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In Which Sense is Intellective Knowledge Said to be "More True" Than Scientific Knowledge? A Problematic Comparison in Aristotle, *An. Post.* II 19

According to Aristotle, some forms of knowledge and their corresponding cognitive conditions (ἐξαις) are always true, while others can be false.¹ This remark comes out right near to the end of *Posterior Analytics*², where it is said that “opinion” and “calculation” are potentially false, whereas “scientific knowledge” and “intellective knowledge” (ἐπιστήμη and νοῦς) are always true³. These latter forms, both meet the condition for truthfulness, but intellective knowledge is said to be not only more accurate (ἀκριβέστερον) than scientific knowledge, but also more true (ἀληθέστερον, in 100^b11).

In this framework, then, a question that may arise is: in which sense is intellective knowledge said to be *more true* than scientific knowledge?

Before we attempt to answer this problematic question, or even explain why it is problematic, it may be helpful to start by citing the relevant text below, which is the famous conclusion of Aristotle’s *Analytics* (in Barnes’ version⁴ on Ross’ edition⁵). Our two terms of comparison have been left untranslated, namely scientific knowledge and intellective knowledge, as, respectively, *epistēmē* and *noûs*, for the sake of clarity:

Of the intellectual states by which we grasp the truth, some are always true and some admit falsehood (e.g. opinion and calculation do –whereas epistēmē and noûs are always true); and no kind <of knowledge> apart from noûs is more ex-

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² Aristot., *Post. An.* II, 19, 100^b5-8.

³ As we know also from Aristot., *Eth. Nic.* VI, 3, 1139^b14-36.

⁴ Barnes (1993) 74.

⁵ Ross (1964) 100^b5-17.

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act [ἀκριβέστερον] than *epistēmē*. Again, the principles of demonstrations are more familiar [γνωριμώτεραι], and all *epistēmē* involves an account [μετὰ λόγου]. Hence there will not be *epistēmē* of the principles; and since nothing apart from *noûs* can be truer than *epistēmē* [ἀληθέστερον... ἐπιστήμης ἢ νοῦν], there will be *noûs* of the principles. This emerges both from our present inquiry and also because, just as demonstration is not a principle of demonstration, so *epistēmē* is not a principle of *epistēmē*. Thus if we have no other kind <of knowledge> apart from *epistēmē*, then *noûs* will be the principle of *epistēmē*. And the principle will relate to the principle as *epistēmē* as a whole is related to its object as a whole⁶.

For a start, it can be noted here that intellectual knowledge *can be* truer than scientific knowledge (ἐνδέχεται εἶναι: it is possible that it is, 100^b 11-12), and it can be so solely in the case of comparison with scientific knowledge. Secondly, intellectual knowledge is said to be truer via a process of elimination, since it is the *only* plausible remaining candidate, being an always-true form of knowledge, which has been left to compete for the role of starting-point of scientific knowledge.

Between the lines we can perhaps read a sort of *argumentum ad absurdum*: if scientific knowledge were the starting-point of itself then it would certainly be independent and self-sufficient in its entirety, since it is an always-true form of knowledge as such. However, since scientific knowledge cannot be the starting-point of its own knowledge – it would be absurd to maintain such a statement. Scientific knowledge cannot prove its own principles since principles as such cannot be demonstratively proved. Therefore the starting-point of scientific knowledge must be something else, namely a different kind of knowledge that must satisfy the requirement of being always-true for the sake of the truth of science's deduced conclusions. The only alternative and always-true kind of knowledge is nothing else but *noûs*. It seems right that for Aristotle only *noûs* could aspire to be set as *epistēmē*'s starting-point: not opinion, not calculation and not *epistēmē* itself. So, the elimination process which leads to isolate intellectual knowledge is yet an important element to consider for assessing its asserted superior truth: *noûs* is not said to be the most true thing in absolute terms, but it is said to be truer only in comparison to *epistēmē*. For *noûs* is superior only because, apparently, no other forms of knowledge can provide the truthfulness that *epistēmē* can already assure by itself (except for principles).

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⁶ Aristot., *Post. An.* II, 19, 100^b5-17.

In other words, it seems on first impression that *noûs* is truer than *epistēmē*, because *epistēmē* needs it to be truer for its demonstrative purpose, and not because *noûs* needs to “impose” itself as truer, so to say, in order to master and rule over scientific knowledge, being itself a self-subsistent true form of knowledge.

Why the “more true”-qualification is problematic?

The differential truth between these two forms of knowledge needs some more clarification, since *both* scientific knowledge *and* intellectual knowledge are said to be always *true*. In a strong sense, “always true” means that their truth-value, if they are *actual* scientific or intellectual knowledge⁷, is *necessarily* true in every case and it does not change over time. We should note here that the Aristotelian conception of science, and the ancient one in general, is very different from the modern, “fallibilist” idea of scientific inquiry. For the Greeks, if what is known is *ἐπιστήμη* (“what is stable and firm”)⁸, then it should be irrevocably and permanently true, because its object stays the same and can never change: so when the object of *ἐπιστήμη* turns out to be demonstrated, a geometrical theorem for instance, it will be true *once and for all*. Similarly, intellectual knowledge is a cognitive state that, when it comes to actuality (*ἐν ἐνεργείᾳ*), guarantees *ipso facto* permanent truth as well⁹.

Why, then, is intellectual knowledge said to be “truer” (*ἀληθέστερον*, in 100^b11) than scientific knowledge? Why not some other, less compromising qualification, for instance, “more concise”? The comparison that we can find in the final lines of paragraph 19 is really surprising for the reader because it comes to be set

⁷ Aristotle considers also the case in which we can reach some “accidental” knowledge (e.g. when the knowledge of the conclusion is more sound than the knowledge of the principles from which that conclusion has been inferred) but in this case we are not dealing with actual *ἐπιστήμη*. Aristotelian *ἐπιστήμη* seems to be never accidental. Cf. Aristot., *Eth. Nic.* VI, 3, 1139^b34-36.

⁸ Cf. “what one can have *ἐπιστήμη* of is that which cannot be otherwise”. Burnyeat (1978) 98.

⁹ Some, as for example McKirahan, maintain that these states are not always infallible because we are *not always aware* that what we have is actual science or actual intellection. I am not very persuaded by this point because each understanding seems to come together with the self-awareness (*συναίσθησις*) of having that knowledge, otherwise it would not be useful as such. However this interpreter is also disposed to concede that “if we have *νοῦς* or *ἐπιστήμη* of *p*, then necessarily *p* is true”. McKirahan (1992) 239.

between two states which are *both* considered, let us say, 100% true, and that in theory are *both always and necessarily true*.

