

“ . . . they don't exist in sensible things. It is clear that either they don't exist at all, or they exist only in a certain way, and therefore not absolutely, for 'existence' has many senses.”

ἐπεὶ δ' οὐδ' ἐν τοῖς αἰσθητοῖς ἐνεδέχεται αὐτὰ εἶναι, φανερόν ὅτι ἢ ὅλως οὐκ ἔστιν ἢ τρόπον τινὰ ἔστι καὶ διὰ τοῦτο οὐχ ἀπλῶς ἔστιν· πολλαχῶς γὰρ τὸ εἶναι λέγομεν.

The imaginary “matter” (the continuum of geometry) is not what the existing things exist in.

111. Things without Matter 430a2

“And it is itself understandable as its objects (νοητα, noeta, understandables) are.

For, in the case of those which have no matter, that which understands and that which is being understood

are the same;

For in that way contemplative knowledge and that which is known in that way are the same.

The reason why it does not always think (noein) we must consider.”

(καὶ αὐτὸς δὲ νοητὸς ἔστιν ὡσπερ τὰ νοητά. ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτὸ ἔστι τὸ νοοῦν καὶ τὸ νοούμενον· ἢ γὰρ ἐπιστήμη ἢ θεωρητικὴ καὶ τὸ οὕτως ἐπιστητὸν τὸ αὐτὸ ἔστιν τοῦ δὲ μὴ ἀεὶ νοεῖν τὸ αἴτιον ἐπισκεπτέον·)

Two meanings of “things without matter”

- a) One can read “things without matter” as referring just to ordinary theoretical objects. Without matter they exist just as nous activity.

b) “Things without matter” may include not only theoretically considered things, but also things that actually exist without matter, such as the unmoved movers.

One can argue under b) “things without matter” he must include matterless things, because only so would it be a relevant question why we don’t always think. This question would arise if nous is identical with things that exist without matter and are therefore always in act.

(The question is answered in III-5 by the distinction between that side of our nous which does always think, and the potential side which does not.)

Aristotle asserts the existence of matterless substances in numerous other passages, for example concerning the third kind of substance in Meta XII-1, and the unmoved movers (Meta XII-8, 1073b3 and Physics VIII, 259a10).

In some other passages about things without matter he seems first to discuss (a) and then immediately also (b) just as he seems to do here.

In III-6 Aristotle says “But if there is anything . [one of the causes]. . which has no opposite, **then this will cognize itself through itself**, and is activity and separate.” εἰ δὲ τι μὴδὲν ἔστιν ἐναντίον . . . αὐτὸ ἑαυτὸ γινώσκει καὶ ἐνέργειά ἐστι καὶ χωριστόν. (III-6, 430b25). This surely refers to a) substances that are merely considered without matter, since ordinary substances (tree, dog) do indeed have no opposites. He says that they don’t (Meta XI-12, 1068a11). What would be the opposite of a tree? But the second half of the sentence “knows itself through itself and is activity and separate” seems to refer to actually existing separate things. So he seems to begin with a) and end the sentence by referring to (b).

In Meta VIII-6 Aristotle similarly speaks first of the forms of things that do have matter, and then goes right on to discuss those which “have no matter.”

Similarly, at the end of Meta IX Aristotle speaks of “the incomposites” (τὰ ἀσύνθετα), a term which can refer to a) any single concept. According to him a single concept involves no attribution (no combination) and hence is incomposite. But then he seems to indicate that he is moving on to **another** kind of thing, when he says “the same applies to incomposite **substances** .. they all **exist in act**.” (ὁμοίως δὲ καὶ περὶ τὰς μὴ συνθετὰς οὐσίας, . . . καὶ πᾶσαι εἰσὶν ἐνεργεῖα, (1051b26-28). We look back and notice that the “incomposites” we have been discussing up to now were not incomposite **substances**, i.e. not things that exist from themselves.

In Meta XII Aristotle has a passage that is also quite similar to ours here. The identity between thinking and object is first discussed in what is obviously a case of (a), the enmattered

understandables. (He mentions the productive sciences.) These are surely a) understandables only considered without matter.

“In some cases **the knowledge is the thing**. In the **productive sciences**, without matter it is the substance or essence of the object, and in the theoretical sciences it is the logos and the act of thinking.”

“Since understanding and what is being understood are not different in the case of things that have no matter, the understanding and the understandable will be the same, i.e. the understanding will be one with what is being understood.” (1075a2-5).

ἢ ἐπ’ ἐνίων ἢ ἐπιστήμη τὸ πρᾶγμα, ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἢ οὐσίας καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος τὸ πρᾶγμα καὶ ἡ νόησις; οὐχ ἑτέρου οὖν ὄντος τοῦ νοουμένου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει, τὸ αὐτὸ ἔσται, καὶ ἡ νόησις τῷ νοουμένῳ μία.

Then he immediately discusses (b) something that is not merely understood apart from its matter, but rather **exists** without matter.

“A further question is left: whether what is being understood is composite; for if it were, it would change in passing **from part to part of the whole**.

(ἔτι δὲ λείπεται ἀπορία, εἰ σύνθετον **τὸ νοούμενον**: μεταβάλλοι γὰρ ἂν ἐν τοῖς μέρεσι τοῦ ὅλου) (1075a5-7).

This understood thing certainly includes (b) something that exists always in act.

One can wonder why Aristotle tends to discuss a) and b) together with only a disputable transition. I think it is because what he has to say is largely applicable to both. Types a) and b) are both defined by activity, (energeia). Activity exists from itself whether it organizes matter or not.

With some strain one could argue that all substances (all things that have self-organizing forms) are always in act in the nous of the universe since it is always in act, and always functions as the final cause (like an object of desire) that gets all other things moving. He says that the nous is also “the first object of noein (1072a26)). But he says plainly that it thinks only itself. The enmattered substances (which our book is about) have self-thinking forms only in the human nous. So I think he must be including b) matterless things like the unmoved movers in these passages.

We may find b) matterless “activities” a difficult concept. Despite more than two millennia, our English word “energy” might still come closer to what Aristotle means by

“energeia” than the traditional Latin translation “activity,” We have difficulty conceiving of an activity that exists as such by itself, but we can think of an energy as existing by itself.

112. *Self Knowings, Not Mere Knowns. "Reflexivity"*

THE PREVIOUS LINES:

“And it is itself understandable as its objects (νοητα, noeta, understandables) are.

For, in the case of **those which have no matter**, that which understands and that which is being understood

are the same;

For in that way contemplative knowledge and that which is known in that way are the same.

The reason why it does not always think (noein) we must consider.”

AND THE NEXT LINES:

In those things which have matter each of **the understandables** is present potentially. Hence, **they** will not have nous **in them**.

ἐν δὲ τοῖς ἔχουσιν ἕλην δυνάμει ἕκαστον ἔστι τῶν νοητῶν. ὥστ' ἐκείνοις μὲν οὐχ ὑπάρξει νοῦς

for nous is a potentiality for being such things without their matter,

ἄνευ γὰρ ἕλης δύνამις ὁ νοῦς τῶν τοιούτων

while the former are the **understandable**.

ἐκείνῳ δὲ τὸ **νοητὸν** ὑπάρξει.

In our passage Aristotle is making a distinction: The **understandable** in the things is contrasted with the power for nous. At the end of Book II he made an analogous distinction: The merely **sensible** was contrasted with the power for **sensing**. Aristotle asked whether smelling consists just of being affected by smell. If smelling were just the being affected, then the air would be having sensations when the cheese makes the air smelly by affected it.

“What then is smelling aside from being affected?” Or is smelling also **sensing**, whereas the air when affected quickly becomes **sensible**?”

ἢ τὸ μὲν ὁσμᾶσθαι αἰσθάνεσθαι, ὁ δ' ἀήρ παθὼν ταχέως αἰσθητὸς γίνεται;(424b16-18).

He says “affected quickly” because air is fluid, easily affected; therefore it is a medium which can take on and transmit the sense-form.

How is sensing more than being affected and smellable? Most modern readers cannot immediately appreciate Aristotle's point. We mostly do consider a percept as if it were just our being affected. For Aristotle sensing also requires being affected, but the activity of sensing is much more. If we fully grasp his view of sensing, his analogous view of understanding in our lines here will become clear.

One way in which a perception is more than being affected is sensing that we sense. And this is not sensed by another sense but is always inherent in the sensing. We would not see red if we didn't also see that we see red. Notice this characteristic pattern: not two, not one observing the other. Aristotle argues that the single activity inherently includes the object and the turn on itself.

We can specify what Aristotle means if we first try to argue that a machine could sense "that it senses." For example, the elevator door can emit a warning sound when it "senses" someone in the way. One might argue that it does not only sense someone; it also indicates that it senses. But it indicates this – to whom? Not to itself. In contrast, "sensing that we sense" is what I would call "self-indicating." The old tradition called it "reflexivity." Sometimes people call it "recursive." (For an excellent discussion of reflexive principles, see Walter Watson.⁸)

When "we sense that we sense," it is not a sign to others. Sensing is a process to itself. I think he means something similar about noein. Once we have sense and images, Aristotle takes nous to be an additional turn that is again a turn to itself. (ENDNOTE 108).

A consequence of this view seems to be that each self-indicating substance is an individual, a separately self-existing thing that cannot be subsumed away under more comprehensive interrelations, such as love, the polity, or the universe. In "the order of the whole" the self-indicating individuality is not undone because sensing that you sense individualizes you and makes you something one and single.

"Nor indeed is it possible to discriminate (*krinein*) by separates that sweet is different from white, but both must be evident to something one and single, for otherwise, even if I sensed one thing and you another, it would be evident that they were different from each other" ((III-2, 426b17).

Self-understanding similarly makes you inherently "one and single." As therein, each self-knowing is an individual.

8 Walter Watson, *The Architectonics of Meaning*, State U. of N.Y. Press, 1985, pps. 136-161.

Sensing that we sense is what we call "consciousness" but one cannot slip that word into the translation because for Aristotle this is not something additional; rather, the sensing is also inherently "sensing **that we sense**." It is a relation internal to the activity (energeia).⁹

There is much current discussions about consciousness and why it cannot fit into our space- time science. It seems that the space-time neurological structures would exist just as now even without ever being conscious. (See the "zombie hypothesis" that the material human being could exist unchanged without consciousness. *J of Consciousness Studies*, Vol. 6, Jan 1999). What moderns call "consciousness" is assumed to be a separate agency, like an external observer, internal of course, but external to the internal events, a *mere* observer, not constitutive of experience and events.

For Aristotle the internal self-turn in understanding is even more evident than in sensing. We understand that we understand but this is not a separate addition to what we understand. What we understand is a self-understanding. The thought-object is our understanding. So he takes the understood to be the understanding, as he said in the preceding lines: (For, in the case of **those which have no matter**, that which understands and that which is being understood **are the same**;)

Smelling differs from how a thing is smellable because sensing is self-indicating, reflexive. It consists not just of the percept but includes that we sense. Understanding differs from being understandable in the same way.

In modern science this inherent self-turn in our process has been lost sight of. Understanding seems to exist only as a chemical and neurological process. Neurologists expect to explain it as a pattern of nerves firing. Logicians want to reduce understanding to a calculus that a machine can perform. Goedel said and tried to prove that no logical calculus is able to include **itself** in its own calculations. He said that an "intuitive process" is always involved. But we tend to think just of the object without the process of sensing or understanding

9 See Harry Frankfurt, *The Importance Of What We Care About*, Cambridge 1988, page 162 for a good example. Frankfurt writes: "The claim that waking consciousness is self-consciousness does not mean that consciousness is invariably dual . . . a primary awareness and another instance of consciousness which is somehow distinct ... which has the first as its object. That would threaten an intolerably infinite proliferation of instances of consciousness. Rather, the self-consciousness in question is a sort of immanent reflexivity by virtue of which every instance of being conscious grasps not only that of which it is an awareness but also the awareness of it."

it. We are accustomed to a kind of concept that has no such turn to itself as Aristotle found essential in sense-perception and understanding.

Moderns tend to assume that passive things just exist. For Aristotle "existence" consists of activities. And, the kind of activities that have the internal turn to themselves are what he primarily means by "existence."

"he who sees senses that he sees, and he who hears that he hears, . . .

we understand that we understand . . .

for sensing and thinking is existence". (Ethics 1170a29-b1)

This view of "existence" drops out of sight in our usual reading of Aristotle. We tend not to notice it when he says it. We tend to think of "form" just as a concept, pattern, or shape, rather than as an existing activity. (II-1 at the start: "and form is activity . . .")

Someone once wrote that for Aristotle "the soul survives eternally as little bits of geometry." We just saw in our chapter that geometry involves a kind of matter, not just nous. If that author had made his mistake properly he would have written that the soul survives as bits of zoology and ethics. If we think of nous as mere concepts, then we read Aristotle as if **he** attributes independent existence to concepts. But Aristotle tries to refute nothing more often and at greater length than the independent existence of conceptual forms. (He takes that to be Plato's view). For Aristotle, nous is not the concepts but the self-turned activity that exists and generates concepts.

Looking at it from his point of view, our usual Western view seems to assume that conceptual "laws of nature" exist out there as something merely perceived and organized. The active perceiving and theoretical organizing are considered "subjective," not part of what exists. The success of our abstract science is established, but it has made for a long-standing controversy. One view holds that the theoretical objects of science – the conceptual knowns – are "objective" laws of nature. They exist out there as real. In the opposing view the laws of nature are our "constructions." Descartes said he made hypothetical constructions. Objectivism came later, due to their overwhelming success. Neither "constructivism" nor "objectivism" is very satisfying. Aristotle differs from both.

Even though it is the topic of the whole De Anima, we tend not to notice that for Aristotle self-turned activity (energeia) is the existence of living things. We are accustomed to modern science which does not derive basic concepts from living things. Aristotle's basic concepts

(energeia, ousia, first actuality) come from self-turned thinking and sensing activity. And the nutrizing activity (“living”) is also in a way self-turned. It is the power of growing the matter into a body, the mature form of which is defined by the power to generate another such body. From the embryo (given by the parents) the living thing **grows into itself**. He views other things by deriving other concepts from these. Motion is “incomplete activity.” Moving bodies exist independently (are substances) because each moves as one thing, and determines its direction from inside. Bodies are held together by internal heat activity.

Only artificial things (poems, tools) exist just as something organized because their organizing is not in them. The organizing is in the poet or the designer. Even in the case of artificial things Aristotle studies them by looking for what is closest to self-organizing. (“The plot is like the soul of the drama.”)

113. On Making All Things 430a14-15

just as in all of **nature** . . .

so there must also be these differences **in the soul**.

Note the comparing (proportioning, setting up a proportion). Sometimes I have called it “just- asing.” **As** in all of nature **so** in us there is an active side. Plato and Aristotle were keenly aware that they were **making** concepts, and doing it by relating and comparing things. Plato in the *Meno* likens virtue to an art. Then a great deal emerges from looking at virtue with the variables of art. For example, there are teachers of every art, so if art is to its teachers . . . as virtue is to its teachers --- then who are the teachers of virtue? We are led to notice that there seem to be no such teachers to go to, to learn virtue. He also compares virtue to wealth. Then a father with resources will surely pass them on to his children. So: wealthy father is to wealthy inheritor . . . as virtuous father of Anytus is to – virtuous Anytus. But pursuing this implication leads us to notice that Anytus is not virtuous. Each time the results are not arbitrary. If we have experience of the thing, each proportion brings out something from the thing and **makes a concept**. So it does not need to surprise us that Aristotle views the understanding-making activity as comparing, analogizing, making concepts from proportioning.

At the start of our chapter, the “just as . . . so. . . “ **is** a bit of the understanding-making activity, going on. The activity of doing the comparing **compares itself to** an art that acts on its

material. Is this only the active nous, here? No, also the potential nous; we are learning this. The active nous is comparing itself to art, and comparing the potential nous (the reception of the concept) to the material of art. Since we understand this, nous is active here now. It must not be elevated to a mysterious level beyond our grasp. We understand our proportioning activity (just as... so...) which is “making” this analogy, as well as the resulting proportion, **the concept**. And here in this special case, the understood concept is about what is actively **doing** the understanding.

Active art and passive material is Aristotle’s major comparison. From II-1 on we saw him generate concepts by comparing and contrasting living things with products of art. (He uses the same Greek word which means “wood” also to mean “matter.”) In II-2 the relation of soul to body was compared to the relation of the art of medicine to health. Sometimes nous compares itself to something else, for example to an army (PA II-19, Meta XII) or to the ordering of a household, (Meta XII). The comparisons bring out a relation that was already there, but only potentially, not as **the proportion**.

Here the proportioning brings out just what it is in nous which is like the activity of art, as distinguished from what is like the passive material of art. The latter is the potential nous which acquires forms and has no form of its own. Like the wood or marble used in art, it can acquire any form. Now Aristotle will say that the actively-making nous also has no form of its own, since it can make any form. We expect to hear more about it.

