



## Book A

### 1

980a All men by nature desire understanding.<sup>1</sup> A sign of this is their liking  
of sensations; for, even apart from the need of these for other things, they  
are liked for their own sake, and of all sensations those received by means  
of the eyes are liked most. For, not only for the sake of doing something  
else, but even if we are not going to do anything else, we prefer, as one  
25 might say, seeing to the other sensations. The cause of this is the fact that,  
of all the sensations, seeing makes us know in the highest degree and  
makes clear many differences in things.<sup>2</sup>

980b By nature, animals are born with the power of sensation, and from sen-  
sation memory comes into being in some of them but not in others. Be-  
cause of this, animals which can remember are more prudent or more  
teachable than animals which cannot remember. Of the former, those  
25 which cannot hear sounds are prudent but cannot be taught, such as  
the bee or any other species of animals like it, but those which can hear  
can also be taught.

All animals, except men, live with the aid of appearances<sup>3</sup> and mem-  
ory, and they participate but little in experience; but the race of men  
981a lives also by art and judgment.<sup>4</sup> In men, experience comes into being  
from memory;<sup>5</sup> for many memories<sup>5</sup> of the same thing<sup>6</sup> result in the  
capacity for one experience. And experience seems to be almost similar<sup>7</sup>  
to science and art, but science and art come to men through experience;<sup>8</sup>  
for, as Polus rightly says, "experience made art, but inexperience, luck."<sup>9</sup>

5 Now art comes into being when out of many notions<sup>10</sup> from experience  
we form one universal belief concerning similar facts. For, to have a  
belief that when Callias was having this disease this benefited him, and  
10 similarly with Socrates and many other individuals, is a matter of ex-  
perience; but to have a belief that this benefited all persons of a certain  
kind who were having this sickness, such as the phlegmatic or the bilious  
or those burning with high fever, is a matter of art.

Experience does not seem to differ from art where something is to be done; in fact, we observe that men of experience succeed more than men who have the theory<sup>11</sup> but have no experience. The cause of this is that experience is knowledge of individuals but art is universal knowledge, and all *actions* and productions deal with individuals. The doctor does not cure 'a man' universally taken, except accidentally, but Callias or Socrates or someone else to whom also the essence of man happens to belong.<sup>12</sup> If, then, someone without experience has the theory and knows the universal but is ignorant of the individual included under this universal, he will often fail to cure; for it is rather the individual that is curable. Nevertheless, we regard understanding and comprehension as belonging to art more than to experience, and we believe that artists are wiser than men of experience; and this indicates that wisdom is attributed to men in virtue of their understanding rather than their experience, inasmuch as men of understanding know the cause but men of experience do not. For men of experience know the fact but not the *why*<sup>13</sup> of it; but men of art know the *why* of it or the cause. It is because of this that we regard also the master-artists of a given craft as more honorable, as possessing understanding to a higher degree, and as wiser than the manual workers, since the former know the causes of the things produced, but the latter are like certain inanimate things which act but do so without understanding that action, as in the case of fire which burns. Inanimate things bring about the effects of their actions by some nature, while manual workers do so through habit which results by practicing.<sup>14</sup> Thus, master-artists are considered wiser not in virtue of their ability to do something but in virtue of having the theory and knowing the causes. And in general, a sign of a man who understands is the ability to teach, and because of this we regard art more than experience to be science; for those who have the art can teach, but those who do not have it cannot teach. Again, we do not consider any of the sensations to be wisdom, although these are the most authoritative in the knowledge of individuals; but they do not tell us the *why* of anything, as for example why fire is hot, but only the fact that it is hot.

The first who arrived at any art that went beyond the ordinary sensations was probably admired by men, not only because there was some usefulness in the objects arrived at, but also as being wise and superior to others. As more arts were arrived at, some for the necessities of life and others as the only ends of *activity*, those who arrived at the arts for the latter purpose were always believed to be wiser than those who did so for the former because their sciences were not instrumental to something else. Now when all such arts were already developed, the sciences<sup>15</sup> concerned neither with giving pleasure to others nor with the

## BOOK I

### CHAPTER I

All men by nature are actuated with the desire of knowledge, and an indication of this is the love of the senses; for even, irrespective of their utility, are they loved for their own sakes; and preeminently above the rest, the sense of sight. For not only for practical purposes, but also when not intent on doing anything, we choose the power of vision in preference, so to say, to all the rest of the senses. And a cause of this is the following,—that this one of the senses particularly enables us to apprehend whatever knowledge it is the inlet of, and that it makes many distinctive qualities manifest. 980a

By nature then, indeed, are animals formed endowed with sense; but in some of them memory is not innate from sense, and in others it is. And for this reason are these possessed of more foresight, as well as a greater aptitude for discipline, than those which are wanting in this faculty of memory. Those furnished with foresight, indeed, are yet without the capability of receiving instruction, whatever amongst them are unable to understand the sounds they hear; as, for instance, bees, and other similar tribes of animals; but those are capable of receiving instruction as many as, in addition to memory, are provided with this sense also. 980b

The rest, indeed, subsist then through impressions and the operations of memory, but share experience in a slight degree; whereas the human race exists by means of art also and the powers of reasoning.

Now, experience accrues to men from memory; for repeated acts of memory about the same thing done constitute

the force of a single experience: and experience seems to be a thing almost similar to science and art.

981a But science and art result unto men by means of experience; for experience, indeed, as Polus saith, and correctly so, has produced art, but inexperience, chance. But an art comes into being when, out of many conceptions of experience, one universal opinion is evolved with respect to similar cases. For, indeed, to entertain the opinion that this particular remedy has been of service to Callias, while labouring under this particular disease, as well as to Socrates, and so individually to many, this is an inference of experience; but that it has been conducive to the health of all,—such as have been defined according to one species,—while labouring under this disease, as, for instance, to the phlegmatic, or the choleric, or those sick of a burning fever, this belongs to the province of art.