It is not just a terminological issue, since the adjective *ἀληθέστερον* is even more controversial with Aristotle's Principle of Excluded-Middle in mind. The Principle of Excluded-Middle (*Metaph.* Γ 7), basically denies the existence of an intermediate degree of truth. As the Latins translated it: "*tertium non datur*", no third option is given between truth and falsity. Most importantly, this principle does not exclusively apply to propositional logic¹⁰. Aristotle applies the Principle of Excluded-Middle to both scientific knowledge and to intellectual knowledge, as we can conclude also from the process of the so-called "intellection of indivisibles" in *De An.* III 6 and *Metaph.* Θ 10 (where, I maintain, the indivisibles mentioned there and their features are the same kinds of object as the principles mentioned at the end of *Analyt.*)¹¹. In this regard, we can only attain the truth as a mental, direct catch or firm grasp. The case of a "missed grasp" (*μὴ θιγγάνειν*) of those objects of understanding is neither falsity nor a partial truth, but nothing except ignorance (*ἄγνοια*), which is not a third truth-value, but a total absence of knowledge. So both actual science and actual intellection must be infallible, and plain "truth" is the one and the same truth-value they necessarily can have. How is it then that having *νοῦς* of *p* is said to be even "truer" than having *ἐπιστήμη* of *p*?

To further clarify the issue, it is worth noting here Schlick's recent words: "*nous* is more exact and more true than demonstrative knowledge, but how can it ever be that something is more exact and true above every other thing? When something is true and we know it, then, as it is expected, this is also exact, but from that point onwards any increase is not possible. By itself, a comparative of "true" does not seem reasonable to be as such¹². Moreover, as it has been noticed, there

¹⁰ Cf. dalla Valeria (2009).

¹¹ On this point see Berti (1978) 141-163.

¹² In a footnote here, Schlick (2011) 200, n. 414, takes correctly in consideration the case of *Metaph.* Γ 4, 1008^b34-36, where Aristotle points out that those who say less falsity turn out to say more true, e.g. those who confuse number 4 instead of 5, make a minor mistake in comparison to those confuse 5 with 1000. Just two considerations: in this case, we are neither on the level of intellectual knowledge nor on the level of scientific one, but on the level of calculation, which, as stated, can be false. Secondly, here we are speaking of degrees of falsity or error, not of degrees of truth (which for Aristotle comes always without degrees). Third, in the expression "saying more true" (*μᾶλλον ἀληθεύειν*), "more" should

could be some cases in which it is possible to have true knowledge both by means of *nous* and by means of demonstrative proof, and in these cases proof should be preferred. If, then, *nous* is superior to proven science, as it has been noticed as well, it is not so because its knowledge is preferable in every cases”¹³.

We will now briefly take into consideration five different accounts found in recent literature about the specific meaning of *ἀληθέστερον*, arguing that they are not fully satisfactory answers, and then offer five alternative points in order to explain in which sense intellectual knowledge is said to be “more true” than scientific knowledge by Aristotle.

Five solutions proposed (and dismissed)

1. One solution has been proposed by the seminal Leshner’s article¹⁴, who takes “more true” to mean “more informative”: “Some propositions – he writes – may be more informative (disclose more information or conceal less, than others, and hence be *ἀληθέστερον*)”¹⁵. But it is hard to maintain that simple intuitions could bring us a higher quantity of information compared to long-structured demonstrations.
2. Biondi’s commentary of these lines refers to the heideggerian etymological meaning of “*ἀληθέστερον*”, saying that “in Greek *ἀληθέστερον* poses no problem and makes sense because, as the etymology of the term shows, it means *uncovered, unhidden, revealed*. Therefore, the notion of uncovering more or less of the truth is possible and one can speak of one piece of knowledge being truer than another”¹⁶. But, again, it seems implausible that Aristotle drew upon an etymological meaning so different from the common one without making us aware. Moreover, it is not clear why the suggested superior uncoveredness of intellectual knowledge should be more revealing in

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be applied to ‘saying’ and not to ‘true’. (Cf. “The few times that Aristotle uses ‘*mállon*’ to modify ‘*alêthês*’ or ‘*alêthêuein*’ the adverb definitely has a rather loose sense, sometimes equivalent to ‘more like’”. van Rijen (1988) 112). I have discussed this passage in Cosci (2014) 69-77.

¹³ Schlick (2011) 200. *My transl.*

¹⁴ Leshner (1973), 64, n.2.

¹⁵ *Ibid.*

¹⁶ Biondi (2004) 64.

comparison to scientific knowledge. If principles are self-evident truths once they are understood, what could intellect ever add in term of uncoveredness to their self-evidence?

3. Unsatisfied by similar, current solutions, Bechler wrote: “how to explain Aristotle’s declaration that *noûs* is more true and more exact than *epistēmē* and is, like *epistēmē*, ‘unfailingly true’¹⁷? For instance, Modrak asks this but provides only the lame answer that this is what Aristotle believed¹⁸. A better direction seems to be that all concepts “from abstraction” are obtained in the inductive process (*epagōgē*) by constructions that consist in the progressive suppression of properties according to need. It is only by being constructs that they can be maximally true, absolutely certain and exact”¹⁹. The problem with this interpretation is that inducted concepts are not “constructed” in any intentional way “according to need”, i.e. there is no deliberate control over the way in which universals emerge from reiterated memories and experiences. The simplification process mentioned here is beyond the subject’s power, since for Aristotle, there must be an objective procedure. Moreover, it is not very clear in which sense the suppression of unessential properties should determine a superior truth. Was not scientific knowledge about what is essential as well?

4. Bäck has a turn and *en passant* refers *ἀληθέστερον* to the operation of the intellect itself, saying that “the *truer* the apprehension, the *better* the demonstration”²⁰. It may be objected that such a mental status does not come in degrees, nor does apprehension of the principles seem to be a matter of levels of understanding. For, the term “apprehension” comes from the Greek word *ἀντίληψις* that means a single grasp, so it is not clear how a single, conceptu-

¹⁷ The reference here is to *Post.An.* 99^b27; 100^b6, 8, 12.

¹⁸ Modrak (1987) 175.