We can distinguish three aspects of nous, which are not three different things:

- (1) The potential nous, the “receptacle” which has
- (2) the knowledge-forms made by
- (3) the activity of the active nous.

114. On Hexis and Comparison with Light

I have already commented (in II-5, II-7 and ENDNOTE 58) on this word “hexis” (ἕξις), **a having** or **a habit**. We will use the Greek word because no translation fits. (“Hexis” is often translated puzzlingly as “a state,” or “a positive state,” or “disposition.” Aristotle has a different

term (διάθεσις) which needs to be translated "disposition" (Meta V-19) and he uses it as well as "hexis" in Meta V-20 (1022b10), so "disposition" cannot really translate hexis.

In Metaphysics V-20 Aristotle says:

"Hexis means in one sense **an activity**" [notice: one activity] "as it were of the haver and the had as in the case of an action or a motion; for when

1) one thing makes and

2) another is made

3) there is between them the act of making.

... There is another sense of having ... either well or ill disposed ..."

"Ἐξις δὲ λέγεται ἓνα μὲν τρόπον οἷον ἐνέργειά τις τοῦ ἔχοντος καὶ ἐχομένου, ὡσπερ πράξις τις ἢ κίνησις ὅταν γὰρ τὸ μὲν ποιῆ τὸ δὲ ποιῆται, ἔστι ποιήσις μεταξύ·

... ἄλλον δὲ τρόπον ἕξις λέγεται διάθεσις καθ' ἣν ἢ εὖ ἢ κακῶς (1022b4- 11)

With the term "hexis" Aristotle names what for him is one thing, although it is a three-way relational cluster.

For example: He says that light is a hexis. It consists of

- 1 the transparent (which may be lit up or dark) may have
- 2 an actual color made by
- 3 the activity of light.

Analogously

- (1) the potential nous is a "receptacle" which can have
- (2) the knowledge-forms made by
- (3) the activity of nous.

He speaks of a hexis as one thing. Accordingly:

- 1 something that is only potentially its complete nature can come to **have**
- 2 **its complete nature** which includes the products made by
- 3 the generating activity.

In this interpretation:

- 1 the transparent is a potential nature
- 2 whose complete nature includes actual colors made by
- 3 light which is always active in the heavens and sometimes here.

Analogously in the case of nous:

- 1 The potential nous is a potential nature whose complete nature is
- 2 the habituated understood which are made by
- 3 the active nous.

A hexis is a kind of "nature" (Meta VIII-5, 1044b33 and XII-3, 1070x12). The hexis is the full nature which belongs to the potentiality as its own nature, but requires some activity to realize it.

A hexis can be at two stages:

- a) Before any activity the mere potentiality may be nothing actual at all.
- b) Once the potentiality has acquired forms (been habituated, developed a habit), then it may have become a power in its own right which can initiate some activity, but of course not without the always-active side.

So the potential nous is no actual thing at all before at least some thinking (noein). When knowledge has been acquired, the potential intellect has become a power which can "think itself **from itself**" (III-4, 429b9). It can initiate thinking but not without the activity of the ever-active nous.. .

. An example of his other sense of having: "... either well or ill disposed ..."

- 1 Human living is already actual, but only the potential for
- 2 living well, which is brought about by
- 3 practice which is activity in accord with the mean (and/or imitating a good person).

Take, for example, playing the piano. This can be done well or badly. The written score corresponds to the principle of moral virtue. Practicing is the activity which makes playing well. You have been pressing the keys all along, but unfortunately for your listeners you and your fingers were not yet habituated to be fully guided by the music. When you have practiced enough, then your playing is in accord with the music.

Aristotle's view of living well is analogous. After years of practicing some activities that are in accord with the principle we become habituated, so that we are actually living well, (at the mean of with deliberation).

Aristotle argues that although the acquisition of moral and intellectual virtue **requires** bodily changes, the acquisition **is not** itself those changes (II-5, Physics VII-3, 247b1-248a6). As we have often found, for Aristotle "activity" (energeia) is what organizes changes and motions rather than being changed or moved. The potential nous is not changed or affected by learning. He said it has no matter. His term "affectable" means matter. For Aristotle it is not a change when something comes into its own complete nature (II-5). That is what happens in a hexis. Similarly, he says that the transparent does not change in light. Rather, light is the transparent's own complete nature and activity.

The concept of "hexis" explains how Aristotle can think of active and potential nous as one thing.

These instances of "hexis" differ somewhat. Light makes actual colors but light is not our activity of seeing, whereas nous is also our activity of understanding the forms it makes.

The light in the sky does not convey the colors of other things, but it has (is) its own "sort of color" which Aristotle calls "brightness." (II-7, 418b11). If light were a seeing, it would see its own "sort of color." The active nous is also self-understanding.

Virtuous activity is action in accordance with the rational principle, whereas nous is its own principle.

115. On "in Substance Activity" (Per Ousia Energeia)

It is in substance activity. For that which makes is always superior to that which is affected.

What a thing "is in substance" means the form, what the thing is. A verbal definition can define it, but a thing is one unity, not the several parts which go to make up a definition.

Note the word "For." Nous is "in ousia activity" **because** "that which makes is always superior to that which is affected," Here the defining activity **which makes** definitions is "superior" to any **product**, any definition it makes. What it is **is** the activity. It understands **itself** as the making, not only as one more **made** understood object.

But is it incapable of being defined? How would a definition of it be made? The proportioning- activity would proportion itself to something, art let us say, or light. Then we could "define" nous as a kind of thing with differentia. Aristotle has just presented such a merely made definition. The kind of thing it is, is a hexis, and its differentia are "separate, unaffected, and unmixed." Aristotle asserts but does not stay with this understood definition. **Now the definition-making activity takes itself as superior to its own made definition which was merely its product.**

The only thing of which Aristotle elsewhere says that it is "in substance activity," is the nous activity of the universe.

"If [the first mover's essence] is potentiality, there will not be eternal movement, since that which is, potentially may not be. There must then be a principle which is **in substance activity** (ἡ οὐσία ἐνέργεια, *Meta* XII-6, 1071b.20).

Aristotle says that the "is" of the universe is not like only wood, but like wood **and** carpentry. Anything that exists from itself (moving bodies, plants, animals) exists as self-organizing activities, but only nous is **in substance** activity.

116. On "Principle"

" . . . and the principle [is always superior} to the matter"

By the word "arche" (ἀρχή, source or principle) Aristotle means something that founds itself and is a starting point. I have offered ways to understand why Aristotle thinks that understanding establishes itself. In his view this is so much so, nous can seem almost self-enclosed with its own creations. It is not self-enclosed because it doesn't invent its objects; it only actualizes potential understandables that we meet in living and perceiving. But the

actualizing has a new kind of object of its own making, the proportion as such. This known object, the proportion, is really the activity, the proportioning. In understanding the proportion, nous understands itself.

By "principle" he means what can be grasped directly. Throughout the Posterior Analytics and especially in II-19 Aristotle emphasizes that demonstration, inference and reasoning depend on the concepts, the premises with which one begins. What he calls the "first principles" are tree, cow, man, water, which we learn as children long before we can think theoretically. Other "principles" happen late in a scientific inquiry, but he thinks of them similarly as single grasps, not true or false assertions.

Now I want to argue that for Aristotle a principle is not something postulated or inferred. It is not like Kant's "formal" principles which are not themselves experienced, but "must" apply to explain how experience is possible. **For Aristotle, inferences follow from principles; principles are grasped, not inferred.**

When we read or hear something that we don't understand, we cannot say much from it; we can only repeat the words. But once we understand, we can say a lot from the understanding, which couldn't have come to us before. Even late in an inquiry, a grasp is a "starting point" from which what we already know can now be deduced.

To describe this grasping Aristotle also uses the word "thigganein" (θιγγάνειν) which means to touch, reach, handle, take hold of, embrace. He argues that identity-grasps at the start, and again near the end, govern everything between. Although Aristotle is famous for inventing formal logic, we need to recognize that for him logic works only between the early and the late kinds of principles. No logical system enables us to deduce principles. For him the universe is not a logical system.

In the history of philosophy there has been a long and not very satisfying discussion about forming concepts from experience by "induction." Explaining induction seems circular. One uses some concepts and premises to derive how we obtain concepts and premises. If one avoids the circularity, then one seems to assert an unwarranted mystery. Aristotle seems to belong to the latter view. How we obtain concepts cannot be analyzed in terms concepts. Many commentators consider Aristotle's direct grasping as something beyond understanding. But we don't want to let his top principle depend on a mysterious grasping that we do not in fact grasp.

We should be able to grasp it based on itself. I think what he means by direct grasping is something familiar and straight forward.

In a favorite example of his, Aristotle asks: What is an eclipse? "Darkness on the moon" is a poor definition since the cause is not stated. A good definition is "darkness on the moon caused by the earth coming between." To primitive peoples an eclipse is mysterious. We know the cause. But then Aristotle points out that if we stood on the darkened moon we would instantly grasp what an eclipse is. We would understand it directly from seeing the earth in the way (Po An 90a14 and 93b6). Similarly, if you are reading and someone comes and stands between you and the light, you see the person and the darkness on your book but you understand the cause immediately. Whether this is a satisfying account of concept-formation is questionable but there is no doubt that this very simple kind of "grasp" is what he means.

In modern terms we might say that we grasp "relationships." We put it this way because we are accustomed to consider the material things as existing, so that the complexities seem to be "just" relationships. So we find it difficult to understand Aristotle's view that we grasp a complexity as one thing in one grasp. Although we obviously do what he refers to, how he thinks of it as furnishing premises is controversial.

I don't think Aristotle means that we never go on to a false assertion from grasping a principle. Truth and falsity apply only to combinations which are only in the mind, he says ((1027b25). I think he deals with this by asserting an utter gap between a grasp and the distinctions and assertions.

Despite the complex arguments I think he means something simple and obvious. In my reading the obvious grasping can be distinguished from the unresolved issues about how it works and its function as premise.

We have already grasped two of Aristotle's main principles, but perhaps without noticing the grasping as such. Let us see how we did it.

How could we understand what he meant by saying that sensing an object includes **sensing that we sense (the object)**? We could know what he meant only by sensing that we sense --- and then immediately understanding that we do. If that is how it happened, then we can also grasp this immediate understanding that we did.

Analogously, to follow what Aristotle means by saying that understanding always understands itself, we go to our understanding. We “see” (i.e., understand) that we cannot understand **what** we understand without also understanding **that** we understand.

And in the same way we can also understand the “principle” of immediate understanding which we just instanced.

117. On What Is Knowledge in Act?

“Knowledge (episteme) **in act** is identical with (is the same as) its object (thing, pragmati).”

τὸ δ' αὐτὸ ἐστὶν ἢ **κατ' ἐνέργειαν** ἐπιστήμη τῷ πράγματι (430a.19-20).

Sections of the endnote:

- 1) Does “knowledge in act” here refer to the active nous?
Where does Aristotle say that active nous by itself is knowledge?
- 2) Is the sentence out of place here? Some commentators want to delete it. Comparing the other places in the De Anima where the identity is asserted.
- 3) The differences between (a) “without matter;” (b) “in act;” and (c) “separate from megethos.”
- 4) (b) knowledge in act with particular things.
There is “knowledge in act” only if the particular thing is present.
Universals don't exist in things and are not knowledge in act.
Aristotle's stated reasons for this view of universals.
- 5) (c) knowledge in act with what is separate from megethos.
Within nous Aristotle does not make the usual distinctions.
- 6) Quotations from Metaphysics XII-6-10.
Where Aristotle stops.

What to make of our chapter has always been utterly controversial. Currently some commentators dismiss it rapidly. There is also a long tradition of adding theological concepts to our chapter from other sources. It seems that what Aristotle himself says cannot be unambiguous. But I think we have been able to follow him in much of the chapter already. Only

at the end does he arrive at an enigmatic point. But we can hope to understand clearly and philosophically how he reaches that point.

The chapter is enigmatic also for another reason. Aristotle assumes quite a lot that he does not say here because he says it in other of his works. I will quote some of the other books.

There is controversy even just about what our line says and whether it belongs here. In section 1) I will cite where Aristotle says explicitly that active nous is a kind of “knowledge.” In sections 2)-6) I will develop a way in which we might understand it.

1) Does “knowledge in act” here refer to the active nous?

Does “knowledge” in our sentence refer to the active nous? The chapter has been about “it” and continues about “it” to the end, so “it” is probably the active nous here too. He goes on to say that “it” always thinks.

It is not unusual for Aristotle to shift from “nous” to “knowledge.” He does that also in III-4 (430a4-9) and in III-8 (431b22-24). There as here, nous is knowledge because it involves an object with which nous is identical. I think we are safe to conclude that “knowledge” here refers to the active nous.

At the end of III-4 he said that the knowing and the known considered without matter are the same thing. So the sentence can be read as simply saying that again. But III-4 was about the potential nous that learns and becomes the objects. What does he mean by “knowledge in act?”

Where does Aristotle say that active nous by itself is knowledge?

How can the active nous be any sort of knowledge? It doesn't remember anything. Since it is unchanging, it cannot know first this, then that. And if it knows only itself, isn't that empty? In Metaphysics XII (quoted in 6) below) Aristotle asks this question himself. Is nous alone empty “just like one who sleeps?” (1074b17). He answers, that as final cause of all things, **nous knows all things in a whole**, and this knowing is itself. And, he says that the active nous in the human soul is similar. “. . .the act of **contemplation** (theoria) is what is most pleasant and best. . . . **God is always** in that good way in which **we sometimes** are . . .” (1072b23-26).

Recently Gifford (1999) has pointed out again that Aristotle has something like Plato's theory of reminiscence. Commentators rarely mention it. Aristotle says that we could not learn anything if the soul were not already all knowledge. Learning is a kind of recovery of a knowledge that is in some sense already complete. In a passage in Physics VII-3 (247b1-248a6) Aristotle presents this assertion at greater length

“And the original acquisition of knowledge is not a becoming or an alteration: for the terms '**knowing**' and

“prudence” (φρονεῖν) imply that the thinking (διανοία) has reached a state of rest and come to a standstill . .

. for the possession of **prudence** (φρόνιμόν) **and knowledge** is produced by the soul's settling down out of the restlessness natural to it. . . . The result is brought about through the alteration of something in the body, as we see in the case of the use and activity of the intellect arising from one's becoming sober or being awakened. “

η δ' ἐξ ἀρχῆς λήνις τῆς ἐπιστήμης γένεσις οὐκ ἔστιν οὐδ' ἀλλοίωσις· τῷ γὰρ ἡρεμῆσαι καί στήναι τὴν διανοίαν ἐπίστασθαι καὶ φρονεῖν λεγόμεθα, τῷ γὰρ καθίστασθαι τὴν ψυχὴν ἐκ τῆς φυσικῆς ταραχῆς φρόνιμόν τι γίγνεται καὶ ἐπιστήμον. ἐν ἀμφοτέροις δὲ ἀλλοιουμένων τινῶν τῶν ἐν τῷ σωματι, καθάπερ ἐπὶ τῆς χρήσεως καὶ τῆς ἐνεργείας, ὅταν νήφων γένηται καὶ ἐγερθῆ.

Aristotle certainly says that active nous is a kind of knowledge. How we can explain this to ourselves is another question which I will discuss later. He says that active nous is (in some sense) a complete knowledge of all things, and that it enables us potential knowers to learn by encountering the things, one by one.

“The states of the intellectual part of the soul (νοητικῶν) are not alterations, nor is there any becoming of them. . . . For **that which is potentially** possessed of knowledge (ἐπιστήμον) becomes actually possessed of it [knowledge] . . . when it meets with the **part** (μερὸς) that it knows **in parts** (μερῶν) in relation to (πρὸς) the **universal (katholou, according to the whole).** . . .”

(ἀλλὰ μὴν οὐδ' αὐτοῦ νοητικοῦ μέρους ἕξις ἀλλοιωσις, οὐδ' ἔστιν αὐτῶν γένεσις.

τὸ γὰρ κατὰ δύναμιν ἐπιστήμον οὐδὲν αὐτὸ κινήθην ἀλλὰ τῷ ἄλλο ὑπάρξει γίγνεται ἐπιστήμον.

ὅταν γὰρ γένηται τὸ κατὰ μέρος, ἐπίσταται πρὸς τὰ καθόλου τῷ ἐν μερῶν.

