

POSTERIOR ANALYTICS

Aristotle

(Alternate Translation)

Book 1

Chapter 1

1. All teaching and all intellectual learning come to be from pre-existing knowledge. And this is clear by looking at all cases: for the mathematical sciences come to be in this way, and also each of the other arts. And similarly also for discussions, both those which come from syllogisms and those which come from induction, for both produce teaching from things known beforehand—the first [i.e. discussions from syllogism] accepting [conclusions] from things already known, and the second [i.e. discussion from induction] showing the universal through what is clear in the particular. And similarly also do rhetorical [discussions] persuade, for they do so either through example, which is an induction, or through enthymeme, which is a syllogism.

2. In two ways is it necessary to know something beforehand. For in some cases it is necessary to think beforehand *that* certain things are so, and in other cases it is necessary to understand *what is meant*, and sometimes both. For example, as to “Each thing is true either to affirm or to deny”, [it is necessary to know] *that it is*; and as to “triangle”, [it is necessary to know] what this signifies; but as to “the unit”, [it is necessary to know] both what it signifies and that it exists—for each of these things is not similarly clear to us.

3. And in some cases knowing [comes to] those knowing certain things before [in time], and of other things it is necessary to acquire knowledge together [in time], as in the case of whatever things fall under the universals of which people [already] have knowledge. For someone [already] knew that every triangle has its three angles equal to two rights, but inducing that this [figure] which is in a semicircle is a triangle, he knew this together [in time with the conclusion that it has its three angles equal to two rights]. For there is learning of such things in this way, and it is not through a middle term that the last term is known, as in the case of whatever singular things exist and are not said of a subject.

4. Before inducing or accepting a syllogism [for a conclusion], perhaps someone should be said “to know” [the conclusion] in one way, but not in another way. For he did not know it if this is [said] simply, but he knew it in a certain way, and that [the figure in the semicircle] has [an angle sum of] two rights simply speaking he did not know, but it is clear that in one way indeed he knew, although simply speaking he did not know. For if not, the dilemma in the *Meno* comes about, for either people will learn nothing or else only those things which they already knew.

For one must not say, as [some] argue in order to resolve [the dilemma], “Do you know whether every two is even or odd?”, and to anyone saying “Yes”, they bring out a certain two which was not previously known to exist—for they solve [the dilemma] by saying they do not know that every two is even, but only what they know is a two. But they know that of which they truly have and accept a demonstration; and they accept [demonstration] not about all which they know to be a triangle or number, but simply about all number and triangle. For not one premise of such a sort is accepted, [being about] that which you know to be a number or which you know is a straight line, but [each premise is] about all [without qualification].

5. But nothing (as I think) prevents the one who learns something from knowing it in one way and being ignorant of it in another way. For it is not incongruous if he in some way already knows what he is learning, but only if he is learning it in the very same way as he also knows it.

Book 2

Chapter 19

6. It is now clear, concerning syllogism and demonstration, what each one is, and how each comes to be. And similarly, too, for demonstrative science, for it is the same thing.

7. Now about the principles—how the principles come to be known, and what is the habit knowing [them], this becomes clear first by raising difficulties.

8. So, that it is not possible to know by means of demonstration while not knowing the first immediate principles was already said before. But someone might be in difficulty about whether the knowledge of immediate things is the same or not the same [as demonstrative science of conclusions]; and whether there is or is not science of each [of the immediate principles], or is there indeed science of the former [i.e. of each conclusion], whereas [the habit] of the latter [i.e. of each immediate principle] is of some other kind; and whether [the immediate principles] are not in [the soul from the beginning] but the habits [of them] come to be, or whether they are in [the soul already], and they escape [our] notice.

9. Now if [we say] we already have them [from the start], this is incongruous. For it would happen that [we] have knowledge of things more certain than by demonstration, and yet they would escape [our] notice.

10. But if we acquire them not having had them before, then how do we know and learn from no pre-existing knowledge? For that is impossible, as we said in the case of demonstration.

11. So it is clear that neither is it possible [for us] to have them while not knowing it, nor for the habit [of them] to come to be in those not having [some pre-existing knowledge].

12. Therefore it is necessary for us to have a power, but not of such a sort as is more honorable than these [first principles] with respect to certainty. And it is seen to exist in all animals, for they have a natural power of judging which we call sense. And although sense is in all animals, in some animals there is a sensible retention, but in others this does not come to be.

13. So in whatever ones this does not come to be, there is not in them any knowledge beyond what they are sensing, either at all or else not of the things about which [a retention] does not come to be. But in those which by sensing [also retain], it is possible [for them] to have a certain [knowledge] in the soul [beyond what they are sensing].

14. So when many such [retentions] have been made, now there arises a further difference, since in some [animals] it is possible for a reason to come to be from the memory of such things, but in other [animals] it is not [possible]. So from sense comes to be memory, as we said, and from memory made many times of the same thing, experience. For from a number of many memories there is one experience. And from experience, or from every universal resting in the soul, [comes] the one beyond the many, which, since it is one and the same in all, is the principle of art and of science (if it is about producing, it is [a principle] of art, but if about being, of science). Therefore they are not definite habits in [the soul from the start], nor do they come to be from more known habits, but from sense, as in a reversal in battle, for by one [soldier] making a stand, another might also stand, and afterwards another, until they come to a principle. And the soul, since it is of such a sort, is of a kind to be able to undergo this.

15. Let us say again what was just said, but not said clearly. By one of [many] non-differing things making a stand in the soul, the first universal is in the soul. For although it is [necessary] to sense the singular, sense is also of the universal, such as “man”, and not [just] of the man Callias. Again, among these [another one] makes a stand, until certain indivisible universals also stand, just as “such an animal” [stands] until “animal” [does], and so on in the same way. So it is clear that it is necessary for us to know the first [universals] by induction, for it is in this way that sense produces the universal.

16. And since among the habits which concern the intellect, by which we say what is true, some indeed are always true, but others admit of falsehood, such as opinion and judgment, but science and understanding are always of what is true, and no kind [of knowledge] is more certain than science other than understanding, but the principles of demonstration are more known [than scientifically known conclusions], and every science is by reasoning, indeed there will not be science of the principles.

17. And from considering these things, since nothing but understanding can be truer than science, therefore understanding will be [the habit] of principles. And since the principle of demonstration is not demonstration, for this reason neither is science [the principle] of science.

18. So if we have no other true [habit] beyond science, therefore understanding will be the principle of science, and the principle [cognitive] of [each] principle. And all this [i.e. science]

has to the whole genus of things [about which there is science] the same relation [as understanding has to principles].