¹⁹ Bechler (1995) 228, n.2. *Emphasis added*. The excerpt follows in this way: “This would explain why *epagōgē* is not a generalization process (Hamlyn (1976) 167-180), why even one case may suffice for it (e.g. ‘Callias’, in 100^b2), and why Aristotle is not bothered by any Humean inductive doubt (Modrak (1987) 174-175)”. *Ibid.* Even if this specification might explain why concepts acquired by induction are true, it leaves unanswered why for Aristotle they should be regarded as *truer* than analogous concepts proved by demonstration (where there is no generalization, where one proof suffices, and where there is no room for epistemic doubt as well).

²⁰ Bäck (1999) 176.

al grasp may come swiftly but little-by-little. (Additionally, *ἀντίληψις* is not an Aristotelian term, but was probably introduced with this technical meaning of "intuitive apprehension" later, by Alexander of Aphrodisias).

5. Among all the solutions proposed, the Late-ancient interpretation is to be avoided the most, as those shared by Ammonius, Pseudo-Philoponus, Syrianus²¹ and many other concordistic commentators. Late platonic philosophers defended not only the higher (self)evidence of the principles, but also their *ontological priority*, i.e. their superior degree of (noetic) being, maintaining, with Plato and against Aristotle, that principles are encoded as a-priori truths in our psychic background since the moment of soul's coming to be, rather than acquired by perception during one's own life²². Their interpretation usually ended up with considering the *νοῦς* as a sort of superior faculty of sudden intuition, like a deep enlightenment or inner insight with a share with the divine, that regards the intellections of major truths as a sort of meta-epistemic illumination or even recollection of rather mystical, transcendent Principles. Plutarch even wrote that intellection was a sort of "lightening flash" that for Aristotle, as well as for Plato, allows to attain the pure truth of what is first "like it happens in a mystery initiation"²³.

For better or for worse, this is simply not Aristotle's approach and considering such a conceptual shift, it is clear how much the original Aristotelian theory of intellectual knowledge was altered and re-worked.

Unlike such a Neoplatonic trend, I would rather argue that Aristotelian scientific knowledge and intellectual knowledge share always *one and the same* truth-value, i.e. there are not different degrees of truth among intellection and science for Aristotle. In what follows, I will maintain that the meaning of "*ἀληθέστερον*" is not about different degrees of truth, but different degrees of *accuracy* in the sense of the word "*ἀκριβέστερον*" will have, and, finally, different capacity of entailing (the same "degree" of) truth.

²¹ Cf. Longo (2005) 198-199.

²² Cf. Sorabji (2010).

²³ Plut., *Mor. (De Is. et Osir. 77)*, 382d4-e2.

In which sense is intellectual knowledge said to be “more true” than scientific knowledge?

Five Answers

In what follows, five answers are proposed to the question about the meaning of *ἀληθέστερον*, which is said of intellectual knowledge. Although I consider all of them somehow concurrently explicative, the fifth answer was probably what Aristotle most had in mind when he wrote his conclusion, as some parallel passages prove. In the last paragraph I will advance some final considerations about the asserted “major” truth as related to time of understanding.

1. *More exact because of its unitary object.* As Aristotle argues, on one hand there cannot be any scientific knowledge of first principles, because scientific knowledge is constituted by conclusions obtained through valid demonstrative inferences, whose principles are already given and acquired. On the other hand, intellectual knowledge reaches exactly those first principles which are required by every science in order to start its demonstrative processes and gain its conclusions. So there cannot be any scientific knowledge of the principles, as said, because scientific knowledge is just about demonstrative inferences and deductive processes, whose first principles are by their own nature not subject to demonstrations (unless falling into fallacies of circular proofs), while intellectual knowledge truthfully *provides* those principles required in order to start the demonstrative proofs²⁴.

Our first angle is that intellectual knowledge can be “more true” due to its alleged superior accuracy, since this is the standard meaning of *ἀκριβές* in its reference as well²⁵. We should now follow this parallel track, for most of the times that Aristotle uses the word “true” (*ἀληθές*) as a comparative adjective,

²⁴ “[...] because the principle of demonstration cannot be demonstration, in the same way neither could <the principle> of scientific knowledge be scientific knowledge”. Aristot., *Post. An.*, II, 19, 100^b12-14.

²⁵ “We can begin by noticing the connection between *akribeia* and truthfulness. There is not an English translation of *akribeia* that does it justice in all contexts. Usually it is translated as ‘precision’ or ‘exactitude’, though in *Nic.Eth.* VI.7 Ross translates the adjective as ‘finished’. The word does have both the sense of perfection and of precision. Something is *akribês* when it is rendered to absolute perfection, with neither too much nor too little. And ‘in general, – as Barnes says – being *akribês* seems to amount (vaguely enough) to being of good epistemic quality”. Lear (2005) 103-104.

he makes so in hendiadys with adjectives meaning *exactitude* or *precision*, as in this case (100^b9)²⁶, so that “ἀληθέστερον” and “ἀκριβέστερον” can be considered synonyms²⁷, for a higher realization of truth implies a higher degree of accuracy, rather than the opposite, since there is no need to make reference to different levels of truth as such, nor to ontological differences between them, in accordance with the Aristotelian Principle of Excluded-Middle.

Some hint in this direction can come from few lines before, right when Aristotle wrote that sense-perception could not be *more honourable*, i.e. *more trustworthy*, in terms of precision (τιμιωτέρα κατ'ἀκριβείαν)²⁸ in respect of the gnoseological states that will follow. We may argue then, that the ἀκριβεία of the knowledge provided by a certain state (and, correspondingly, its trustworthiness) is what determines its ranking among others.

If, as previously said, the etymology of ἀληθές does not help us much in comprehending the comparison between intellectual and scientific knowledge, maybe then the etymology of its associate qualification, akin to it, may tell something more about the presumed intensification of understanding involved. For it is the case that the etymology of the adjective ἀκριβής has different and curious layers of antecedent meaning, all of which somehow survive in the background in its classical acceptance of “exact”.

On one hand, the first part of the word (ἀκρ-) almost certainly came from the adjective ἄκρος: the highest, the topmost, the summit²⁹, while on the other hand the second part of the word (-ιβ) perhaps came from εἴβειν (with itacism), an ancient or epic form for λείβειν (cf. Latin *libare*): to pour, to spill. So,

²⁶ All the cases when this happens have been taken in consideration in Cosci (2014): 215-132. Plato had already linked these concepts together (e.g. *Phil.* 58c 2-3), without implying any particular difference between them.