The bodily restlessness can change and cease to be an impediment. The knowledge itself does not change or develop. It is already the nous in the soul, but we potential knowers have to encounter the sensible particular things. To know them we take each particular in its relation to the whole. This relation is the universal (katholou, according to the whole). The particulars are “**parts**” of **the whole** which the active nous already is. Most translators

substitute “particular” for Aristotle’s word “part” (meros, merēi), thereby obscuring the part-whole relation.¹⁰

He likens the acquisition of knowledge to recovering from alcohol or sleep. A bodily condition has temporarily obstructed access to our knowledge. This passage also explains his well known analogy that acquiring a universal is like an army **recovering** from a rout, when first one man and then another makes a stand (PA II-19,100a14). He thinks of learning as recovering from a disturbance of a prior order that already exists in us. In Meta XII he also compares the order of the whole to the order of an army (1075a12-16).

There is little doubt that this is Aristotle's view, but it is surely difficult for us to grasp. Even to make a rudimentary sketch sufficient to become able to discuss his view, requires keeping in mind simultaneously at least two major ways in which he diverges from our usual Western view:

For him what we translate as “the universal” is not just our familiar general class concept. To be a “universal” (katholou) it must state the cause. By “cause” Aristotle means how the particular fits into the whole. We have to keep the relation of “universal” and “whole” in mind even if we don't understand it at all.

Secondly, we cannot think about his view if we think of knowing something merely as having a concept, and if we consider the thing we know just as passively known about. In Aristotle's view active knowing is neither the concept in us nor the knowable thing. He is asserting more than either. We can say what he asserts. How it might make sense to us is a different question. He asserts that some new activity of ours, more than the concept, is also a new activity of the known thing's form. This new activity happens not in us but between us and the thing.

10 The translations differ on the relation between part and whole in the sentence “it is when it meets with **the part** (μερος) that it knows in **parts** (μερηι) in relation to (προς) the universal (καθόλου).” Ross (Hardie & and Gaye), Wicksteed & Cornford, Apostle, and Prantl translate the passage to say that we know the part **by means of the universal**, whereas Sachs says that we know the universal **by means of knowing the particular**. Hope says that when a particular occurs we are “guided **by it**” to the universal. Obviously the grammar does not indicate either way. I read Aristotle as saying that **both are required**, but the particulars are crucial twice: We must first obtain the universal **from** particulars. Then, **after we have universals** Aristotle calls it “knowledge in act” only when we are knowing a definite present particular (Prior Anal II-21, 67b1). So Sachs and Hope seem to be more right than the others. I think Aristotle means that when a part **actually comes by** we know the part **in relation to** the whole.

In the material thing by itself an activity organizes the matter and generates the body. In our minds (“in the soul”) we have only the mere concept. But active knowing is the thing's form as thinking activity. It's form is like the actual color red or green, which (for Aristotle) *is* light. In the thing its color is only some mixture of elements. But the color we see is not just subjective, either. We see the thing's own color, but now as the form of an activity like light.

At the start of our chapter Aristotle said that active nous is like light. Light is an activity that happens between us and the thing, and enables us to see. Light creates the image in us. But the merely remembered image which we take away with us is only a residue, no longer the active seeing. Like light, the nous is similarly an activity also of the form of the particular thing. It is the activity of the whole and enacts the thing's form within the whole. Thereby we are learning the universal, but afterwards the merely remembered universal is no longer the activity.

So he has a three-way relation here between the nous of the universe-activity (which exists also in us) which determines both the activity in the material things and that activity as a form alone when we know it as knowledge in act.

I needed to sketch this view in this sketchy way, just to have it sufficiently so that we can discuss it. Then we can examine what more is involved, especially what he says about universals. This may help us to arrive at a way of interpreting his view. So far I have only shown that Aristotle holds that the active nous is a knowledge, as our line says.

Let us return to the question whether our line even belongs here.

2) Is the sentence out of place here? Delete it? Comparing the other places in the *De Anima* where the identity is asserted:

Some commentators say that our sentence does not belong in this chapter. Ross and Hamlyn suggest deletion. Since the same sentence appears at the start of III-7, it might belong only there. Aristotle rarely repeats a sentence exactly. But we have seen how our sentence might fit right here about the active nous as a kind of knowledge.

Pursuing the question further we notice that Aristotle asserts various versions of the knowledge-thing identity six times in the *De Anima*, always at a similar juncture.

Let me cite the places:

In III-4 the identity applies to something considered “**without matter**.”

III-4, 430a3: For, in the case of those [things] **without matter**, that which thinks and that which is thought are the same;

ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτὸ ἐστὶ τὸ νοοῦν καὶ τὸ νοούμενον·

for in that way contemplative knowledge and that which is known are the same.

ἢ γὰρ ἐπιστήμη ἢ θεωρητικὴ καὶ τὸ οὕτως ἐπιστητὸν τὸ αὐτὸ ἐστὶν

I commented on this version in ENDNOTE 111 and 112. Note that “nous” and “knowledge” are together here too.

In III-5 in our own sentence the identity applies to knowledge “**in act**.”

III-5, 430a.19: “Knowledge **in act** is the same as its thing (pragmati).”

(τὸ δ’ αὐτὸ ἐστὶν ἢ κατ’ ἐνέργειαν ἐπιστήμη τῷ πράγματι)

A somewhat different version, based on “**no contrary**.”

III-6, 430b24: “But if there is anything, some one of the causes, which has no contrary then this will **know (gignoskei)**

itself of itself and is activity and separate.”

εἰ δέ τι μὴδὲν ἔστιν ἐναντίον [τῶν αἰτίων], αὐτὸ ἑαυτὸ γινώσκει καὶ ἐνέργειά ἐστὶ καὶ χωριστόν.

He led up to this by showing that we know many things by their difference from the contraries. Direct grasp is not like that; it is rather a knowing by knowing itself.

The next version at the beginning of III-7 is the exact repetition of our sentence.

III-7, 431a1: Knowledge **in act** is the same as its thing (pragmati)”

Τὸ δ’ αὐτὸ ἐστὶν ἢ κατ’ ἐνέργειαν ἐπιστήμη τῷ πράγματι.

(We may note that the words “without matter” were the last words of the previous sentence).

At the end of chapter III-7:

III-7, 431b17 “In accord with the whole (holos), **the nous in act is its things** (pragmata).

ὅλως δὲ ὁ νοῦς ἐστίν, ὁ κατ’ ἐνέργειαν, τὰ πράγματα [ν ν].

To this version Aristotle adds a question about being “**separable from anything extended:**”

“Whether or not it is possible for it to think (noiein, understand) **what is separate** from magnitude when it [nous] is itself **not so separate** must be considered later.”

ἄρα δ’ ἐνδέχεται τῷ ν̄ κεχωρισμῆν ἄνω τι νοεῖν ὄντα αὐτὸν μὴ κεχωρισμένον μεγέθους, ἢ οὔ, σκεπτέον ὕστερον.

Aristotle is asking whether nous can think things that exist separately from megethos while the nous is still attached to us, soul-body people. Below I will say more about this question.

At the start of III-8, directly after the end of III-7 Aristotle summarizes:

III-8 “the soul **is** in a way all existing things.

For, existing things are either sensibles or understandables

and **knowledge is in a way the knowables** (431b21-24).

ἡ ψυχὴ τὰ ὄντα πως ἐστὶ πάντα· ἢ γὰρ αἰσθητὰ τὰ ὄντα ἢ νοητὰ, ἔστι δ’ ἡ ἐπιστήμη μὲν τὰ ἐπιστητὰ πως,

Let us examine the placements of the six versions. Aristotle cites the identity between knowledge and its thing each time at an analogous spot. It comes at the top of a progression from sensible things through many steps to nous and things that exist without matter.

Let us trace the first progression that led to our spot here: In III-4 the potential nous is first no real thing, then develops as the habit of understanding. Aristotle leads us from sensible things to concepts (elements, flesh, lines, numbers) defined by a matter. Then he comes to what is known just by nous. The first version of the identity appears there, at the end of III-4. But these understandings exist **only potentially**, just like the potential nous itself. They are understand**ables**, not understand**ing**. The progression from the potential nous continues on to

the active nous as knowledge *in act* (III-5). Our sentence comes, at this “highest” spot in the III-4-5 series. So yes, our sentence belongs here.

After III-5 Aristotle moves down to ordinary things and back up to nous twice more in the *De Anima*. A version of our sentence appears again at the top of each progression.

To see the progressions clearly, note his movement through his three kinds of science. He moves each time from natural science through mathematics to metaphysics where, at the end of the series, a version of our sentence appears again.

In the second progression (III-6) Aristotle wants to show that the principle (active nous) which he just arrived at in III-5 provides the unity in all kinds of thinking. He starts by contrasting “indivisible objects” (like nous itself) with combinations. This lets him begin with sensation to show how nous connects the concepts of sensible things (“Cleon is white”). Then he moves on to how nous provides the unity of mathematical things (430b6) and eventually arrives at “things without contraries,” known without potential opposites. Such a thing “knows itself.” There (end of III-6) he tells about how this knowing through itself happens by a single grasp. Just there comes the repetition of our sentence. (It comes as the start of a new chapter, III-7, but Aristotle did not make chapter divisions.) This is again the highest point of the progression.

A third progression (III-7) begins from the repetition of our sentence at the start of III-7. Aristotle moves “down” again from the actuality (entelecheia, completeness) of active nous by contrasting it with motion (always “incomplete”). Then, in one long continuous movement reaching from sense and thought proportions to assertions of the good and its pursuit in practical action, he arrives again at the purely active nous at the end of III-7 where the identity is stated again. This time nous in act is said to be identical with all things (pragmata) and perhaps also with what is separate from anything extended.

At the beginning of III-8 Aristotle sums up the identity by saying: “the soul is in a way all existing things,” and immediately shifts from nous to “knowledge and the knowable.” He says that the identity happens in two different ways: potential and actual. “Actual knowledge is the actual things.” 431b24-26) This is the last statement of the identity in the *De Anima*.

We can conclude that our sentence is not misplaced in III-5. Here and in its other appearances the identity is asserted where, coming from sensing and combining, Aristotle arrives at nous in act.

I comment on each version in the chapter in which it occurs. Here let us consider the different terms used in these versions.

3) The differences between (a) “without matter;” (b) “in act;” and (c) “separate from megethos.”

In his various versions of the knowledge-thing identity Aristotle used these three different terms. Although often considered synonymous, they do differ. Something can be (a) but not (b). The potential nous is ***without matter*** (a) but not ***in act*** (b), since it is potential. Although matter is potentiality, evidently Aristotle has other kinds of potentiality as well. The knowledge-forms which the potential nous becomes are a), but not b).

Something can be both (a) and (b) but not (c). Our active nous is a case of both (a) and (b), but while we live it is attached to a soul-and-body person, so it is not (c) ***separate from extended things***.

The difference between (b) and (c) can be seen by comparing the last two sentences of III-7: As a case of b) the active nous enacts the many particular things by being identical with them, one by one. This is what the next to last sentence of III-7 means: “. . . the nous in act is its things (pragmata). **Notice the plural of “things.”** Then, in the last sentence of III-7 he distinguishes b) and c), and asks a question about (c). He asks whether nous can think c) “**what is separate**” while it is still attached to us as living matter-and-form people.

With this distinction we can see that our sentence in III-5 applies to both b) and (c), since it is first about the active nous while we learn, then about it alone.

What might be an instance of c)? The final cause of the universe is separate. It functions without moving or doing anything; the motion comes from nature.

Aristotle asks whether now, in our lifetime nous can think what is separate from megethos (c). Questions about what is separate belong in the *Metaphysics*. There Aristotle says yes, we people can think (be identical with) what is separate, but only for a short time after a long development. He says very little about this, our “best” kind of knowledge in act.

One could argue that just stating this question about “what is separate from megethos” already involves thinking (noein) about such a thing. Evidently Aristotle means something more, since he leaves the question open here. It shows again that knowledge-in-act isn't just a mental concept.

Let us now use the distinctions between our three terms in our further examination of knowledge-in-act: Obviously a) “**without matter**” is not a sufficient condition for knowledge-in-act, since the potential intellect is without matter but not in act. But there is knowledge in act in the case of (b) and (c). Let us first examine the case of (b) particular things known “**in act**,” and then in the case of (c) **what is separate** known in act.

4) (b) knowledge in act with particular things:

There is “knowledge in act” only if the particular thing is present:

In II-5 (417a27-b3) Aristotle says that knowledge in act happens (for example) “when the grammarian is contemplating (theorein) **this particular letter ‘A.’**” In Book XIII of the *Metaphysics* he uses the same example but expands and explains what he means. Knowledge just of universals is **potential** knowledge and indefinite, he says. Only when we interact with a definite **present particular**, do we know **in act**. His example in XIII is again “**that this particular Alpha is Alpha.**” (Meta XIII, 1087a21).

Aristotle said in II-5 that we can activate our universal concepts whenever we wish, but in III-4 he says that even when we do they are only potential. “... when the scholar can exercise the function by himself, even then it is in a sense potential.” 429b8 III-4. This becomes clear where he tells us that **there is knowledge in act only while a particular sensible thing is present**. Even if the particular was sensed moments ago it cannot be known in act when it has gone. After knowing **this particular “A”**, when the grammarian closes the book, there is no longer any knowledge as *energeia*. Now the “A” is known only through a universal, just within the soul.

“For we do not **know** any object of sense **when it occurs outside our sensation** – not even if we have perceived it and [only] **posses** the knowledge of the particular **without exercising**(*energein*) it (Prior Anal II-21, 67b1).¹¹

. . . ἐπιστήμας. οὐδὲν γὰρ τῶν αἰσθητῶν ἕξω τῆς αἰσθήσεως γενόμενον ἴσμεν, οὐδ' ἂν ἠσθημένοι τυγχάνωμεν, εἰ μὴ ὡς τὸ καθόλου καὶ τῷ ἔχειν τὴν οἰκείαν ἐπιστήμην, ἀλλ' οὐχ ὡς τῷ ἐνεργεῖν.

11 On this passage in the Prior Analytic see Gifford, *Phronesis* XLIV, 1999. See also my footnote 1.

Universals don't exist in things and are not knowledge in act:

Aristotle is usually taught as saying that knowledge consist of universals, but this turns out to be so only “in a sense.” Aristotle says:

“The doctrine that all knowledge is of the universal
and hence that the principles of existing things must also be universal and not separate substances
presents the greatest difficulty of all that we have discussed;
there is however a sense in which this statement is true although there is another in which the statement is not true. Knowledge, like the verb **“to know” has two senses** of which one is potential the other in act.
The potentiality is, as matter, universal and indefinite, has a universal and indefinite object.
But in act it is definite and has a definite object because it is **particular and deals with the particular.**”
(Metaph XIII-10,1087a.10-18)

τὸ δὲ τὴν ἐπιστήμην εἶναι καθόλου πᾶσαν,
ὥστε ἀναγκαῖον εἶναι καὶ τὰς τῶν ὄντων ἀρχὰς καθόλου εἶναι καὶ μὴ οὐσίας κε χωρισεμῆνας·
ἔχει μὲν μάλιστα ἀπορίαν τῶν λεχθέντων, οὐ μὴν ἀλλὰ ἔστι μὲν ὡς ἀληθὲς τὸ λεγόμενον, ἔστι δ' ὡς οὐκ ἀληθὲς
ἢ γὰρ ἐπιστήμη, ὥσπερ καὶ τὸ ἐπίστασθαι, διττόν, ὃν τὸ μὲν δυνάμει τὸ δὲ ἐνεργείᾳ.
ἢ μὲν οὖν δύναμις ὡς ὅλη [τοῦ] καθόλου οὐσα καὶ ἀόριστος τοῦ καθόλου καὶ ἀορίστου ἐστίν, ἢ δ' εἰ ἔνεργεια
ωρισεμῆνη καὶ ωρισεμῆνου τόδε τι οὐσα τοῦδέ τινος·

When I showed this passage to several scholars, they first read it as saying what they assumed, that “potential” and “as matter” would be about the particular. I had to point to the words which say that the universal is “potential and as matter.”

Aristotle argues here that we can know the particular thing **directly**, whereas we know it **“only accidentally” as an instance of the universal:**

“It is only accidental that sight sees universal color because the particular color which it sees is color; and the particular Alpha which the grammarian studies is Alpha.”

”ἀλλὰ κατὰ συμβεβηκὸς ἢ ὄψις τὸ καθόλου χρῶμα ὁρᾷ ὅτι τόδε τὸ χρῶμα ὁ ὁρᾷ χρῶμά ἐστιν, καὶ ὁ

θεωρεῖ ὁ γραμματικὸς, τόδε τὸ ἄλφα ἄλφα.” (Metaph XII-10, 1087a.19-21).

Only by knowing the **present** sensible thing directly and **actively**, do we **accidentally** **also** know that it is an instance of the universal. So we learn the universal as an accidental by-product of actively knowing the present particular.

I think we can conclude that knowledge in act is an identical activity between nous and (the thereby actualized form of) a particular sensible thing. This conclusion seems quite firm, despite current controversy.¹²

I think I have shown the fact that for Aristotle the universals are only potential and only in our minds. Now let us examine his stated reasons for this view.