²⁷ Also from a psychological point of view, “Aristotle says that, for each part of the rational soul, the virtue [sc. the excellence] of each part is *the state by which one is most of all truthful* (μάλιστα ἀληθεύσει; 1139^b13). But how do we determine which state this is? Aristotle says that of all the good states of theoretical reason, philosophical wisdom (σοφία) turns out to be its proper virtue because it is ἀκριβεστάτη (most ἀκριβής) (1141^a16). This suggests, then, that *akribeia* is a mark of truthfulness”. Lear (2005) 104.

²⁸ Aristot., *Post.An.*, II, 19, 99^b33-34.

²⁹ “The sense points to ἄκρος as first part of the word”. Liddell-Scott (1940) 52, s.v. “ἀκριβής, ἔς”.

as first suggested Schwyzer³⁰, its most concrete meaning might come from the action of ἄκροϛ plus εἶβειν, namely “pouring from above” or “pouring up to the edge”, maintaining that this action was performed up to the right level, for example in a cup filled with water or wine just up to its brim: nothing more and nothing less, but collimating the content with the container³¹. The consequent idea of a full level completion that is “nothing too much” but “just full enough”³² might have come from this image of accurate pouring of liquid until saturation.

An alternative etymology of ἀκριβέϛ reads it as a compound of ἄκρι(ϛ), “mountain top”, in dative-locative, and βῆναι, “to go”, so originally it would have meant the act of reaching the highest peak of a mountain³³. If this is rather the ancient origin of the word³⁴, then the original sense of exactness would be the one of making the grade to the top, amounting to the highest and most strategic level (of vision, of control, of understanding), after having full-filled the climbing or the hike uphill, where no further ascension is possible, but just completeness and accomplishment.

In both etymological cases, when applied to qualify forms of linguistic expression, ἀκριβέϛ described an essential and dry style, usually linked with scientific attitude for unambiguous references, with no more words than necessary (cf. ἀκριβολογία, “rigorous precision”). What happened next was that over time this adjective was used more and more to denote exactness, precision, accuracy and even perfection, especially in dialectical-philosophical contexts³⁵. To put it in Leshner’s words, it meant nothing less than “to speak in the ‘highest’, most refined, most polished or exact manner”³⁶. Finally the verb ἀκριβόω, in its absolute meaning, for Aristotle already meant “to be exact, to correspond exactly”³⁷. Correspondence means perfectly fitting the words

³⁰ Schwyzer (1922) 12-13.

³¹ Chantraine (1977) 51.

³² Hence also the documented meaning of ἀκριβέϛ as “parsimonious”, *i.e.* not dissipating, not exceeding the measure. Cf. Adrados-Somolinos (2012).

³³ Tichy (1977).

³⁴ Beekes-van Beek (2009) 56 s.v. ‘ἀκριβής, ἐϛ’.

³⁵ Cf. Kayser (1974).

³⁶ Leshner (1973) 63, n. 50.

³⁷ As registered by Liddell-Scott (1940) 52 s.v. (3). Cf. Kurz (1970).

on the essences of the things, matching item to item without adjustments, approximation or vague “empty space”. So the idea of “full-top” survives underneath relating to intellectual knowledge, the most precise knowledge.

As said, intellectual knowledge deals with the understanding of principles of demonstrations (*αἱ ἀρχαὶ τῶν ἀποδείξεων*) and the principles of demonstrations, being on the top of demonstrative chains, bring about more knowledge overall, not because they are “more informative”, but because many dependent consequences are drawn from them, with a sort of waterfall effect. In addition, Aristotle states that the principles of demonstrations are “*γνωριμώτερα*”, meaning not only that they are “better known” than demonstrations in virtue of their simpler structure, but also that they are “better known” “by nature”, *i.e.* just in virtue of their own unqualified nature (their being *ἀπλῶς*, even if enmattered). “Better known” in themselves also means that they are epistemologically prior³⁸. Therefore, principles turn out to be more explanatory, since they state some general claims which are relevant for all the cases they encompass. For example, principles like definitions (on which demonstrations often depend), are necessary to develop and deductively explain many and different following cases³⁹. Additionally, from an operative point of view, the knowledge of premisses should be more clear and precise than something which is not yet known but should derive its truth from those starting-points.

Precision and clarity (*σαφηνεία*), after all, were synonyms as well not only for Plato⁴⁰ but also for Aristotle, as he explicitly writes⁴¹ that what is more pre-

³⁸ “Since the supreme or first principles within a given discipline are the basis on which the truth of all the other principles can be proven (and thereby known in the most scientific sense of ‘knowledge’), they can be said to be ‘better known’ or ‘epistemological prior’ to all the conclusions that can be deduced from them, even though our knowledge of them is not prior in time”. Leshner (2010) 149. Cf. “One science is more precise (*ἀκριβεστέρα*) than another and [or: *i.e.*] prior to it (*προτέρα*) both if it is at the same time of the fact and of the reason why...”. Aristot., *Post.An.* I, 27, 87^a31-32.

³⁹ From an epistemological point of view “only if the foundations are secure will whatever derives from them be secure; and any security which the derived truths possess must be derivative of the security of the foundations. This indeed is the sense in which they must be more secure – *γνωριμώτερα*: ‘better known’ or perhaps even ‘more cognitive’ – than what they support”. Hankinson (2011) 38.

⁴⁰ In Plato’s *Philebus*, Socrates proposed a sort of ranking of the kinds of pleasure based on their greater or lesser precision and clarity (55c-59d).

⁴¹ Aristot., *Top.*, II, 4, 111^a8-9.

cise, is what it is, “by nature”, more clear. For, as Leshner correctly points out, Aristotle speaks of things that are “‘clear in themselves” [τῆ φύσει σαφῆ] in so far as they are the basic elements and causes whose identification enables us to define the essential nature of things, identify the connections that hold among their attributes, and thereby know them in the fullest and most proper sense of ‘know’” – being this evidently the case of the principles – and then he added that “Aristotle also speaks of... achieving ‘precision’ (τὸ ἀκριβές) and giving a *σαφέστερον* or ‘more precise (or detailed)’ account on some topic”⁴², validating in this way the semantic affinity that was pursued here.

On the other hand, Leshner’s exegesis translates *ἀκριβέστερον* as “most exact”, but not in the sense of accuracy, rather in the sense of what is “most in possession of its first principles”⁴³, and this requires some further explanation.

The problem of this interpretation is that if we take the comparison (set by the comparative adjective) as “being (more) in possession of (its own) first principles”, then this is a criterium which is not equally applicable to our two terms of comparison, namely intellectual knowledge and scientific knowledge. For, scientific knowledge *has* and makes use of demonstrative principles for its operativity, whereas intellectual knowledge *is* the possession of demonstrative principles. “Being in possession of (some) demonstrative principles” is a requisite which is mandatory for scientific knowledge in order to work as such, *i.e.* demonstratively, while “being in possession of (demonstrative) principles” *is* intellectual knowledge as such⁴⁴, and not simply a requisite or its point of arrival, since it is a status “on act” rather than a process.

Providing a couple of parallel passages about the use of the adjective *ἀκριβές* as a superlative or as a comparative of majority, Leshner reminds us that Aristotle previously wrote that sciences which possess the greatest *ἀκρίβεια* (in respect to others) are those which proceed from first principles or from as near to them as possible (*Post. An.* I, 24, 86^a 13-21) and that the closer they are to principles, the more rigorous (*ἀκριβέσταται*) they are (*Metaph.*, A, 2, 982^a

⁴² Leshner (2010) 155.

⁴³ *Ibid.* 63. This view is shared also by Balthussen (2007) 59.

⁴⁴ Cf. “*νοῦς* is one and the same thing with what is universal (the *νοητόν*)”. Couloubaritsis (1980) 470.

25-26). But Leshner's reference is not fully satisfactory since this criterium is at play between demonstrative sciences in those cases, while for the case under study here we should take a comparison in terms of a higher ἀκρίβεια between, for instance, the knowledge of a geometrical theorem (demonstrative) and the knowledge of a geometrical axiom (intellective), and not between the precision of two different sciences. However it still remains valid that working on a more theoretical and formal level is symptom of a higher scientificity, at least because there are an inferior number of particular variables to account for. So if we apply this criterium to our comparison, higher precision would perhaps mean to master a kind of knowledge with a minor error rate, or with a lower susceptibility to error. In the case of intellective knowledge, this would always be equal to zero (or, if not reached, ἄγνοια of principles).

This consideration leads us to the main argument regarding the ἀληθέστερον's ἀκριβέστερον explanation. Intellective knowledge is more precise than scientific knowledge because its object of understanding is simple, immediate and unitary. In fact, science requires middle-terms, causal inquiries, inferential swerves and, most distinctively, it needs more than one element – at last two premisses and one conclusion. With many elements, the risk of error could be just around the corner. Instead, intellective knowledge works with just one element at a time: for instance one definition, one axiom, one universal quantification, etc.⁴⁵ Mistake will be practically and theoretically impossible here, because Aristotle claims that to have a cognitive in-sight of a certain essence does not leave any room for error, but simply and without any fault shows its “what it is” or “what applies to all and every case” (or, in case of missed understanding, it leaves just a blank mind in its regard). One intellective perception is for one simple, undivided and indemonstrable item, so to say, with a 1:1 focus, therefore it necessarily turns out to be congruent and straightforward. The link between precision and simplicity is clear when Aristotle states that being able to detect and isolate simple and unitary elements within a composite framework (e.g. what is the point within the solid) is proper only to some uncommon and precise (ἀκριβοῦς) intelli-

⁴⁵ Moreover major simplicity means *major abstractability*. Cf. Granger (2000) 301; 313, who noted that abstractability of the object is what allows the clear distinction of the principles and their exactness.

gence⁴⁶. So it has been suggested⁴⁷ that this understanding is more accurate because, for Aristotle, it is *more analytical*, that is to say that it is more able to discern those aspects which are more essential (hence more universal) and more elementary (and so no more reducible) of some object of knowledge. In this sense, intellective power is the faculty which is most able to disassemble phenomenal multiplicity and empirical complexity into their invariant constitutive elements, not only for the sake of cognitive economy, but also and most importantly to avoid infinite regress in causal inquiry. Moreover, always regarding the exactness/simplicity correlation, in *Metaphysics M* Aristotle adds that:

*As much more prior and simple things (προτέρων... και ἀπλουστέρων) will be object <of knowledge>, as much more <such knowledge> will have exactness (μᾶλλον ἔχει τὸ ἀκριβές), in fact this is simplicity (τὸ ἀπλοῦν).*⁴⁸

Cognitive exactness derives from its focus on the simplicity of undivided, no-composed items (τὰ ἀμερῆ), which can be detected and recognized, at the end of a long inductive process, as unitary and self-integrated notions. Increasing the precision of understanding (ἀκριβέστερον) simply means tending towards a more accurate and rigorous definition of what-is-not-many, that must be uniquely as it only is. The whole inductive process can be described in terms of tendency towards unity, and intellection can be regarded as the last tone of a (chronologically) antecedent gnoseological *continuum*. Once the unity/exactness of our understanding is reached, for Aristotle, we have infallibility, which we have also in so far as we reach the conclusion of a scientific demonstration once it is proved. The difference is that, along the process of acquisition, the former guarantees *by itself* a minor chance of error in virtue of the nature of the specific object of its cognition⁴⁹. There-

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⁴⁶ Aristot., *Top.* VI, 4, 141^b13.

⁴⁷ Cf. Detel (1998) 169-172.

⁴⁸ Cf. Rev. Ox. transl.: “In proportion as we are dealing with things which are prior in formula and simpler, our knowledge will have more accuracy, i.e. simplicity”. Aristot., *Metaph.* M, 3, 1078^a9-11.

⁴⁹ Cf.: “the simpler things are, the less room there is for error, and so the greater the chance of precise and certain knowledge”. Annas (1976) 150. And also: “the degree of exactness of a certain science depends on the simplicity of its object and on the [conceptual] priority of its corresponding notion in respect to the notions of other sciences’ objects”. Zanatta (2009) 1801, n.61. *My transl.*

fore I suspect that the asserted higher truth of intellectual knowledge *prima facie* depends on a higher accuracy with which it necessarily understands its unitary object. However it has to be specified that higher truth does not mean superior truth as such, but inferior prospect of error in the process of reaching that cognitive status if compared to science (as long as abstraction stays true along the road towards principles from its starting sensations and their stabilisation and consolidation through memories and experiences).

Once we have knowledge of principles, then it will surely be sharper and more clear-cut than a step-by-step processual articulation. Scientific knowledge is a process which always comes together with some discourse or reasoning (*μετὰ λόγου*), while intellectual knowledge, apparently, is more direct and immediate, so that – we might say – the processuality of science is mediated by middle-terms, and so less straight-to-the-point in comparison to a single act of understanding performed by intellectual knowledge.