12 If this reading is right, it might clarify some controversial puzzles:

Commentators have wondered how Aristotle can say that we can “know” particulars, i.e., grasp their essence, since he also says that particulars have no definitions. Secondly, there has long been controversy over whether particular things are each its own form, or whether their form is the universal.

Since Aristotle says that we “*know*” particulars by thinking,

τούτεν δὲ οὐκ ἔστιν ὁρισμός, ἀλλὰ μετὰ νοήσεως ἢ αἰσθήσεως γνωρίζονται, (1036a6),

and since for Aristotle to “know” a thing means to grasp its essence, and since he also says that particulars have no definitions, and since definitions consist of universals, it follows that each particular has a knowable essence which is not a universal. Knowledge-in-act is knowledge of an essence in a sensible particular, and only accidentally it also generates the universal.

This reading is strongly corroborated by the following passage:

“The causes of things which are in the same species are different, not in species, but because the causes of individuals are different: your matter **and your form**-and-moving-cause being different from mine **although in their universal formula they are the same** (Meta XII-5, 1071a27-29).

καὶ τῶν ἐν ταύτῳ εἶδει ἕτερα, οὐκ εἶδει ἀλλ' ὅτι τῶν καθ' ἕκαστον ἄλλο, ἢ τε σὴ ὕλη καὶ τὸ εἶδος.

καὶ τὸ κινήσαν καὶ ἡ ἐμή, τῷ καθόλου δε λόγῳ ταυτά.

He likens this to the difference between the father of Achilles and your father (1071a23).

What distinguishes **living** things from the outset (II-1) is that their **form** is also their efficient cause. **This single thing** is the soul, the topic of our book. Aristotle is clear that a soul is a form that organizes an individual material substance.

We can usually distinguish between calling Aristotle's arguments fallacious (which they may well be) from controversy just about what he verbally asserts. But both remain controversial. Recently Frede cites Aristotle saying that individual forms exist; Scaltsas denies it. Ibid Frede. Ibid Scaltsas. See footnote 14.

The reasons he gives for this view of universals:

Aristotle tells us why it is so important to him to deny that universals exist. He wants to assure that substances exist. He wants not to lose independently existing things. His word “substance” refers to things that exist from out of themselves. This is what the word has meant from the start and throughout. (We need to free the word from other meanings acquired in its 2500 years of history.)

“The doctrine that all knowledge is of the universal and hence that the principles of existing things must also be universal and **not separate substances**, presents the greatest difficulty of all. . . .”

If particular things don't contain their own source (arche, principle), nothing will exist as itself.

“If the principles in things must be universal, . . . **nothing will have a separate existence, i.e., no substance**. But it is clear that although in one sense knowledge is universal in another sense it is not.” (Meta XIII, 1087a22).

Leading up to this point (end of XIII-9) Aristotle says that the Platonists rightly wanted to assert something beside sensible things, but

“having no other substances, they assigned separate existence to universals.”

The problem is solved, but how was it solved? It was solved in the passage I quoted, by dividing between potentiality and activity, as he does to solve many other issues. **The actual principles in substances are particular; the universals are only potential. Knowledge in act is identical with the thing's form in act.**

If this reading is right, Aristotle has it both ways as he does so often. He retains universals but as potential, and saves an actual source in each individual. Let us examine his treatment of this question in detail.

He poses the problem already at the end of Meta III: “If [the principles] are universal, there will be no substances. For no term denotes an individual thing, but a type; and substance is an individual thing.” (1003a8). From Book VII to XIII Aristotle's argument is long and complex. He begins at VII-13 (1038b4) and says immediately and explicitly (1038b11) that each substance is its own form, not

the universal. Later he adds that the form in a thing is “always one,” in contrast to our definitions which consist of many terms such as genus and species (Meta VIII-6, 1045a15).

Let me set the quoted passages from XIII-10 into their context. Metaphysics XIII and XIV are often taken merely as denials of Plato’s doctrine that conceptual forms exist **apart from sensible things**. Aristotle denies much more. He denies that universals exist **in the things**. **Universals, measures, numbers, mathematical forms such as lines, planes, and figures – none of them exist in things.** (Meta VII-13,1038b10-14 and XIII throughout).

Many readers of the Metaphysics stop with Book XII which admittedly constitutes the “top” of Aristotle’s system. But XIII is where Aristotle’s whole line of argument in the middle books about universals comes to fruition. Both at the start (Meta III-4) and again in XIII he calls it “**the most difficult problem we have encountered.**” Now, in Book XIII, after nearly all of the *Metaphysics*, the problem of universals is still unresolved.¹³

In Book XIII the solution regarding universals is discussed together with Platonic forms and mathematics, probably because Aristotle argues that universals are “**like**” numbers and measures. They are accurately predicated of things, but do not exist in things. The height of a tree can be accurately measured, but there are no length-units or numbers in the tree. As an example, Aristotle refers to his own *Physics* which “considers things insofar as they are movable,” and argues here that there is no such thing as “a movable” **in the things** (XIII-3,1077b20-27).

That Socrates is an animal and a man is true, but no animal or man units exist in him. Such “combinations” are *dianoia* and exist only in the mind. Defining is like measuring; it involves true or false attributions, whereas knowledge in act does not.

Aristotle’s view has long been known as a middle way, neither nominalism nor naive realism. He grants universals a great role, so much so that many commentators have missed his denial that universals exist in things.

¹³ Watson (unpublished) argues very persuasively that Books XIII and XIV came properly before XII in the original order. That would be consistent with Aristotle’s usual sequence, first natural science, then mathematics, and only then metaphysics (as in the progressions I traced above, and in how the three sciences are mentioned at the end of I-1).

So far I think I have shown in what way nous energeia as **knowledge in act** is identical with each particular thing it enacts. Now let us ask: How is knowledge in act identical with “what is unattached to megethos?”

5) (c) Knowledge in act with what is separate from megethos.

Within nous Aristotle does not make the usual kind of distinctions:

“What is separate from megethos” is singular, just nous alone. Nevertheless, in *Metaphysics* XII, 6-10, Aristotle discusses *many* quite different things, all of them nous. I will provide the full quotations in 6), below.

Nous is a part of the human soul, but nous is also the many unmoved movers, and also “the divine,” God, the order of all things in the whole, *theoria* (according to II-1 (“*theorein*” means knowledge in act), *noesis* (the activity), knowledge, the first object of knowledge, the first good, and the cause at which everything else aims. Some of these are the same thing, but there is no doubt that some of them are different, although each is just nous. He is always still talking about “it” without distinction. As Kosman says about XII-9, Aristotle announces his topic as nous, without qualification.¹⁴

Aristotle has no terms that apply only to the nous of the universe. What he says about nous of the universe (or God) is always in terms of comparisons to us. God’s knowledge in act (*theorein*, *theoria*) is the same as the best of ours:

. . . and the act of **contemplation** (*theoria*) is what is most pleasant and best. If, then, **God is always** in that good way in which **we sometimes** are, this compels our wonder; and if in a better this compels it yet more. And **God’s is better** (1072b23-26).

Of course, “better” makes a distinction, and “always” is distinct from “sometimes.” But “that good way” is the same. He distinguishes explicitly when he says about God’s knowledge “but the best, **being something different**, is **a whole**, (1075a8-11). The difference is that ours is attained in time, bit by bit whereas God’s is always whole. The words “ours” and “we” refer to us as soul-and-body people. Aristotle distinguishes between active and potential nous, and between nous alone and nous while still attached to “composite” people (1075a8).

14 “Divine Thought” in *Aristotle’s Metaphysics Lambda*, M. Frede and D. Charles, eds., Oxford, 2000, 307.)

Some commentators decide that some sentences apply only to God, others only to us. But Aristotle does not say so. Except for the potential and composite, he speaks of nous.

There is no such distinction in II-4 either. Aristotle says “just as nous makes (*poiein*) for the sake of something, in the same way also does nature.” One might think that nous **in us** makes for the sake of nous **in the universe**. One might assume that nous of the universe doesn’t make for the sake of something. But Aristotle says that the nous of the universe also “makes ... for the sake of something.” (Meta XII, 1075b8) ὁ γὰρ νοῦς κινεῖ. ἀλλὰ κινεῖ ἕνεκά τινος. It makes for itself.

The unmoved movers are similarly neither merged nor quite distinct. He is fully explicit about why there must be many different unmoved movers in order to account for the variety of motions. (*De Gen*, II-10, 337a21 and *De Caelo*, II-12, 292a-293a12). And yet he uses the word “if” when he says: “**if** there are more than one [unmoved movers], there will be more than one eternal thing, but **one ought to regard it as one rather than many**.” (Physics VIII-6, 259a10). In the *Metaphysics* also he says that they are one (1073a30-b3).

It is clear throughout that the nous soul of each individual is an eternal substance. (See also: *On Length of Life* 465a12-b13, my comments on I-4, 408b18-25 and on “nous is a form of forms” in III-8, 432a1.) But since this is the case also with the unmoved movers, we cannot exclude the possibility that in some way also “one ought to regard *it* as one rather than many.”

All this becomes less confusing if we accept the fact that within nous he does not make his usual kind of distinctions. Aristotle often says that something is in a sense one, and in another sense not one, but then he always goes on to say exactly in what sense it is one and in what different sense not. But I find nowhere that Aristotle says in what sense nous is one, and in what sense not.

On the topic of “nous” Aristotle stops here. Many ways of going on have been proposed, but they cannot be Aristotle's. Let us accept the fact that distinctions within nous differ from distinctions in the rest of his works. With his usual distinctions he says more, and we are eventually rewarded by clarity on the page. Distinctions within nous are evidently not like those.

We could think about these non-distinctions in several ways. If the many human souls were not identical with the nous of the universe, if they were different little offshoots, then they could not function to generate the knowledge of things. And in isolation they would be empty

little floating eternities. But a person's thinking activity is reflexive and therefore an individual existing thing. So the human souls must be individual and also one with nous.

We could say that since active nous is ***the making of*** all distinctions, no distinctions it makes can possibly divide nous. The final cause of "all things in a whole" remains itself. The different roles of nous are not like different objects; they are different functions of one whole. If my sketch of Aristotle's view at the start of this ENDNOTE is right, the nous of the universe directs both the active forms in existing things and their enactment as forms of thinking activity. If the thinking activity enacts all forms of thought, and if it is reflexively its own existing thing, then it would follow that the activity cannot itself be enacted as further thought-forms.

I think this is why he stops here concerning this topic, but I don't find Aristotle himself saying why he stops (unless it is in a very compressed way right here in our line and the preceding one: "It is in substance activity. For that which makes is always superior. . . Knowledge in act is identical with its thing.")

At the end of the next section I can show more clearly where Aristotle stops.

6) Quotations from Metaphysics XII-6-10:

In Metaphysics XII, 6-10 the argument follows the same steps as in our chapter III-5, but with more detail. The topic is the universe, not the soul, but the quotations show that there seems to be no sharp distinction except in terms of time. We can view III-5 against the backdrop of this longer version. Aristotle is quite brief here too, but he states more of what he means.

The passages I present are all taken from the same few pages, Metaphysics XII-6-10, 1071b18 - 1075a24. I have kept them in the order in which they appear. I left the English word "thinking" (rather than "understanding") for the word "noein" in many places so that famous sentences can be recognized.

As in our chapter, Aristotle starts from potentiality and moves to activity. If everything is only potential, all motion in the universe **could** stop. If that cannot be so, there must be eternal **activity**. (energeia, the source of motions). ***As in III-5, he concludes that the principle of an eternal universe is "in substance activity."***

if its substance is **potentiality**, ... there will not be *eternal* movement, since that which is potentially may possibly not be. There must, then, be such a **principle**, which is **in substance activity**.

ἢ δ' οὐσία αὐτῆς **δύναμις**: οὐ γὰρ ἔσται κίνησις αἰδιος· ἐνδέχεται γὰρ τὸ δυνάμει ὄν μὴ εἶναι. δεῖ ἄρα εἶναι

ἀρχὴν τοιαύτην ἧς
ἡ οὐσία ἐνέργεια. (107b18)

There are more than one of these (he does not say why here):

Further, then, these substances must be without matter; for they must be eternal, if *anything* is eternal. Therefore they must be activity. (1071b21)

ἔτι τοίνυν ταύτας δεῖ τὰς οὐσίας εἶναι ἄνευ ὕλης· αἰδίου γὰρ δεῖ, εἴπερ γε καὶ ἄλλο τι αἰδίου. ἐνέργεια ἄρα.

As in our chapter he distinguishes between active making and becoming something. Like “art and its material,” the universe must include something like the art of carpentry, not only something like wood.

For how will there be movement, if there is no acting cause? **Wood** will surely not move itself; **the carpenter's art** must act on it; (1071b29)

πῶς γὰρ κινηθήσεται, εἰ μὴ ἔσται ἐνέργεια τι αἴτιον; οὐ γὰρ ἡ γε ὕλη κινήσει αὐτὴ ἑαυτήν, ἀλλὰ τεκτονική,

In I-2 he cited “Anaxagoras as saying that **nous** set the whole in motion.” (404a25-27). Here he cites Anaxagoras in support of saying that nous is activity

That activity is prior [to potentiality] is testified

by Anaxagoras, for his 'nous' is activity.(1072a5)

ὅτι δ' ἐνέργεια πρότερον, μαρτυρεῖ Ἀναξαγόρας ὁ γὰρ νοῦς ἐνέργεια

But **how** does nous move everything else? It functions as a final cause:

Since that which is **moved** while it moves [something] is [only] intermediate, there is something which moves without being moved, something eternal which is substance and energeia (1072a24).

ἐπεὶ δὲ τὸ κινούμενον καὶ κινοῦν [καὶ] μέσον, κινεῖ ἔστι τι ὃ οὐ κινούμενον κινεῖ, αἰδίου καὶ οὐσία καὶ ἐνέργεια οὕσα.

As the source of all motion, nous is an unmoved mover.

It moves in the following manner: And **the object of desire** and **the object of thought** move in this way; they move (something) without being moved. **The primary objects of desire and of thought are the same.** (1072a26)

κινεῖ δὲ ὧδε τὸ ὄρεκτόν καὶ τὸ νοητόν· κινεῖ οὐ κινούμενα. τούτων τὰ πρῶτα τὰ αὐτά.

How does an object of desire cause motion? For example, you see someone attractive on the other side of the room. You move in that direction; the other person does not move and need not notice.

The object of desire, nous, is also the object of thought (noeton).

And **thought (nous)** is moved by the **object of thought**, (1072a30)

νοῦς δὲ ἐκ τῆς τοῦ νοητοῦ κινεῖται.

In the next lines please notice that Aristotle is clearly speaking about God or the universe. Further on what he says seems to fit only the human soul, but we can see here that he is speaking of the universe.

On such a principle, then, depend the heavens and nature. (Metaph 1072b.13)

ἐκ τοιαύτης ἄρα ἀρχῆς ἤρτηται ὁ οὐρανὸς καὶ ἡ φύσις.

Its life is **like the best which we enjoy for a short time**

for it is ever in this state which for us is impossible, '1072 b14-16

διαγωγὴ δ' ἐστὶν οἷα ἡ ἀρίσομετηνγ μικρὸν χρόνον ἡμῖν οὕτω γὰρ ἀεὶ ἐκεῖνο· ἡμῖν μὲν γὰρ ἀδύνατον,

In terms of time there is a clear distinction, but I think the sameness is startling (“like the best which we enjoy”). Clearly he continues about the active nous of the universe.

Now come several versions of our sentence:

And thought thinks on itself because it **participates** in the object of thought (**noeton**), for it becomes an object of thought in coming into **contact with (grasping, thigganein)** and thinking its object, so that **thought and what is being thought are the same**. . . . (1072b19-23)

αὐτὸν δὲ νοεῖ ὁ νοῦς κατὰ μετάληψιν τοῦ νοητῶν· νοητὸς γὰρ γίνεταί θιγγάνων καὶ νοῶν, ὥστε ταῦτὸν νοῦς καὶ νοητόν.

The last line is almost our sentence. But the word he uses here is “noeton.” Later the word is “nooumenon.” This spot here may be parallel to the version of our sentence in our III-4. Active knowing (theorein) comes in the next line.