2. *Higher certainty, higher conviction.* The kind of knowledge requested in order to understand the principles should not only be more precise, but also more secure and reliable than the kind of knowledge which makes a consequent use of those principles. Intellectual knowledge then should be correct not only in itself (in so far as it is, as it necessarily is, true knowledge), but also should be such in relation to the latter form of knowledge. This is because scientific knowledge is fundamentally dependent on it, both for its coming to be and for its truthfulness⁵⁰. For the truth of demonstrations depends on the truth of premisses, so that the comprehension of principles must be more certain and more sound than demonstrative knowledge itself.

However, reliability is a normative standard requested just *a parte subjecti*. Furthermore, it is not an intrinsic property of principles, nor of cognitive understanding that they entail just because of themselves (as for instance Descartes would have desired). Nonetheless, since intellectual knowledge is meant to be a stable psychic condition of discriminative understanding, what Aristotle seems to claim is that it is the most discriminative condition, or, at least, that it is more discriminative than the one constituted by the

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⁵⁰ "There is such a deduction in so far as these items – the premisses from which it proceeds – are the case". Aristot., *Pr.An.* I, 2, 72^a26.

status that we are in when we have scientific knowledge (which, anyway, is almost the maximum that we can attain). It remains undeniable however that the evidence that intellective knowledge and scientific knowledge can respectively provide has the same “epistemic weight” since both of them are knowledge *au pair*⁵¹, even if their ways of comprehension are different.

Difference in the kind of provided evidence can be found between these two forms of knowledge, but not between the truth of their contents. On one hand, there is a difference in the certainty that is required in their understandings and, on the other hand, in the conviction that they can provide once they are reached. So it is not just a matter of knowledge as such, but also of reliability in regard of such knowledge. Trustworthiness and conviction are requirements that, for Aristotle do not merely need to be satisfied from a theoretical point of view, but are in fact guaranteed by principles *because of the inductive ground on which they are permanently built*. So their being *ἀληθέστερον* also depends on their being more trustworthy and convincing (*πιστότερον*) than every other thing, because they have their remote and uninterrupted origin in the empirical world via perception⁵².

In *Post An.* I, 2, 72^a 25-29, we are informed that conviction comes to us mainly via (syllogistic) proofs, but, even more, it should come via what guarantees demonstrative proofs, namely principles, which must be even more known, *i.e.* known in advance (*προγιγνώσκειν ... μάλλον*)⁵³. Everything that we know for sure and that we are irrefutably convinced about, is persuasively in our possession because of what stays upstream in the inferential process, namely principles. Consequently, it is genuinely unavoidable that principles turn out to be, as for Aristotle should be, what is *simpliciter* better known and more convincing (*ἴσμεν τε καὶ πιστεύομεν μάλλον*)⁵⁴.

Someone who is demonstratively persuaded of something (or who is going to deductively reach his comprehension of something) *must have* – Aristotle says –

⁵¹ Cf.: “When we comprehend an indemonstrable principle as a generalization from specific instances, we have an understanding of that truth which *parallels* the understanding we have through demonstration”. Modrak (1981) 74. *Emphasis mine*.

⁵² Cf. Bronstein (2012) 29-62.

⁵³ *Ibid.* 28-29. See my point n. 4 below for this meaning of *μάλλον*.

⁵⁴ *Ibid.* 31-32.

a better understanding of the principles (*μᾶλλον γνωρίζειν*) on a cognitive level *and* be better convinced of them (*μᾶλλον πιστεύειν*) on a psychological level than in respect of everything will ever follow from that. For him, nothing else can be more known and more convincing than the understanding guaranteed by a firm grasp on the principles⁵⁵. The subject of such strong comprehension cannot be persuaded to change his mind for any dialectical or scientific reason, once they are understood as true. True principles entail a higher, right conviction. This is a fundamental element in understanding why, from a subject's perspective, their knowledge is said to be *ἀληθέστερον*.

3. *A more leading and orientative knowledge.* Aristotle probably attributes the qualification of *ἀληθέστερον* to intellectual knowledge in an analogous manner to the way when, at the beginning of *Metaphysics*, he attributes a higher gnoseological status to art (*τέχνη*) in respect of bare expertise (*ἐμπειρία*). He wrote: "we are persuaded that the master-workers in each craft are more honourable and know in a more authentic sense (*μᾶλλον εἰδέναι*) and are wiser than the manual workers, because they know the reasons for the things that are done"⁵⁶. So those technicians who are "more architectural" (*ἀρχιτέκτονας*), i.e. those who hold head-positions of higher management, were well regarded as they had to be more honourable (*τιμιωτέρους*) and more wise (*σοφωτέρους*) than executors⁵⁷. And that happens even if, on a practical level (only), the latter may seem to be more often successful in solving some episodic problems because of their skilled acquaintance with particulars. Nonetheless, the former, thanks to their unbiased and more general knowledge, are closer to actual wisdom (*σοφία*). They have a better understanding of why they are doing what they do. They are more aware of the cause of their effects and the final aim of their efforts is probably clearer to them, since they are more used to dealing with universal issues rather than with particular ones⁵⁸. Because of that, they are also able to teach and master what they

⁵⁵ Cf.: "This connection between the knowable (familiar) and the convincing is significant... It points... to a corresponding difference of cognitive state between the man who has the conviction which comes from a grasp of first principles and the man whose conviction rests on experience". Burnyeat (1978) 127-128. Conviction can come also from scientific conclusions, but for Aristotle the principles of any true conclusion are always more convicting as such.

⁵⁶ Aristot., *Metaph.*, A, 1, 980^a24-29.

⁵⁷ *Ibid.*, 980^a31- 981^b1.

⁵⁸ Cf. Cambiano (2012) 17-20.

know⁵⁹. Similarly here, the knowledge of principles is said to be *ἀληθέστερον* than scientific knowledge, as there, I guess, architectural art was more likely said to be *σοφωτέρους* or *μᾶλλον εἰδέναι* than practical expertise. The proportion is the same, because the “master-workers” turn out to be more leading and directive than the “manual workers”, because the content of knowledge that they have is more general and unbound from immediate practicality. When compared to intellection, demonstrative ability can be regarded as a form of “practicality” too. Moreover, the similarity follows also the fact that the former is what *enables* demonstration and teaching, *being itself* the reason from which derivative forms of knowledge, e.g. sciences, proceed⁶⁰. Following this analogy, we may say that intellectual knowledge with its truth is “more architectural”, namely more “hierarchically upper-ordered”, than scientific knowledge itself.

4. *The Rule of the Comparative*. In order to understand the comparison raised by the adjective *ἀληθέστερον*, we should also keep in mind the so called “rule of the comparative”. When Aristotle makes a comparison and in particular when he says that something is “more” than something else, he can intend the comparison in two different ways. For, as he stated in his *Protrepticus*, the comparison could be meant to point out either a difference of ontological degree (i.e. something is “more X” than something else, if the former exhibits a higher intensity of being X), or, as here, the comparison should be regarded in terms of *conceptual priority* or *logical antecedence* (i.e. something is “more X” than something else if, in respect to X, the former comes first from an axiological point of view than the latter)⁶¹.

⁵⁹ Aristot., *Metaph.*, A, 1, 981^b7-10.

⁶⁰ As Wians said, “one must surely agree that for Aristotle the main task of the teacher lay in imparting a deeper grasp of principles”, and that is possible because the teacher, as it is expected for being one who knows his subject, already has understood the principles of his science and master them with confidence. Wians (1989) 250.

⁶¹ “This adverb [*μᾶλλον*] means ‘more’ and points out a difference in quantity or intensity when it refers to some predicates which are said of different subjects according to an always identical definition (univocal predication), while it means ‘rather’ and opposes a certain true and proper sense (*ἀληθῶς και κυρίως*) [e.g. “being good” said of the healthy/“being true” said of intellectual knowledge of principles] to some other derivative and less strict senses when it is referred to some predicates which are said of many subjects in different ways, but with reference to a common meaning (analogical predication) [“being good” said of a healthy diet, a healthy habit, etc./“being true” as said of scientific proof,

For we use "more" (μᾶλλον) not only in respect of excess in things for which there is a single definition, but also in respect of what is prior and posterior; for example, we say that the healthy is "more good" than the things that are conducive to health, and that what is valuable by its own nature is "more a good" than what is productive of it.

The healthy (being healthy), Aristotle says, is "more good" in respect of healthy things, *i.e.* things that are only instrumentally healthy (for instance, a healthy diet), not because health as such exhibits a more intense degree of goodness (as Plato may have maintained), but rather because it *comes first from a conceptual point of view*, namely because healthy things are said so ("healthy") just paronymically in reference to health, that is essentially good, so that also their "being good" is dependent on the conceptually antecedent being good of the health. So, health as such is said to be "more good" than healthy things, because it is good in a non-derivative way, and so does its self-subsisting definition. This comparative rule should count for our problem too, since the pattern at play is the same. In fact, among the things that are said to be true, intellectual knowledge of the principles is "more true" than demonstrative knowledge, not because the former exhibits a higher degree of truth, but because it is more conducive to truth (in the sense specified before), *coming first from a logical point of view* being the truth of the premisses antecedent to the truth of the conclusion. Therefore, "more" does not specify here any increase of intensity of being, but only conceptual antecedence. In this sense, "more true" can be explained as meaning "both true and conceptually prior"⁶².

5. *The Principle of Causal Synonymy*. According to another concurrent Aristotelian principle, as Leshner noticed⁶³, something is more of- or to a greater degree an *X*, when it is the reason why (*αἰτία*) other things possess the prop-

of a certain evidence, etc.]. *Protrepticus*' text [as the one quoted below] reminds us that, in this latter case, different attributions of one common predicate are those meant by priority-posteriority relations". de Strycker (1969) 303. *My transl.*

⁶² The argument from exactness can also be reduced to the present one, as Barnes (1993) 190 said: "The criteria <for comparative exactness> are held together, in a loose way, by the notion of priority (cf. 87^a31)".

⁶³ Cf. Leshner (1973) 63-64.

erty of X (*An. Post.* I, 2, 72^a 29-30; 72^a 37-^b4; *Metaph.* α, 1, 993^b 24-26)⁶⁴. It is the principle that will be famous under the Scholastic label: “*propter quod alia, id maximum tale*”. For example, Aristotle says, the element of fire is the most hot thing, because, directly or indirectly, it is the cause of “being hot” of all the other things which share the property of “being hot”, so the element of fire can be identified with the hot as such. Technically speaking, the synonym predication that is common to both the terms of comparison is superior – superior because prior – in that term that is the-cause-of that very same predication in the other. So intellectual knowledge can be said to be “truer” than scientific knowledge because intellectual knowledge is the *reason why* demonstrative knowledge is what it is, namely true. In fact intellection provides principles to science and scientific conclusions can be said to be true in virtue of their true principles and not the other way round⁶⁵. Intellectual knowledge is “*more cause of truth*” than science and, finally, in this sense it is said to be ἀληθέστερον. I maintain so in force of the fact, that *An. Post.* II 19 should be read as a parallel of *Metaph.* α 1 (where the notion of being a higher cause of truth comes from)⁶⁶. There Aristotle is speaking about the relation between (intellected) premisses and (demonstrated) conclusion, and not, as many philosophers thought (such as Alexander, Averroes, Aquinas among others)⁶⁷, about the relation between the heavenly movers of celestial bodies and celestial bodies themselves. For, in *Metaph.* α 1 Aristotle wrote: “*the most true thing is that what is the cause of the being truth of the consequent things (ἀληθέστατον τὸ τοῖς ὑστέροις [i.e. conclusions] αἴτιον τοῦ ἀληθέσιν εἶναι)*”⁶⁸. That is causal priority in the sense of causal *and conceptual* antecedence⁶⁹. As in *An.Post.*, the premisses are said to be more true (or even the truest) than what follows from them. Moreover, the premisses are said to be more cause of truth than the conclusions, because the conclusion has the property of “truth” just in virtue of the property of “being true” that premisses “share”

⁶⁴ Cf. Hankinson (2001) 125-200. Cf. also Lloyd (1976) 146-156.

⁶⁵ Cf. “<For Aristotle> principles are the most elementary components of theorems, so they are truer or true in the highest grade too, because the truth of theorems depends on the truth of the principles (cf. *Metaph.* α 1, 993^b 24-31.)”. Detel (1993) 886. *My transl.*

⁶⁶ Cf. Cosci (2014) 91-96; 540-542.

⁶⁷ Cf. Berti (2003) 167-182; Cosci (2014) 84-102; 195-206.