If there were a definite distinction, the terms in this passage would surely apply more fittingly to our nous. The word “**participates**” (μετάληψις, metalepsis) seems an odd description of

what the nous of the universe does. Similarly, *θιγγάνων* means to grasp or touch. (Compare *θιγγάνειν* at *Meta IX-10, 1051b22-28.*)

Now Aristotle adds contemplation (*theorein*). We recall from II-1 that *theorein* is knowledge in act.

and the act of **contemplation** (*theoria*) is what is most pleasant and best. If, then, **God is always** in that good way in which **we sometimes** are, this compels our wonder; and if in a better this compels it yet more. And **God's is better**. And life also belongs to God; for **the activity of thought is life**, and God is that activity. . . . We hold that God is a living thing, eternal and most good." (1072b23-28)

καὶ ἡ **θεωρία** τὸ ἥδιστον καὶ ἄριστον. εἰ οὖν οὕτως εὖ ἔχει, ὡς ἡμεῖς ποτέ, **ὁ θεὸς αἰεί**. θαυμαστόν· εἰ δὲ μᾶλλον, ἔτι θαυμασιώτερον. ἔχει δὲ ὧδε. καὶ ζωὴ δὲ γε ὑπάρχει· ἡ γὰρ **νοῦ ἐνέργεια ζωή**. ἐκεῖνος δὲ ἡ ἐνέργεια· . . .

φαμέν δὴ τὸν θεὸν εἶναι **ζῶον** αἰῖδιον ἄριστον

Can we identify “God” with “nous of the universe?” I do so throughout, but one can argue that God is only one among the other not quite distinguished modes of nous.

The activity of God is “*theoria*,” the same as ours (“always **in that good way** in which we sometimes are.”).

eternal and unmoving and **separate** from sensible things (1073a4)

αἰῖδιος καὶ ἀκίνητος καὶ κεχωρισμένη τῶν αἰσθητῶν,

impassive and **unalterable**; (1073a12)

ἀπαθὲς καὶ ἀναλλοίωτον·

The attributes of nous here are similar to the three attributes in our chapter

Now he will take up our problem about nous being empty.

Concerning nous there are certain problems; (1074b15)

Τὰ δὲ περὶ τὸν νοῦν ἔχει τινὰς ἀπορίας·

For if it thinks of nothing . . . It is just like one who sleeps. (1074b17)

εἴτε γὰρ μηδὲν νοεῖ, τί ἂν εἴη τὸ σεμνόν,

Without something it thinks **of**, nous would seem to be empty.

what does it think of? Either of itself or of something else; and if of something else, either of the same thing always or of something different. (1074b22)

τί νοεῖ: ἢ γὰρ αὐτὸς αὐτὸν ἢ ἕτερόν τι· καὶ εἰ ἕτερόν τι, ἢ τὸ αὐτὸ ἀεὶ ἢ ἄλλο.

... it does not change; (1074b26)

... οὐ μεταβάλλει·

... Therefore it must be of itself that the thinking thinks, **since it is the most excellent of things**, and its thinking is a thinking on thinking. (1074b34)

αὐτὸν ἄρα νοεῖ, εἴπερ ἐστὶ τὸ κράτιστον, καὶ ἔστιν ἡ νόησις νόησεως νόησις.

This famous assertion does not yet answer why nous is not empty. As its own object, if it still thinks only its thinking, there would still be nothing it thinks **of**, other than the empty **-ing**.

But it seems that **knowledge and perception and opinion and thinking (dianoia)**

have always **something else as their object**, and themselves only by the way. (1074b35-36)

φαίνεται δ' ἀεὶ ἄλλου ἢ **ἐπιστήμη** καὶ ἡ αἴσθησις καὶ ἡ δόξα καὶ ἡ ἰάνοια, αὐτῆς δ' ἐν παρέργῳ.

It seems that if nous is knowledge it must be about something **else**, but notice that nous is not mentioned in this line-up, only dianoia. **Nous does not need to be about something else.** And, knowledge only “seems” (φαίνεται) always to be about something else.

Since the nous activity is itself the object (the good), Aristotle now asks: Is nous the good as thinking or as object? As he phrases the question, is nous the good as thinking, or as thought **of**?

Further, if thinking (understanding) and **what is thought-of** (understood) are different, in respect of which does the good belong to it?

For to *be* an act of thinking and to be what is being thought (**νοουμένῳ**) are *not* the same thing. (1074b. 36).

ἔτι εἰ ἄλλο τὸ νοεῖν καὶ τὸ νοεῖσθαι, κατὰ πότερον αὐτῷ **τὸ εὔ** ὑπάρχει; οὐδὲ γὰρ ταῦτὸ τὸ εἶναι νοήσει καὶ νοουμένῳ.

First let us understand the technical point. Then we will try to see if it also answers the question about being empty. Due to which defining characteristic is nous the good? Of course nous as activity and as object is the same single thing, but the two definitions are not the same. This is like Aristotle's point that “fire is an element, but **to be** fire is not the same as **to be** an element” (*Meta* 1052b12). For example, this person is a professor, but to be a person is obviously not the same as to be a professor. Two different **definitions** cannot be equated even when one thing is both.

Similarly, in this case the thinking and what is being thought are one and the same thing (nous), but **what makes it a thinking** is not the same as **what makes it something being thought**. **Which makes it the good?** That it is a thinking, or that it is an object aimed-at? The latter is the mode of being which makes nous the good.

To see the meaning of this seeming quibble and why Aristotle thinks he just answered the question about the empty nous, let us recall that “the good,” the final cause, what all nature aims at (II-4, 415a26-415b2), puts everything into motion, but does this in the manner of an **object** of desire (as he just said, 1072a26). So it has meaning to say that the good moves everything **in its role as the object** (the aimed-at final cause).¹⁵

Now that thinking thinks itself as the object, Aristotle can answer the question about thinking being either empty or being always about something else:

We answer that in some cases **the knowledge is the thing** (πρᾶγμα).

In the productive sciences it is the substance or essence of the object, matter omitted, and in the theoretical sciences it is the logos, the thing, and the act of thinking.

Since thinking and the object of thought are not different in the case of things that have no matter, the thinking and the object of thought will be the same,

i.e. the thinking will be one with **the object** of its thought (νοούμενω). (1075a2-5)

ἢ ἐπ’ ἐνίων **ἢ ἐπιστήμη τὸ πρᾶγμα**, ἐπὶ μὲν τῶν ποιητικῶν ἄνευ ὕλης ἢ οὐσία καὶ τὸ τί ἦν εἶναι, ἐπὶ δὲ τῶν θεωρητικῶν ὁ λόγος τὸ πρᾶγμα καὶ ἡ νόησις; **οὐχ ἑτέρου οὖν ὄντος τοῦ νοούμενου καὶ τοῦ νοῦ, ὅσα μὴ ὕλην ἔχει**, αὐτὸ ἔσται. καὶ ἡ ν ὀησις τῶ **νοούμενω** μία.

This wonderfully elaborate version of our identity sentence would fit our nous much more easily, but Aristotle is discussing the nous of the universe, or simply nous. If commentators want distinctions they have to bring their own.

Aristotle has still not explained how nous can be identical with the many things of knowledge, since changing from one thing to another involves potentiality, as he said above (1074b22-26). The object has to be one, not many. But now at last that is his next question:

A further question is left: whether **the object** of the thinking is composite; for if it were, it would change in passing **from part to part of the whole**.

We answer that everything which has not matter is **indivisible**. (1075a5-7)

15 As always with Aristotle, the object defines the activity. In living things the activity produces (moving cause) and is (formal cause) the object. Final and moving causes are reciprocal (walking produces health, aiming at health makes us walk).

ἔτι δὴ λείπεται ἀπορία, εἰ σύνθετον τὸ νοούμενον μεταβάλλοι γὰρ ἂν ἐν τοῖς μέρεσι τοῦ ὅλου. ἢ ἀδιαίρετον πᾶν τὸ μὴ ἔχον ὕλη

In time and acquisition of learning we potential knowers are distinct from the active nous. The active nous does not shift from one thing to another, or as Aristotle puts it, it does not shift **“from part to part.”**

Human thought, or rather the thought of composite [form and matter] beings, is in a certain period of time (for it does not possess the good at this moment or at that),

but the best, **being something different**, is attained **in a whole**, so is the thinking that thinks itself throughout eternity. (1075a8-11)

ὡσπερ ὁ ἀνθρώπινος νοῦς ἢ ὅ γε τῶν συνθέτων ἔχει ἐν τινι χρόνῳ οὐ γὰρ ἔχει τὸ εὖ ἐν τῷ δὲ ἢ ἐν τῷ δὲ, ἀλλ' ἐν ὅλῳ, τινὲ τὸ ἄριστον, ὃν ἄλλο τιτὸ οὕτως δ' ἔχει αὐτὴ αὐτῆς ἢ νόησις τὸν ἅπαντα αἰῶνα;

The phrase “being something different,” tucked in here, does make a distinction between the human eternal nous and God’s. It applies to how we attain to the good bit by bit and have it only for a short time.

Where Aristotle stops:

In *Metaphysics* I, in the second chapter, Aristotle is introducing the whole book. The name “Metaphysics” was given to it by later compilers. Aristotle called it “*First Philosophy*.” He introduces it by saying that it contains not only knowledge **about** God but also **God’s own knowledge**. What other author has introduced a book with this startling claim? The claim tells us right at the start (*Metaphysics* I-2) that our nous is not simply distinct from the nous of the universe. And he goes on to say that in a certain way a *sophon* (a wise person) knows “all things.” The particulars are known through the universals; the many universals are known through the most causal ones, and the causes are known through the ultimate (final) cause, the good. This constitutes a whole, everything known through one.

Throughout XII he has spoken of nous at least as the unmoved mover, the one system of the many unmoved movers, God, noesis activity, contemplation, the thinking that thinks itself, the highest good and the first understandable, and he has always continued about “it” . . .)

Now, in this last question he asks just in what way nous is identical with the good (i.e., nous), as separate or as including the whole?

We must consider also in which of two ways the nature of the whole contains the good and the highest good, whether as something separate and by itself, or as the order of things. **Probably in both ways, as an army does; for its good is found both in its order and in its commander,** and more in the latter; for he does not depend on the order but it depends on him. (1075a12-16)

Ἐπισκεπτέον δὲ καὶ ποτέρως ἔχει ἢ τοῦ ὅλου φύσις τὸ ἀγαθὸν καὶ τὸ ἄριστον, πότερον κεχωρισμένον τι καὶ αὐτὸ καθ' αὐτό, ἢ τὴν τάξιν. ἢ ἀμφοτέρως ὥσπερ στρατεύμα; καὶ γὰρ ἐν τῇ τάξει τὸ εὔ καὶ ὁ στρατηγός, καὶ μᾶλλον οὗτος· οὐ γὰρ οὗτος διὰ τὴν τάξιν ἀλλ' ἐκείνη διὰ τοῦτόν ἐστιν.

Another proportion: The good **is to** the universe as the commander **is to** an army. The commander is fully separate from it but in a way he is **also** the ordering which makes those men an army. As Aristotle has nature do in II-4 (415b1), each part of an army acts on its own but aims to realize the commander's plan. The sergeant acts on his own initiative to discipline the privates; the lieutenant moves company B; everyone originates activities so as to bring about the overall order constituted by the commander.

Another not-quite distinction within nous. The commander is both separate and the order of the whole. As with the other facets of nous, the separateness of each is not diminished by them all being nous. As we saw in II-4, 415b2, nature moves from itself to aim at the eternal ordering which does not move. Each thing participates to the extent it can.

Aristotle has it both ways. The thinking that thinks itself, considered as its thing and as the object of desire, is the aimed-at good, and for that reason also the order which is the organizing good toward which every self-organizing thing tends. Aristotle has again divided and yet not divided within nous.

He delineates very simply how the independent things exist in the order of the whole:

And all things are ordered together somehow, but not all alike, both fishes and fowls and plants; and the world is not such that one thing has nothing to do with another, but they are connected. For all are ordered together to one end,

πάντα δὲ συντέτακται πῶς, ἀλλ' οὐχ ὁμοίως, καὶ πλωτὰ καὶ πτηνὰ καὶ φυτὰ· καὶ οὐχ οὕτως ἔχει ὥστε μὴ εἶναι θατέρῳ πρὸς θάτερον μηδέν, ἀλλ' ἔστι τι. πρὸς μὲν γὰρ ἐν ἅπαντα συντέτακται,

Aristotle has insisted throughout that there are separately existing-things as well as that their self-organizing is inherently interrelated in one order (De An II-4). So he is consistent here too.

but it is **as in a household**, . . . all share for the good of **the whole**. (1075a16-24)

ἀλλ' ὡσπερ ἐν οἰκίᾳ . . . ἔστιν ὧν κοινωνεῖ ἅπαντα εἰς **τὸ ὅλον**.

Still another proportion! "As in a household." We have already had the commander of an army, and the object of desire. Aristotle does not continue further on the topic of nous. He goes on from this spot to criticize the views of other philosophers.

Very strikingly, Aristotle leaves these proportions open-ended, formulating no further specifics. This mortal author who has the hubris to claim that his book is God's own knowledge now stops **within proportions from** the homey familiar things of our world.

Like his distinctions within nous, these proportions do not lead to further concepts. We are accustomed to Aristotle's proportions. We have often seen him say "as this is to this, so that is to that," but then he always went on to specify what is the same and what is different. (See ENDNOTE 101). He does not do that here.

118. On "Holos Not in Time" 430a20-21

As potential, it [nous] is prior in time **in the individual**, but **according to the whole** (holos) **not in time** and there is not **when** it is thinking and **when** it is not thinking.

ἡ δὲ κατὰ δύναμιν χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλωσ δὲ οὐδὲ χρόνῳ, ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ.

We will consider: 1. The sentence about the potential nous in time.

2. Why, for Aristotle, an activity need not be
in time.

1. My reading is unusual only about the potential nous, whether it too is "holos" and not in

time. The sentence has usually been translated: "Potential [knowledge] is prior in the individual but not prior even in time according to the whole." The word "knowledge" has to be supplied. Aristotle says only "kata dynamin," and "it." He says only: "Considered potentially it is prior in the individual, but holos not in time." I think it is more straight forward to read the "it" as referring just to nous, considered here in two ways, potential and active. Considered as "holos," nous is always active, and not in time.

Aristotle rarely repeats a phrase when he says that something is a certain way in one sense, but in another sense not. Typically, he would not have repeated "in time" if he had meant the potential nous. He would have said only "in the whole, not." Since he says "not in time," it is very unlikely that he is merely repeating "in time" about the potential nous. δ' αὐτό ἐστιν ἢ κατ' ἐνέργειαν ἐπιστήμη τῷ πρᾶγμα ἢ δὲ κατὰ δύναμιν χρόνον προτέρα ἐν τῷ ἐνί, ὅλωσ δὲ οὐδὲ χρόνον, ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ. (430a.19-22)

"Not in time" leads perfectly to his next thought which is not about the potential nous: "There is not when it thinks and when it doesn't think." Since this is obviously active nous, Ross and Hett have to supply something again, a new subject. As I am reading it, "holos" already refers to it.

But this may be unimportant since everyone agrees that active nous is not in time.

2. An activity need not be in time, because an activity does not change. It may organize a lot of changes under it, but the activity does not itself change. (See ENDNOTE 42 in II-4 ON THE MEANING OF THE WORD "ACTIVITY" IN CONTRAST TO "MOTION.")

"Not in time" is often read as static, lasting eternally, hence after all in time, but in endless time. We must guard against interpreting Aristotle from a Newtonian viewpoint, as if time existed first and alone, and as if anything real must exist in time.

In many places Aristotle argues against the existence of the infinite linear time which we are accustomed to assume. For him that potentially infinite time is derived from the potentially endless sequence of numbers; one can always count up further. For Aristotle, time exists only as a measure of an actual motion and only if nous measures. There is no time without psyche and nous (Physics IV-14, 223a26-30). For Aristotle much of what exists is not in time.

Since, for Aristotle, activity is first, and may determine a time or not, the question

changes. Instead of thinking first of time, and then of events filling it, we must try it the other way: **Events happen, and only some of them make places and times:** For example, suppose you live in a house without any trees near it. You would not say that you had a lot of tree-heights so that all you need now is some trees to fill those heights. Yet we are used to thinking of time and space as if they first existed alone, as if real things came second and only filled them. Even if you did speak of tree-heights -- if you complained that there are only spaces instead of trees -- still Aristotle would argue that it is **your activity of living in your house** which determines the definite places where you wish there were trees. Similarly, there is no time antecedent to nous so that nous would be only **in** it.

Since for him time depends on motion and measurement by nous activity, he sees no problem about an activity that is not in time. For Aristotle an activity may, but need not, determine a time. An activity that does not act **on something** is quite possible for Aristotle, but it would not be in a place or a time. To express his view, it may help us to use the word "energy" which derives from **energeia**, the original Greek word for "activity." We have no trouble thinking of energy as existing whether it drives some machine and makes some change, or not.

As sophisticated philosophers we doubt **any** criterion of reality, but lacking another way of thinking, we tend to assume that something can be real only if it fills space and time, regardless of whether it is active or not. In contrast, Aristotle thinks that activity is real, regardless of whether or not it happens in a space and a time.

MY COMMENTS ON TIME CONTINUE IN THE NEXT ENDNOTE ON THE SOUL NOT IN TIME:

119. On the Soul Not in Time

Commentators frequently discuss the soul after death, but they rarely ask about it before birth. In the Christian tradition the soul does not exist before conception. We rarely see the passage mentioned, where Aristotle plainly says that the eternal part of the soul comes into the embryo from the outer cosmos.

"either **none** of the parts of soul **exist beforehand** (οὔσας πρότερον) and all come to be formed within the embryo, or **all** [exist beforehand] ... or **some** exist beforehand, and ... come from some outside source (*Gen of An* II-3, 736b16).

There can be no walking without feet and this rules out the possibility that [the capacity for locomotion] enters from outside. . . . Only the nous enters in, as an addition (epeisthienai, a go-in-to) from outside, because this activity has nothing in common with the activity of the body. (736b28) λείπεται δὴ τὸν νοῦν μόνον θύραθεν ἐπεισιέναι καὶ θεῖον εἶναι μόνον· οὐθὲν γὰρ αὐτοῦ τῆ ἐνεργείᾳ κοινωνεῖ <ή> σωματικῆ ἐνέργεια.

Aristotle is proportioning between walking and understanding. If understanding were like walking, it would be related to some bodily part as walking is related to feet. The activity **of feet** does have a beginning, since feet do. But, understanding (nous) is not the activity **of** a bodily part (III-4). Therefore this activity does not begin with the genesis of the bodily parts. Aristotle argues that if an activity is not the activity **of** something that begins, then the activity has no beginning.

Just as walking is with feet, remembering is with a bodily part. This is the “koine,” the last (touch) organ. (See the first pages of *M&R*.) That is why learning and memory begin and end. With them there is time. In life our understanding-activity **determines definite times** (via the potential nous), as we saw in *De Anima* III-2 (426b24) and III-6 (430b9).

We are inclined to ask: “But can this part of the soul have existed from the beginning of time?” Of course the question reads time back in. But Aristotle seems not to assume an overarching time.

To follow him we have to keep correcting our impression at every step because the assumption of a time-frame is implicit in most of our concepts. It is hard for us to conceive of activity as existence simply without the frame of a time. But separate nous does not determine any times. The part of the soul that is nous is not **now** active and **now** not.

120. On Technical Issues in the Last Sentence

Two technical problems in the last sentence cannot be resolved, but they need not be. The conflicting views can all be supported by combining various readings.

The sentence can be translated in the following four ways:

- a1) Without the active one, [the passive one] thinks (noein) nothing. a2) Without the **active** one, nothing thinks .

b1) Without the passive one [the active one] thinks nothing, b2) Without the **passive** one, nothing thinks.

a) As I prefer to read it, the last phrase almost certainly refers to the active nous. By the grammar the *pathetikos* is in contrast to it.

We can wonder why he adds this clause “without it nothing thinks” at the end. But if we remember that Aristotle didn’t make the chapter divisions we see that as usual he is leading to his next topic, **III-6 which shows that nothing thinks without the active nous**. In III-6 he shows that active nous functions in each kind of thinking. So we can see why he would launch into III-6 by saying here “and nothing thinks without it.”

b) If we read with b) that there is no thinking without the perishable *pathetikos*, then it seems that the separate active nous must be empty alone. To remedy this, some commentators can argue that the potential nous survives as well as the active one. One can argue that the “nous *pathetikos*” which is here explicitly said to “perish” does not refer to the potential nous; the perishable “*pathetikos*” is rather only “*dianoia*” and imagery. Brentano argues that since the potential nous is unaffected (*apathe*, III-4, 429a15), it cannot be the “*pathetikos*” here, which perishes. It seems that the potential nous cannot die since it is not mixed with the body.

Does the fact that the potential nous is unaffected show that it doesn’t die? I think “unaffected” does not mean “eternal.” Aristotle likens the potential nous to the capacity of a blank tablet for all knowledge. Its receptivity **for meanings** is not physically affected; nevertheless its capacity to receive meanings perishes along with the tablet.

But one can certainly argue that “nous *pathetikos*” refers just to *dianoia* and memory. The potential intellect is not *dianoia*, rather that with which we do *dianoia* (III-4, 429a23). *Dianoia* involves the body. Aristotle says that human individual differences in the precision of *dianoia* depend on differences in the fineness of the flesh (421a27-30). In contrast, the potential nous does not involve the body. It is not an attribute of the common-sense and memory organ. The word “*pathetikos*” means capable of being affected (*DeGen* I-7, 324b18),

whereas " [nous is] in itself unaffected. And thinking (dianoesthai) and loving or hating are **pathe** not of that, but of the individual thing which has it, in so far and it does. Hence when this too is destroyed we neither remember nor love" (I-4, 408b24). Memory and imagery are said to be a **pathos** of the "koine," which is how Aristotle refers to the organ where the senses come into contact with each other, and which is also the organ of touch. (See the start of *Memory & Recollection*.) The koine perishes. It can fit to call the koine "nous pathetikos." In II-2 (413b12), in the list of potentialities it is dianoetiko, not nous. So b) can come by a different path to the same result as a).

121 - 122. On "Only Metaphysical"

Hamlyn commenting on III-5, writes that the distinction between potential and active nous is used "**only** in a metaphysical way" (p.140) and has "no other role than that of a metaphysical ground ...". But the phrase "**only** in a metaphysical way" is a modern Western notion. Western metaphysics asks how it is possible that mathematics applies to nature, as it obviously does. This is a question no practical scientist needs answered. In current usage (for example Turing) one can ask whether the difference between humans and computers is real **or** "**only** metaphysical." Hamlyn thinks that the active nous is only "a necessary condition for the actualization of potentialities." We are so accustomed to Kant who asked about formal principles which "must" be true, if physics is to be possible -- a "metaphysics" that is unnecessary because it makes no real difference. Currently "metaphysical" means something that cannot be experienced directly.

In my view one has to remove the "only" in front of "metaphysical" as Aristotle uses the word. As I read him, metaphysics is involved in everything. It is not a segregated realm. Metaphysics is about substances, especially (malista) about the body-generating, perceiving, and thinking substances that are the topics of our book.

For him "a metaphysical ground" or "principle" is **a secure starting point, something directly experienced** which is in some sense self-establishing, once you arrive at it. For all the great complexity he builds into this concept, "nous" also means our ordinary self-grasping-understanding; our own activity. We can certainly doubt its eternity and much else that Aristotle says about it, but I think he also means that we cannot avoid being **directly** "**aware**" of understanding, as we say in English. For Aristotle awareness or consciousness is

not something **separate**; he thinks of it rather as just this obvious self-turn. He pointed to an analogous self-turn also in the case of sensing that we sense. Hamlyn seems to accept the “actualizing” but not the self-awareness of understanding. I think this is reversed: The self-turning to which Aristotle points seems ordinary and obvious to me, whereas the argument that nous “actualizes” the forms seems complex and easy to doubt. As I read it, Aristotle's use of the term “principle” remains experience-near. It should not be kicked upstairs to a realm of prestigious ideas.

Similarly one can easily doubt what he says about the universe, as he proportions to it from our experience and our world. It is a famous speculative statement that the universe is like carpentry and wood, not like only wood. But whereas any attribution to the universe is surely doubtful, **the starting point from which this is asserted**, could not be more familiar and obvious.

123 - 126. On Noemata and Kechorismena

“Noemata” means something very different than “noeta.” As we have seen, a noeton is something that exists, whereas a “noematon” is a presentation, a “Vorstellung.” For the analogous difference, compare “*aistheta*” (sensible things) with where Aristotle uses the word “*aisthemata*” when he says: “To **the thinking soul**, (διανοητικῆ ψυχῆ) **images serve** as sense-presentations (αἰσθήματα), and **when it affirms** (φήσει) or denies (ἀποφήσει). . .” (III-7. 431a14-16). Aristotle says that we have the power to divide and recombine our thoughts falsely, but of course we cannot falsely combine the existing understandable things. That is also why Aristotle says “like”one existing thing (ὅσπερ ἐν ὄντων). The example shows this, since “heads grew without necks” is not an existing thing, only **like** one thing.

Aristotle's use of the word “noemata” corroborates my ENDNOTES ON NOETON AND ON KNOWLEDGE IN ACT.

“Kechorismena” means not simply separates but separated**eds**. According to the grammar, the ending of the word means these were separated**ed**. They were not originally separate.

127. On Zeno's Paradox

Aristotle “solved” Zeno’s paradox by distinguishing “indivisible **in act**” from “not indivisible **potentially**.” (Not indivisible **potentially** simply means potentially divisible; you could stop and divide it.) Zeno argued that motion is impossible since moving requires always first crossing a part of the space, and first half of that, and before crossing all the way again first the half of that, and again first its half, infinitely, so that nothing could move across, however small the gap might be. Aristotle argues that **divisibility is only potential**. Motion is possible because it is **indivisible in act**. A motion or a given length is indivisible in act. It could be divided, but that is only potential. In act it **cannot** be divided. In act motion and length are indivisible.

The great import of this is that for Aristotle continuity is prior to division. Even lower animals sense motion directly, not by uniting separate points or bits.

The word “indivisible” (*ἀδιαίρετον*) is often mistranslated as “undivided” but that is just wrong. If the distance traversed by a motion or act were merely undivided, Zeno **could** divide it as he wanted. So it **could** consist of halves and halves of halves, indefinitely. For Aristotle, lines are not merely undivided in the act of motion or attention, they are **indivisible** in the act. This means they **cannot** be divided in act. In motion or while seeing there is no such potentiality to divide. So we cannot substitute “undivided” for the Greek word “indivisible,” even if it were otherwise permissible deliberately to mistranslate a word (especially since the Greek for “undivided” (*μη διαίρεθη*) also appears in this same passage).

The whole chapter consists of various kinds of “indivisibles” in contrast to divisibles, divideds, and combinations.

I used quotes to say that Aristotle “solved” the problem which Zeno poses, because one can argue (Cherubim 1999) that Zeno presented **both** sides of the paradoxes, whereas Aristotle seems to choose just one side (continuous intervals) as real or “in act”, and conveniently considered the other side of the paradox (dividing points) as merely potential. It seems true that both sides of Zeno’s paradox follow from the usual mathematical conception of **points and intervals** in space and time. Since one can derive **both** infinite divisibility and unity-continuity, one can consider Zeno right and Aristotle merely devious.

However, the more important point is that for Aristotle real motions and actual events do not happen in an already given space-time grid. On the contrary, only ongoing interactions and

motions determine locations and times, as he argues right here. Only the act of putting a point, or a motion that stops at a point, determines a definite location and time, and makes a division. For Aristotle **both** continuity and determined divisions depend on activity or motion.

128. On Indivisible Substances

To grasp Aristotle's point here about grasping **indivisible** understandable things, let us compare him to Kant in this respect. For Kant separate units are given, and unity has to be brought to them. Every concept is the product of a prior synthesis. The concept consists of all the judgments that can be made with it. Kant attributed all unity to the unity of a judgement (the subject-predicate bond in a sentence) and he attributed this unity in turn to the person's unity. In the West cognition is therefore widely considered "subjective" and ungroundable. The unity of cognition does not arise from nature, but stands like an Archimedean point over against nature. Unity is a spectator's imposition.

In contrast, for Aristotle a substance is not its predicates. The substance is not a combination of separable traits and possible judgments. Concept and judgements are not convertible. Here the understanding is quite different. **For Aristotle, there are indivisible grasp-objects, objects that are not results of combination.** Substances are known **directly from sensation.** We have seen throughout how very much Aristotle accounts for by sensation, much more than is attributed to sensing in the modern West. The unity Kant attributes only to cognition comes for Aristotle already in sensing. And sensing involves a concretely active medium, not mere representation. For Aristotle we **sense** motion and a line directly **as a whole**, not by synthesizing static bits. Similarly, and more basically, we sense substances as indivisible forms.

We grasp an indivisible form in somewhat like the same way as we grasp the form of a face. We recognize the person, and this can be had only as a whole despite the fact that it consists of eyes, a nose, and so on. But the face can be reduced to proportions between all the parts so that it can be reproduced on some surface. Aristotle argues that a substance is not the unity or proportions of its elements or parts, not the unity of all the predicates that can be correctly attributed to it. Every trait in the bundle that seems to define you is also true of someone else. (Metaphysics VII-15, 1040A13). Similarly, a substance is not, for example, "animal" plus "two-footed." (Metaphysics VIII-6, 1045a15).

Human being or dog are **indivisible forms, not combinations**. As a dimensional thing one can divide a dog in half, but as a form one cannot. For Aristotle, the form of a substance is inherently a unity. The direct grasp he will now talk about is the only way to understand it.

129. What Makes the Unity of Mathematics?

Aristotle ended the passage about combinations like “Cleon is white” by saying that the unity is provided by nous. But we must not say that **only** the indivisible part of the soul provides the unity of mathematical objects, as if from antecedently separate bits. Aristotle says that “there is **in them**” something that makes them one. Although mathematical objects don’t exist separately nor in things (Meta. 1043b33, 1076b1-13, 1077b20-28), they do exist in their own way. They are a kind of objects for Aristotle. He calls them “abstract objects.” Their matter is the syneches, the continuous. For Aristotle continuity is prior to division, **both in mathematics and in the universe**.

130. On a Point As Privation

As usual, Aristotle proceeds from natural things to mathematics and then metaphysics. A single point can divide and also unite two parts of a line. We saw that **combining** (a thing with white) is the same as **dividing** (the thing from not-white). In III-2 (427a10) he used a point as the analogy for how the sense remains one as it discriminates between two. A point is itself one, and it also has two other identities as the end of one segment and the start of the other. We recall that the sense of touch functions like this; without itself changing, it is the hot in regard to a cooler object, and the cold in regard to hotter one.

A point is itself “indivisible” yet to put a point onto a line is to divide it. Putting a point is the unitary act which divides, like the one that discriminates two. **The indivisible point has the unity of the discriminating act.**

A point is the privation-contrary of continuity. We sense the dark by sensing that we don’t sense. The dark is an object of our activity of seeing (that we don’t see). We sense number by reflexively sensing the interruption in our own motion, the privation of its continuity. To think the concept of continuity, the soul must have the contrary -- the potentiality of the

dividing type of unity, dividing and connecting two sides. Each contrary is known (and made) through the soul's potentially being both.

In Aristotle's example, "good and evil," we think the privation by means of the positive, and we always think the opposite **potentially**, whichever one we may just then be thinking actively. (Even the good has an opposite.)

Instead of "by contrary" we can also read "**by means of distinction.**" This is another way to understand the role of the point and "division." **We know each through the other.**

So it follows, that "If something has no contrary, αὐτὸ ἑαυτὸ γινώσκει, it **knows itself through itself**, (not through a division from something else.) God is "most good" and has no matter, no opposite.

131. On "Knows Itself"

"That which cognizes (γινώσκον) **must be its object potentially**, and the latter **must be in it**.

In other words, we know by supplying the matter, the continuum of changeability on which the given object is one possibility.

But if there is anything, some **one of the causes**, which **has no contrary**, then **this will cognize itself through itself, and is activity and separate** (*chōristos*)."

εἰδέ τιμι μηδὲν ἔστιν ἐναντίον [τῶν αἰτίων], **αὐτὸ ἑαυτὸ γινώσκει** καὶ ἐνέργειά ἐστι καὶ χωριστόν. (430b24-26)

Aristotle says that substances have no contraries. (Meta XI-12, 1068a10). What would be the opposite of a human or a tree? So it can seem wrong when he says here that if something has no opposite then it knows itself through itself, is activity, and separate. Commentators often say that Aristotle suddenly switches to talking only about God, without announcing this. But I think Aristotle does mean these assertions to apply to both sensible and immaterial substances, although in slightly different ways.

In ENDNOTE 111 I cited many passages in which Aristotle speaks about the forms of sensible substances and then goes on immediately to speak of things that actually exist without matter. Our spot in III-6 here is one such passage. I think he speaks of **both** because much of what he has to say applies to both. I think I can show this here.

Of course there is a great difference between sensible substances and any that exist

immaterially. But he says relatively little about the latter. For Aristotle's whole approach the distinction between substances and other things is a much more important difference. The whole Metaphysics is about substances, both sensible and immaterial ones, in contrast to anything else. And in our passage we can see one way in which this distinction applies. We want to see this exactly:

The form of a substance (sensible or immaterial) has to be grasped as a unity since it cannot be composed or derived as an arrangement of other things.

In III-4 Aristotle's systematic progression started with "a magnitude and the being of magnitude **are different**." The thing and its being differed in all the cases (extended things, water, flesh, curves (from "snub"), straight lines and numbers like "two.") Snub can't be understood without nose. There cannot be a line without the syneches. These things could not be understood without supplying the matter from imagery. None of those things were substances. Aristotle did say there parenthetically that in certain other cases a thing can be the same as its being.