⁶⁸ Aristot., *Metaph.* α, 1, 993^b27. Cf. Jaeger (1957) 35.

⁶⁹ Also Salmieri wrote something similar: “the principles are the cause of the objects of *episteme*; so, by deducing these effects from the principles, one sees the effects as following necessarily from necessary causes”. Cf. Salmieri *et al.* (2014) 2.

with them, transmitting their own truth-value in the proper way. That is precisely the application of the Principle of Causal Synonymy in regard of the property of “being true”. In this sense, we may say that intellectual knowledge and scientific knowledge share equal capacity of truth-bearing, but the explanatory power of intellectual knowledge, given its superior generality and logical antecedence, can be applied to a higher number of cases.

A “more direct” way of knowledge

Finally, the comparison set by ἀληθέστερον can be understood also in terms of time. What is ongoing underneath here is not a comparison between intellectual knowledge and scientific knowledge on a time basis in the sense of durability, *i.e.* how longer they last, since both of them are everlasting. The notion of time implied here is about what I shall call “inferential speed”. It regards how much processuality is needed before reaching the comprehension of their respective object of knowledge, or, in other words, the elapsed time before acquiring their full understanding, in the consideration of the amount of steps requested. Now, scientific knowledge always needs more than one cognitive step in order to reach its conclusion, whereas, at the end of the preparatory inductive process, intellectual knowledge needs zero steps on its side, so that its “inferential speed” is so maximised that is not even “inferential”.

After all, a peculiar, important quality that Aristotle attributes to cognitive intellection is *fast perspicacity* or *alacrity*⁷⁰. As it is said in *Nicomachean Ethics*, “perspicacity (ἀνχίνοια) is a kind of mental promptitude (εὐστοχία, literally: the ability of directly hitting the target)” and “mental promptitude does not imply reasoning (ἄνευ λόγου) and it is somehow *fast* (ταχύ τι)”⁷¹. Such cognitive quality is more a disposition of men of insight, rather than of hard scientists.

⁷⁰ Ἀνχίνοια, also translated as “acumen” (Barnes), “quick wit” (Kosman) or “mental readiness” (Mignucci). Traditionally, this quality underlines *noûs*’ heuristic character (*cf.* “ἔξις εὐρευτική”, *Suda*, s.v.), being its peculiar ἀνχίνοια, as Damascius said, “an acute and tight-witted natural power capable of being applied in many directions [intellectual as well practical] in a short amount of time, very quick to understand and recognise the traces of what it is seeking” (fr.71 Zintzen [31 Asmus]). For Aristotle it describes *noûs*’ capacity for finding missing explanatory middle-terms (*Post.An.*, I, 34). It is a natural talent, but differently developed among men. *Cf.* Simard (1946) 220-225.

⁷¹ *Aristot., Nic. Eth.*, V, 10, 1142^b 6-7; 5-6.

As Tuominen wrote: “Aristotle’s reference to agility and quickness of intellect (*ἀνχίνοια*, in *Post.An.* I, 34) affirms that it is *νοῦς* that comes to grasp explanations; *the more agile it is, the quicker it grasps what explanation is*”⁷². Its higher speed in understanding depends on the more direct way in which intellectual knowledge grasps its object. This might have influenced its qualification as *ἀληθέστερον*.

On these lines, one more and last reference should be taken in consideration: since it is the only other passage in *Analytics* where Aristotle uses the adjective “more true”, it turns out to be very useful for having a last look at our puzzle. In fact, in *Prior Analytics* 1. 27, Aristotle interestingly uses the comparative adjective in the following way:

*The more appropriate [per se] premisses one has available, the faster one will hit upon a conclusion, and the more these belong in truth, the more one will hit upon demonstration (ὅσῳ μὲν γὰρ ἂν πλειόνων τοιούτων εὐπορή τις, θᾶττον ἐντεύξεται συμπεράσματα, ὅσῳ δ’ ἂν ἀληθεστέρων, μᾶλλον ἀποδείξει)*⁷³.

Aristotle provides two correlations here, where the latter is dependent on the former:

1. *the more is <the pertinence of> the premisses, the faster is the reach of the <true> conclusion, and:*
2. *the more these premisses belong in truth, the more one will hit upon demonstration.*

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The first correlation comes as a requirement of selection of proper and pertinent premisses in order to straightforwardly reach the conclusion. The adjective *θᾶττον*, comparative from *ταχύς*, means “faster” and it describes what I called the “inferential speed” of reaching the right conclusion. In this context, it is a sort of conceptual component of “truer”, as it seems from the second, consequent correlation.

⁷² Tuominen (2010) 140. *My italics*. Cf. also Tuominen (2007) 68-111.

⁷³ Aristot., *Pr.An.*, I, 27, 43^b8-11.

The antecedent of the second correlation, namely “the truer are the premisses” does not mean “the more the truth of the premisses is”⁷⁴, but it means “the more premisses <among the pertinent ones> are true”. I would interpret here: the more premisses are higher-orderly true, namely are more architectonically true in the senses specified before.

The correlative result of this condition is here “the more one will demonstrate (*μᾶλλον ἀποδείξει*)”. This has been interpreted in terms of quantity or frequency (as “demonstrate more often; produce more demonstration”)⁷⁵, or in terms of ease and probability (as “one has better chance of producing a demonstration the more one is supplied with true propositions”)⁷⁶. In any case, it is not a matter of intensity or degrees of demonstration (since demonstration is either reached or is not), but rather a difference of capacity of demonstrative power. Similarly, it is the case of truth here, since some premisses (*i.e.* first principles) are more truth-bearing formulae than others premisses, but none of these are “more true” as such.

So, the more premisses are true, namely the more premisses are higher-orderly true, the more demonstrative power will be available. Therefore one last important difference between scientific knowledge and intellective knowledge is neither about the truth-value, nor about the persistence of it (which is the same and everlasting), but about the *type* of access: inferential in the former case, while direct (or intellective) in the latter.

In any case there is no room for hierarchical degrees of truths whose ordering would be dependent on how their knowledge was gained: for Aristotle, in so far as it is knowledge, it is true.

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⁷⁴ Namely, not as intended by Bäck: “the *truer* the apprehension, the *better* the demonstration”. Cf. before, p. 140 [internal reference].

⁷⁵ Smith (1989) 151, where it is said also that “demonstration does not seem to admit degrees”.

⁷⁶ Striker (2009) 193. Cf. also Mignucci (1969) 444-445.

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