We have to notice that he brought up the substance-forms ("eide") near the end of III-4 when he spoke of the understood forms (eide) as being identical with nous (understanding), which means they are not different from their being. Although **in matter**, their being does not exist in terms **of matter**, i.e., not in terms of something else, not like a magnitude's being is a composition of elements, not like water's being is the cold and liquid, not like a line's being is two. The eide are their own form. They are just the understanding of them, not defined in terms of something else.

The place to discuss this difference is here in III-6, Aristotle's discussion of the different **kinds of objects** of understanding, always in parallel with the activity of understanding them. Here in III-6 Aristotle follows a similar progression as in III-4. When he arrives at the substance forms, he says again that since they have no contraries, they **are** self-understanding. They have to be directly grasped (thigganein).

But in our chapter he explains how the other things are understood so that we can see the contrast to substances. So far he has discussed understanding things by combining, by supplying the contrary, by supplying indivisibility or dividing in the mathematical continuity, and by grasping the single form of a substance.

In the Metaphysics Aristotle uses the word "thigganein," literally something like grasping, having a hold of.

Since substances **cannot** be understood in terms of a matter, the relation of the substance-forms to their matter is basically different. They are not understood in terms of some identifiable matter that would be understandable in itself like a nose or a line. There is no separately understandable matter since substances generate their own unique matter. With most of the substances we know we must include the fact that they exist only in matter, but that does not help us to understand their form. And a substance has no opposite, so we cannot understand it in contrast with its opposite. A substance is not understandable in terms of something else. Its being (what it is) is its form. (See ENDNOTE 2 and 105.)

How can the form of a material substance **be** (the internal power for) its activities? If we have not already explained to ourselves what he means, here we can and need to understand it as part of understanding him about substances. How can activity shape a substance?

The question is not answered just by granting that its uniquely generated matter doesn't provide a separate explanation of the form of a substance. How does Aristotle think that its activity-form is in its body? Is there no conceptual bridge that would enable us to understand the form in relation to its material parts? What is the bridge between the "separately understandable" substance-form and the material body and bodily parts in which it exists? We can't just leave the body undefined and assert that it's form is its activities. Surely there has to be a bridge.

As we ponder this question it leads us to the recognition that the whole De Anima is the answer precisely to this question. The answer is that understanding the living **activities** enables us to define an internal power to originate them if we also understand this power as shaping the body. This is what Aristotle was explaining in II-1, II-2, and II-4 about how each kind of soul and body fit together since the power for the activities is the actual character of the body. If a given life-activity is to happen from a body, that body has to be shaped in such and such a way and has to have such and such parts. The soul is the bridge that explains how form is activity, really the power for the activity. How can activity be a form? This is answered when we see that the organ-form of the body is determined by the activities. The activities explain the functional organ-organization we see in living bodies. The **power for** internally arising life-activities (whether the activities are actual just then or not) requires the **actual** form of the living body. We need to grasp the main activities and the main organs. Detailed activities and functional parts can be discussed in other books which are all determined by this link, that the power to originate the life activities **is also** the actual shape and character of the body and its

parts, i.e., the soul. So yes, there is a link between activities and material bodies, and it has been the topic of our book.

For living things Aristotle distinguished this odd link, a soul, something that is a potentiality for activity but an actuality of a body. In Aristotle's language, "**form is actuality** (literally completeness, *entelecheia*) -- and that **in two ways**, . . . as knowledge is, and . . . as contemplating is." (412a10-11)

A substance-form (e.g., the soul) is not an arrangements **of** its matter. The soul is not the organ-organization. If it were, an axe would have a soul. The continuity Aristotle builds between activity, form, and matter is very tight. One thing is activity, form, and matter, but it is a functioning unity, not explainable in the ways Aristotle reviewed up to our point here in this chapter.

Material substances are self-knowing when they are in act as just forms, i.e., when we grasp one directly. Our understanding activity **is also their** self-understanding activity.

Substances that actually exist **without** matter would be just activity, always in act and always just their self-organizing, self-understanding form.

I am not sure but I think one can also read Aristotle to be saying that since active nous (ours and the universe) is always in act and of the whole, therefore the forms of the material substances are also always in act.

On anything without a contrary being indestructible, see *Length of Life* II, 465a12-b10, and ENDNOTE 28 in II-2.

132. The Movement from the Top Down and Back Up Again.

For the third time Aristotle begins at the top and swiftly drops down to come slowly up to the top again. He did this **about activity** in III-4-5, citing Anaxagoras' world nous, then beginning with the potential nous in III-4 to arrive in III-5 at the identity of nous activity and things, including timeless metaphysical things.

In III-6, the chapter **about thought objects** he began from those indivisible objects, immediately dropped down to sensible things such as Cleon, and slowly worked back up through mathematics (divisible or indivisible depending on our thinking) to the indivisible

objects that have no contrary and are grasped singly without combination and so without error.

Here in III-7 he moves down and up again, this time **about the combinations** of sense-images together with combinations of thoughts. He starts from the things that everything starts from, the actual things he has just discussed, shows that sense is an *energeia* in contrast to motion, and then deals with sense and thought together, showing how sensible objects and thought objects are combined and proportioned together, and move into action together.

He ends again with mathematical (abstract) and metaphysical thinking at the end.

133. On Four-Way Comparison

The passage is often read as if Aristotle were saying only that pursuit is a kind of affirmation, and avoidance a kind of denial. That would miss the four-way comparison.

Some commentators take all of III-7 to be about practical thinking. But the chapter begins with knowledge in act, and is explicit several times about theoretical thinking without practical implications. The chapter is about sense and thought including how practical thought functions in human action.

134. On the Mean (μεσότης). 431a12 and II-11, 424a5

We have already met this being “active with the perceptive mean” in II-11, but only in regard to the sense of touch. There he said: “the sense being **a broad mean** (*mesotetos*) between the contraries . . .” (hot/cold, fluid/dry), . . . **the mean** (*meson*) **can discriminate** (*krinein*), **for** it becomes to each extreme in turn the other extreme.”

It is quite important to recognize this “sensuous mean” here (and at line 19) as being the μεσότης (*mesotes*) of II-11.

Please turn to ENDNOTE 77 in II-11 where I have a full discussion of μεσότης, μεταξὺ, μέσον. Aristotle’s concept of a “broad mean” is odd but quite important for him. It names the wide range within which the sense-proportion is not violated.

135. On Pleasure

For Aristotle, pleasure is **a quality of an activity**, not a separate experience. Pleasure is not something added. Similarly, there is not first a sensation and then also a pain; the sensation is what is painful. The desire to avoid it or have less of it is also not another thing, but inherent in the painfulness of the sensation.

Pleasure need not be bodily or material. God's activity involves the greatest pleasure (*Meta* XII-7), so pleasure need not be sensuous. Pleasure is the quality of an activity (*energeia*) when it is happening within its own nature, not violated. God's activity, since it is unaffected, is always harmonious, in balance. The inherent character of the activity determines the pleasure, and if chemistry happens to be part of it, then the activity determines what the chemistry must be. The activity of sensing is itself also a giving of proportions, a proportioning. Therefore it is pleasant when what happens falls within the range of its proportion, and painful when excess violates its proportion (III-2, 426b1-8).

Modern Western thought tends to cut the "evaluative" (as we call it) off from what we think of as the "fact." Then decisions require imposing an external evaluative standard, supposedly given only by social training and history, excluded from science. Whether there are inherent standards of good and bad was a major issue in Aristotle's time as it is today. Does living activity itself tend toward the good, or are preferences something added, and brought to a merely factual truth?

Aristotle distinguishes between theory and praxis, but this is not a difference between value-free fact and separated value, rather a difference between universals and individuals.

Aristotle is in no doubt that the good is at least pleasant. Every activity that is in accord with its own nature is pleasant. But he is not saying that the pleasant thing is necessarily good, only that the sensuous mean inherently acts toward the sensed good. Sensation marks the "apparent good," he tells us later, while understanding has the real good for its object.

136. On Noetikon and Dianoetikon

"That which can think (*τὸ νοητικόν*), therefore, thinks (grasps, *νοεῖ*) the **forms** (*εἶδη*) in images, "

Now (431b2) Aristotle speaks of "noetikon" and "noein" (not only *dianoia* and

dianoetikon), and he speaks of the forms of understanding (eide, εἶδη). A little above, at 431a14-16 Aristotle spoke of the **dianoetikon**.

“To the thinking soul, (**διανοητικῆ**) images serve as sense-presentations (αἰσθήματα).”

We can see that in the section between (431a14 and 431b2) Aristotle has proportioned from sense-proportions (white and hot) to forms of understanding.

He continues on, comparing sense and understanding.

137. On Thought and Images, and Situations

The soldiers in the dark see the fire and recognize that it belongs to the enemy. No doubt they are planning and imagining a victory that has not yet happened. (“... **you calculate on the basis of images or** only from **thoughts** ... and **plan what is going to happen** in relation to present affairs.”) Obviously there can be images of events that have not actually been sensed. In III-11 (434a10) Aristotle tells us that images can be combined to form one new one.

Thinking needs images not only for such combinations. If we had only sensations, we would have to stop thinking about a thing when it is gone or has changed. Also, according to Aristotle one needs memories to build universals, and memories are images (M&R). And, without images we would have no “imaginary matter,” the continuum of geometry and numbers. But he does not assume that existing things must happen within it. Living things can be viewed in geometric and measurable continua, but that is not how Aristotle views their existence, rather as activities and powers to organize themselves. We must guard against the modern assumption that imagination provides the organizing layer without which sensations would be incoherent bits,

as in Kant’s philosophy where the “productive” imagination is essential in constituting experience. In contrast, for Aristotle the emergence of thought **directly** from sense is vital precisely for the interactional character of thought, which he has carefully built step by step.

Imagination is not a source. It makes no objects of its own. In the chapter about imagination he asks: “is it one of those potentialities or dispositions in virtue of which we discriminate (*krinein*) and are truthing and falsing? And he answers that this is done only by “sensing, opinion, knowledge, and nous” (428a1-5). For Aristotle, imagination produces no object of its own, and plays no role in the

objects we sense. Aristotle says consistently throughout that nous grasps its understood objects directly from sense. The source of all knowledge is sense, not images. Let me trace this.

First: Images are of unified things, not because we combine separate sensations into unified images, but because images come from already-joint sensations. “Imagination is a pathos of the common sense.” (*M&R.*) “One” thing is the product of the common sensing (III-1), not of imagination.

Secondly, we sense not just colors and motion, but things like fire, beacons, and people. Animals sense their food. Cleon’s dog senses Cleon. Things and people are sensed “incidentally” – don’t let that English word seem to mean “unimportant.” Incidental sensing is crucial. For Aristotle sensing is an interaction with some existing thing. Sensing is the thing’s activity and the organ’s activity, together as one activity in the sense organ (III-2, 425b26-426a5). The objects of imagery are things like food, beacons, friends and enemies because the objects of sense are things like food, beacons, friends and enemies.

In this unifying chapter Aristotle is bringing together what he usually discusses separately, theory and practice (thought and action). Both before and after the example of the soldiers in the dark, Aristotle proportions good and bad, pursuit and avoidance in both theory and practice and both with perception and with thought-in-images.

As Aristotle turns to practical action, we might wonder: He seems **suddenly** to be speaking of **situations** -- how did we get to these from mere sensible things? Aristotle derives situations and inter-human action in his book *Politics*, which begins from the fact that human individuals are not self-sufficient. We are not possible except in a society. The polity – – the family, the household – – determine the roles of the people (master, slave) and the functional nature of the things, instruments for living, such as the shuttle, the lyre, and the rudder.

Since the full treatment is there, we have to permit Aristotle the continuity he is building here from sensing to practical action, practical nous and reasoning. But we need to keep in mind that the individual life-process is embedded in social interaction. Humans are political animals. The incidentally sensed people and things have a social and **actional** nature and function. What they are belongs to practical situations. The incidentally-sensed things (the son of Diaries) do not consist just of colors, smells, and motions. The incidentally-sensed existing things include their functions in social situations, for example the food we eat, the other people

with whom we relate, such as the other soldiers and the enemy.

Because of the separation between his books, Aristotle has invited a misunderstanding. He seems to have given the Western tradition the assumption that the five sense-percepts can account for situations. But consider! Even the simplest **situation** cannot be understood as made of colors, sounds, smells, tastes, and tactile sensations. Readers don't always notice that for Aristotle sensing is an interaction with existing things. What he calls "incidental" sensing is the sensing of actual things such as food, other animals, and people, for example a loved one. Sensing does not consist only of percepts; it is a concrete interaction with an existing thing. (See ENDNOTE 100.)

138. On Potential and Actual Thought and Things

We notice at the start of the chapter that Aristotle shifts from the soul and "understandables" to "knowledge" and "knowables." He begins with "existing things are either sensibles or **understandables**" (νοητά) and immediately goes on to discuss "knowledge is in a way **the knowables** (τὰ ἐπιστητά) and sensation the sensibles." ὅτι ἡ ψυχὴ τὰ ὄντα πῶς ἐστὶ πάντα· ἢ γὰρ αἰσθητὰ τὰ ὄντα ἢ **νοητά**, ἔστι δ' ἡ ἐπιστήμη μὲν τὰ **ἐπιστητά** πῶς, ἢ δ' αἴσθησις τὰ αἰσθητά·

Qua having objects, nous is also knowledge. And, as we saw throughout, in Aristotle's approach the basis of knowledge is identity. In so far as knowledge consists of forms which are only in the soul, knowledge is only potential. Quite differently, knowledge in act is an understanding-activity whose form is also the form of a definite present object. (ENDNOTE 117.)

Aristotle divides accordingly:

"Knowledge and perception are divided to correspond to their things (πράγματα), the **potential** to the **potential**, the **actual** (*entelecheia*) to the **actual** (*entelecheia*). (431b24-26)

We recall from II-5 (and ENDNOTE 46) two "potential" knowers and one "fully actual" knowing:

- 1 Even before any learning, because one is human, one is capable of knowing (homo sapiens).
- 2 A learned person who always has and can at wish exercise acquired knowledge.
- 3 Someone knowing in act a present particular, e.g., the grammarian actively knowing

this present “A.”

From III-5 and III-7 I add a fourth:

4 Active nous itself as knowledge, or how the universe knows, i.e., contemplates.

Clearly in #1 the soul is potential knowledge of all potential things. In III-4 Aristotle said that nous qua potential is nothing actual at all, and **precisely because** it has to be capable of knowing all things.

#2 includes both when one only **has**, and when one **also enacts** the knowledge which consists of universals which are in the soul. Both conditions of case #2 are still only potential knowledge of indefinite (not present) potential things (things that might some time actually come by).

#3 is with a definite present particular thing. It is actual knowledge of actual things.

#4 was mentioned one line above, at the end of III-7 where Aristotle said that **active** nous is identical with the things(s) actively understood (noumenon). So we have just had this kind of **actual** knowing of **actual** things.

139. On Extended Things

As always, Aristotle’s phrase “the magnitudes” (tas megethe) means extended things. Obviously he doesn’t mean that nothing exists apart from mathematics. (See ENDNOTE 102 on megethos.)

Notice “nothing apart from” does not mean that your friend or your activities **are** magnitudes, just that they don’t exist apart from sizable things.

Since he says “dokei,” the statement might have exceptions.

140. On How Understandable Things Are in Sense Forms and Images

So as not to let it seem a mystery how the understandable is in the sensible (and how it is thought in images), let us briefly look back.

The understandable forms are not just waiting there; they are made from the sensibles.

This “making” is analogous to how the sense forms are made, i.e. proportioned and enacted from the media-activity which comes from the things.

The nous makes (enacts) the understood forms from the sensibles. You will recall from III-1 and III-2 that already for animals the five senses join and thereby enable the sensing of one thing. With incidental sensing this jointly-sensed one thing can be the food which the animal recognizes and eats.

Now, how did Aristotle get to understandables from the jointly-sensed one thing and incidental sensibles? III-7 took us across, but it may help to recall other books I have already cited.

First a person has to develop the stage between. The potential nous learns “the first universals” (99b21) such as “human,” “animal,” “plant,” “food,” “stone,” “water,” “mother,” “enemy,” “magistrate,” “taxes,” “line,” “number,” all the concepts just about everyone has. (Notice that social things (friend, enemy) are natural things for Aristotle. Humans are political i.e., social animals. See the beginning of Aristotle’s *Politics*.) In *P.A.* (II-19) and *Metaphysics* I-1 Aristotle says that these ordinary notions come from repeated sensing and memory images. From these comes a single “experience.” (100a8-b2).

However, these are not grasps of essences (93a24). The doctor may have sufficient experience to give the same medicine to each persons with certain symptoms. But this is not “knowledge” unless the doctor also has a grasp of the essence of the illness (for example how the symptoms are brought about by the lack of something) so that the reason why the medicine cures follows from the essence of the illness (for example the medicine adds what is lacking).

Now, how does Aristotle get to causal knowledge from the ordinary universals? Recall how he arrived at the essence (the cause) of plants in II-2 . First an observation “but they grow . . . in every direction” (rather than only falling down like earth or only going up like fire) . . . but then the essence and cause : “and continue to live, as long as they are able to receive nourishment. (413a29). Grasping the cause also comes from observation; you see it shrivel if it doesn’t get water or the soil gets exhausted. But grasping this requires nous.

Aristotle gives an example of a poor definition “An eclipse darkness on the moon.” This lacks the understandable cause. Then he says that if we were standing on the moon, we would see and immediately also understand (by nous, not just by sense of course) that the earth obstructs the light. But, for this to happen the person must already have the concepts “light,

“dark, “earth,” “sun,” and “moon.” We would draw the causal understandable directly from the sensation (90a29). **In this example we can also see (i.e., immediately understand) how understanding arises from within sense.**

Notice that the essence and the cause of the thing can be a single understandable. We might grasp it at once somewhat like the unity of a form when you recognize a face, or that the thing over there is a turtle. Or, we might grasp its essence and causal relations only at the end of a long inquiry. In either case, nous grasps it from sense.

The thought-objects (the understandables) are utterly different from sense and images, and yet very closely related. For example, you **understand** the essence, cause and function of noses and eyes. The functions are utterly different from the picture and touch-image of noses and eyes which still come with the thought.

We want to remember Aristotle’s whole carefully built continuity from sense to thought, especially III-1, III-2 and III-7 as we now go on to desire and locomotion.

141. On "Different in Being and in Potentiality"

Aristotle says that the locomotion-power differs from other powers “**in being** (which means in definition) **and potentiality.**” It differs only in these two ways but does not differ in act because insofar as locomotion is **in act**, it is just the activity of sensing, now **fully** in act. Locomotion is sensing when fully in act (III-7, 431a13). When you poke a worm it moves away. It is sensing, paining, imagining the absence of pain, desiring the absence of pain, and locomoting away, **all as the same act.**

But **in definition**, sensing a pain is differently defined than imagining no pain, and it is again differently defined as the desire for its absence.

Also desire is the potentiality for locomotion. This differs from the potentiality for sensing since some animals don’t have the potentiality to locomote (i.e. travel).

The object of desire differs from the object of sense. What is desired is not the object of the sensation that the animal **has**; the object of desire is rather **none of** this sensation, or **more** of it, or some other **absent** or distant object. There is no desire for what we have. We may be content with it but we don’t call the contentment “desire.” The object of desire is something we

don't have. Having the object of desire is inherently only potential. Of course. The potentially-had object defines what the desire is. SEE ALSO ENDNOTE 145 ON DESIRE IS A POTENTIALITY.

142. On Stationary Animals 32b20

These animals can sense, feel pain, the desire to avoid, and they draw back, all in one action. But they do not change their location. If they could locomote, this would also be part of one act. For Aristotle it is important that there is a class of animals that draw back if poked, but don't locomote anywhere. Their existence shows that the whole class "animals" is distinguished and organized by sensing, not by locomotion (II-2) as had been assumed by previous philosophers. He takes these animals up again in III-11. They have "indefinite imagination" and "indefinite motion." (For Aristotle, a motion is defined by its direction.) These animals do move, but in no definite direction. They do not change their place.

143. On Noein/Imagination

Although "noein" is properly the ongoing of nous, Aristotle's use of the word is broader. He **tentatively** classifies imagination under "noein." Similarly, in III-3 at 427b27 Aristotle says that "noein **seems to** include imagination ..." Also, at 427b9 he spoke of "noein" in a broad way, stating that it can be right or wrong, which means that noein includes dianoia which can be wrong.

Imagination and practical nous both can pose an object of desire that isn't being sensed. We may sense (see or smell etc.) a **present** desirable object at a distance, which we do not possess and wish to possess (or in case of pain wish altogether gone), but in higher animals the imagination and nous can also provide an object that is **not (yet) present** at all.

144. On Nous Is Always Right 33a26

If this "good" were arrived at by steps of planning, i.e., combination, Aristotle could not say that it is always right. So affirming this good cannot be the result of from that kind of practical reasoning which moves from the aim backwards to some action -- surely we can

miscalculate in that. He is not now speaking of the means to get to it, but of the object of desire - when it is the understood good (rather than merely sensed). The practical syllogism comes later .

Later we see that practical nous may change the object of desire (from something close at hand to something distance in time and space but more desirable) because **practical nous may reason forward to consequences. So it can contrast the desirability of consequences from several aims.** The calculating “logismon” does the weighing by taking out the stronger pull because of the closeness in time, so as to arrive at a deliberated weighed choice of the greater good. But then **that** is the object of desire and “the good” which is grasped. To move us into action the good cannot be the object of nous alone; it has to be an object of desire.

145. On Desire Is Only a Potentiality

Two questions:

1 What does Aristotle gain by not considering even the three main soul-potentialities as separate things?

2 What is the difference between the main soul-potentialities and those many potentialities which he calls “only potential?” In what way is desire “only potential?”

1 Inherently interrelating the soul powers enables Aristotle to explain them with much more subtlety than if they were plain separate. We have seen that many interrelations between the soul-parts explain how they function. For example nous (understanding) is an independent soul part, but we could not develop nous without its relation to sense and images. Nous has its understood objects **in** images which are **sense**-remains. Similarly, nutrition is an independent soul-part in plants, but in animals the function of nutrition includes the sense of touch to recognize food, and along with touch pain and pleasure, imagination and desire.

2 Since all soul parts are potentialities, how do those differ which Aristotle calls “**only potential?**” In our instance here, just why is desire **only** a potentiality, (i.e., added only in II-3, 414a30). Why is desire not a separate soul-part, considering that all soul-parts are potentialities, powers, and we just saw that the three main soul-parts are not totally separate.

Of course, nutrition, sense, and thought are more separate since in some living things

the power for nutrition exists without the power of sense, and the latter without nous. But sense also exists in some living things without locomotion, so why is the power for locomotion not as separate a soul-part as nutrition, sense, and thought?

Locomotion as such is not an activity. Aristotle says of all motion that it is “**incomplete activity**” (see comment to III-7 431a3). Aristotle defines a motion by where it is heading, but on the way it is only potentially there, and when the motion arrives there, then -- it stops altogether. (*Metaphysics* XI-9, 1065b15-30). It is **actually motion** only while it is incomplete and potential.

But Aristotle defines motion by its direction and object. In that respect locomotion is defined by desire, not sense. The motion is not toward the object of sense but toward the object of desire. Desire and locomotion are discussed together.

To say that desire is “only potential” does not mean that it is only a “can,” and never actually does what it can. **Desire has no activity of its own**, but it is the power for locomotion. Locomotion is classified as the full enactment of the sensing activity in which desire is a presupposed potentiality.

“Desire in act” is a motion internal to the body (SEE NEXT ENDNOTE, 146).

146. On Desire in Act Is an Internal Motion 433b18

What exactly is the motion of desire in act? In Book I Aristotle said many times that the soul is not moved, since it is the power for the functions and this is not changed or moved. Of course the functions include and involve many motions of soul-and-body. (See ENDNOTE ON ACTIVITY VS. MOTION, II-4). In I-4, (408b15-18) Aristotle said that some movements **reach to the soul** (e.g. the motion reaching a sense-organ activates the sensing) while others (e.g. recollection) originate **from the soul**. Desire is “moved” in this way. We have seen that locomotion involves imagination, and that imagination is a continuation of the sense-motion in the common organ (the functional center). Desire is moved by the material effects of the motion of sense and imagination. Now let us enter into the details:

Aristotle derived the brain in terms of its centralizing functions, but thought that it is the heart. (Currently with chemical messengers and vibrational electric fields being measured, who knows further progress may restore the heart as a center. The heart shows more electrical activity than any other body part. Aristotle knew about vibrations of sound and harmonics.

Sometimes he writes as if there were an overall field to which all other things align themselves. But I doubt that he had more to go on than that life stops when the heart stops.)

As usual, he placed the physiological material in a different book, (Parts of An 647a31, *De Motu An*, 781a23).

FROM *Movement of Animals*:

701a2 The animal is moved and walks from desire or purpose, **when some alteration has been caused as a result of sensation and imagination.**

Aristotle attributes locomotion **directly** to the material effect of sensation and imagination:

702b21 the organ of sensation is also situated in the center of the body; and so if the region around about the origin of movement is altered by sense-perception and undergoes change, the parts which are attached to it change with it by extension or contraction so that in this way movement necessarily takes place in animals.

καὶ γὰρ τὸ αἰσθητικὸν ἐνταῦθα εἶναι φαμεν, ὥστ' ἀλλοιούμενου διὰ τὴν αἴσθησιν τοῦ τόπου τοῦ περὶ τὴν ἀρχὴν καὶ μεταβάλλοντος τὰ ἐγόμενα συµμεταβάλλει ἐκτεινόμενά τε καὶ συναγόμενα τὰ μέρη, ὥστ' ἐξ ἀνάγκης διὰ ταῦτα γίνεσθαι τὴν κίνησιν τοῖς ζώοις.

702b30 There must be something at rest if one thing is to be moved, and another is to move it.

703a5 desire is the central origin which moves by being itself moved.

703a10 The **pneuma** seems to bear the same relationship to the origin in the soul, as the point in the joints which moves and is moved bears to that which is unmoved. Since ... the origin ... is in the heart, .. The pneuma also is situated there.

The pneuma is the movement-energy which takes off from the desire soul-power and generates the physical moves. Aristotle defines it by a proportion: Just as in the case of the ball-joint what does the moving pushes off against a fixed place, so the soul-power is fixed, and the pneuma takes off from it.

The term “pneuma” can be puzzling. But it is clear here that only a special part of the animal moves the rest of the animal. In *Physics VIII* he says that we must:

“..distinguish what factor in the animal is primarily the producer of the movement, and what that is in which the movement is produced. For, what is obvious with **a man in a boat**, or any things that are not natural wholes, is also true with animals . . . we can say that the whole animal "moves itself" only because mover and moved are (different) parts of that whole (254b30)

The bridge-term “pneuma” can be traced through his writings. In *Gen. of An.* he says:

“in earth water is present, and in water pneuma is present, and in all pneuma soul-heat is present, so that in a way all things are full of psyche” (*Gen. of An.* III-11, 762a20).

What is important for us here, is Aristotle’s bridge **from** the functional **to** the physiological. As he does throughout, Aristotle upholds the idea that the functional organization (i.e., the soul, the psyche) is not itself moved or changed by its activities. But the unchanged activities organize many motions and changes. For Aristotle, of course, “soul” (psyche) means living, i.e. functional organizing.

147. On Kinds of Animals

In this chapter Aristotle distinguishes three kinds of animals. He has another distinction within the second kind, with which he is **not** concerned in our chapter. I mention it below.

1. Those animals that have only the sense of touch. They move but remain in one place. They draw back when painfully touched. They have “indefinite” motion and “indefinite” imagination.
- 2 Those who have more than one sense, and have definite motion and definite imagination, but lack logismos (because they lack nous).

They have **only sensuous imagination** which he distinguished (at the end of III-10) from

- 3 the kind that have **deliberative imagination** that includes nous. This exists only in human animals.

2A Within 2 above, Aristotle distinguishes between animals in whom percepts do not persist, from those in whom they persist so that they have memory and a sense for time. Animals that lack memory can have more than one sense, have definite **lo**comotion (change of place) and have definite imagination. They can make a definite move away from pain and toward pleasure, but they do not have images of what they desire to obtain (III-3). His example is the bee of which he says that it is prudent, but cannot remember. (*Meta I-1*, 980a30-b4 and *De An III-3*, 428a11).

Thomas Aquinas is mistaken in identifying 1 with 2A in his Commentary, paragraphs 267 and 644).

Aristotle divides the chapter accordingly, dealing with the sensuous kind of imagination up to 434a7 where he adds the deliberative kind of imagination and its objects.

148. On Final Cause and the Other Causes in the Chapter

The modern expression for the final cause is: “adaptive.” All or most characteristics of living things are “adaptive” or, we say, they are “**useful for the survival of the species.**” That is exactly what Aristotle shows here.

“Nature does nothing in vain” means that we find nearly every facet of living things adaptive. Moderns differ from Aristotle by explaining adaptiveness in evolutionary terms as brought about by “natural selection.” But what we observe is the same. If some regular part or a behavior of a living thing seems not to be adaptive, it raises the question for everyone. “What function does it serve?”

The point is not to “believe” that nature does nothing in vain, but to discover the role that any aspect of a living thing plays in its survival and in its activities. We notice the functional connections between different aspects, how the parts and activities depend on each other and form a functional whole, not a flat design but related aspects of activity.

That is also why one can say that for Aristotle “the final cause organizes the other three causes.” Of course it does, since discovering the final cause consists in seeing the role that anything caused by the other causes plays in the animal’s activities.

We notice the final cause in the next line, the question: “**how would it be nourished?**”

It is the material cause when he says “if it does have sense-perceptions, the body must be either simple or composite. But it cannot be simple . . .” (434b9-11).

The formal cause concerns what something is, “the sense of touch, . . . without this nothing can be an animal.”

The moving cause includes how living things are generated (“**for** anything that has been born must have **growth, maturity.**”).

The chapter not only cites all the causes, but more importantly, the links between them. Each is necessary for one or some of the other causes, and may be required for survival and for the living activities.

149. On Comparison with II-2

In II-2 (413b10 and 414a2) and in III-3 (414b15) Aristotle promised he would later give the causes for what he said there. In II-2 it was sufficient for his demonstrations merely to assert that to be an animal is to have sensation, and if it has any sensation, that it has touch. Aristotle said that “this furnishes distinctions between the living things.”

You can tell empirically that you’ve probably got the essence of animal right, when you find that all the living things that see or hear do also have the sense of touch. But why do they? What is the internal linkage?

Aristotle always **states** the middle term or cause, as he tells us to do (at the start of II-2). In II-2, self-nourishment is stated as the cause or middle term for attributing “living.” Then the reasons for this were explained in II-4. But he didn’t explain why “sensation” is the middle term for attributing “animal,” or why “touch” is the middle term for attributing “sensation.” Why do animals need sensation, and why can they have touch alone, but not other senses without it? Here in III-12 and 13 he can give the causes, now that we have had all four parts of the *De Anima*, (nutrition, sensing, nous, and locomotion).

150. On How Much Is Linked in the Chapter

The chapter comprises all living activities. It begins with nutrizing, moves on to sensing, mentions nous, then takes up locomotion -- just the order of these topics in the *De Anima*. He discusses the five senses and "shape" (435a7), that is to say the common sensibles. He discusses generation as well as how animals move, and how sense patterns move through media.

We notice that Aristotle mentioned but then did not yet offer the material causal links. He will get to the material cause as he continues right on into III-13.

151. On Touch Is the Terminus of the Delaware Anima.

"Touch alone is held (*dokei*) to perceive through itself." (435a19) Here Aristotle has arrived at his characteristic type of principle, what the Latin tradition calls a "reflexive principle." I call it "the loop where the bus turns around." It is an end that is also a beginning, something which is in a way its own explanation.

Aristotle says "dokei" because people don't recognize that touch also goes through a medium, the flesh. But it does end in sensing by contact.

But although it senses through itself, touch "cannot discriminate itself by itself" (III-2, 426b15-17). It needs the other senses so as to discriminate itself from them. Therefore, if it is the only sense, it leads only to "indefinite" motion (*aoristos*, III-11). But touch **is** sensed through itself.

Here at last are the linkages why the other senses cannot be without touch: All senses occur in something between, but if they stayed in a between, no sense would ever arrive, much less join the others. So there needs to be a sense that senses itself at some point, a sense that terminates, if there is to be sensing in the body. There needs to be a sensing that **is** contact, i.e., a sense by touch.

"Touch is, as it were, a mean between all tangibles" (435a21). Since the other senses join and become discriminated and proportioned there, the touch-organ is also the material place of the whole network of functions presented in III-1 and III-2 and III-3. It is the place of "pleasuring and paining," and of the inferences and practical moves that are "marked out" by the "perceptive broad

mean towards the good . . . (αἰσθητικῇ μεσότητι πρὸς τὸ ἀγαθὸν..., III-7, 431a10-11). Its fineness or coarseness determines a human individual's talent for thinking (II-9, 421a18-25). And since the sense of touch also reorganizes nutrition as we saw in II-3, touch is the material unity of the soul in animals.

The touch organ has many functions attributed to it: sensing, imagination, memory, recollection, and others. (See 477a28 - 479b32 *On Breath*). Accordingly, it has many names: the "koine," i.e., the common organ, the last organ (ἔσχατον). **It is the terminus of the De Anima.**