As regards, indeed, practical purposes, therefore, experience seems in no wise to differ from art; nay, even we see the experienced compassing their objects more effectually than those who possess a theory without the experience. But a cause of this is the following—that experience, indeed, is a knowledge of singulars, whereas art, of universals; but all things in the doing, and all generations, are concerned about the singular: for he whose profession it is to practise medicine, does not restore man to health save by accident, but Callias, or Socrates, or any of the rest so designated, to whom it happens to be a man. If, therefore, any one without the experience is furnished with the principle, and is acquainted with the universal, but is ignorant of the singular that is involved therein, he will frequently fall into error in the case of his medical treatment; for that which is capable of cure is rather the singular.

But, nevertheless, we are of opinion that, at least, knowledge and understanding appertain to art rather than experience; and we reckon artists more wise than the experienced, inasmuch as wisdom is the concomitant of all philosophers rather in proportion to their knowledge.

But this is so because some, indeed, are aware of the cause, and some are not. For the experienced, indeed, know that a thing is so, but they do not know wherefore it is so; but others—I mean the scientific—are acquainted with the

wherefore and the cause. Therefore, also, we reckon the chief artificers in each case to be entitled to more dignity, and to the reputation of superior knowledge, and to be more wise than the handicraftsmen, because the former are acquainted with the causes of the things that are being constructed; whereas the latter produce things, as certain inanimate things do, indeed; yet these perform their functions unconsciously,—as the fire when it burns. Things indeed, therefore, that are inanimate, by a certain constitution of nature, perform each of these their functions, but the handicraftsmen through habit; inasmuch as it is not according as men are practical that they are more wise, but according as they possess the reason of a thing, and understand causes. 981b

And, upon the whole, a proof of a person's having knowledge is even the ability to teach; and for this reason we consider art, rather than experience, to be a science; for artists can, whereas the handicraftsmen cannot, convey instruction.

And further, we regard none of the senses to be wisdom, although, at least, these are the most decisive sources of knowledge about singulars; but they make no affirmation of the wherefore in regard of anything,—as, for example, why fire is hot, but only the fact that it is hot.

Therefore, indeed, is it natural for the person who first discovers any art whatsoever, beyond the ordinary power of the senses, to be the object of human admiration, not only on account of something of the things that have been discovered being useful, but as one that is wise and superior to the rest of men. But when more arts are being discovered—both some, indeed, in relation to things that are necessary, and others for pastime—we invariably regard such more wise than those, on account of their sciences not being for bare utility. Whence all things of such a sort having been already procured, those sciences have been invented which were pursued neither for purposes of pleasure nor necessity, and first in those places where the inhabitants enjoyed leisure: wherefore, in the neighbourhood of Egypt the mathematical arts were first established; for there leisure was spared unto the sacerdotal caste. It has then, indeed, been declared in the *Ethics* what is the difference between an art and a science, and the rest of the things of the same description.

But, at present, the reason of our producing this treatise is

## I. BOOK ALPHA

### I

ALL MEN naturally have an impulse to get knowledge[182]. 980a21  
A sign of this is the way we prize our senses; for even apart  
from their utility, they are prized on their own account,  
especially sensing with the eyes. For not only from practical  
motives, but also when we have nothing practical in view,  
we could be said to prefer sight to any of the other senses.  
The reason is that of all the senses it can best bring us  
knowledge and best discerns the many differences among  
things. Any animal is provided by nature[101] with its  
senses; but in some animals sensing leads to memory,  
whereas in others it does not. Animals with memory are 980b21  
more intelligent[172] and teachable than those which are  
not able to remember. Those unable to hear (such as bees)  
are intelligent, but not teachable; whereas those which  
have both memory and hearing are teachable. Thus, all  
animals except man live by what they perceive[173] and  
by memories, but have little experience[168]; whereas the  
human race lives also by art[171] and reasoning.

From memory men can get experience; for by often re-  
membering the same thing they acquire the power of unified 981a  
experience. Experience, though it seems quite like scientific  
knowledge[179] and art, is really what produces them; for,  
as Polus rightly says,\* experience brought art, and inex-  
perience, luck. Art is born when out of the many bits of  
information[169e] derived from experience there emerges a  
grasp of those similarities in view of which they are a unified

\* Plato *Gorgias* 448C, 462B, C.

whole[43]. Thus, a man is experienced who knows that when Callias was ill of this disease he was helped by this medicine, and so for Socrates and for many others, one by one; but  
10 to have art is to grasp that all members of the group[20] of those † who are ill of this disease have been helped by this medicine.

Now experience seems in no respect inferior to art in a situation in which something is to be done. On the contrary, we see experienced men succeeding even better than those who know the reasons[90], but who lack experience. The reason is that experience, like action or production, deals with things severally as concrete individuals[40], whereas art deals with them generally[43]. Thus, a physician does not cure "man" (except incidentally[3]), but he cures Callias,  
20 Socrates, or some other individual with a proper name, each of whom happens[3b] to be a man. If, then, someone lacking experience, but knowing the general principles[90] of the art, sizes up a situation as a whole[43], he will often, because he is ignorant of the individuals within that whole, miss the mark and fail to cure; for it is the individual[40] that must be cured.

Nevertheless, we believe that knowing[182] and understanding[186] characterize art rather than experience. And so we take experts in an art to be wiser[180] than men of mere experience; because wisdom presumably comes only with knowledge[182], and we believe that the experts can analyze and explain[83], whereas others cannot. Men of experience discern the fact "that"[202], but not the reason  
30 "why"[203]; whereas experts know the reason why and explanation[83]. Hence we also hold master workmen in each craft to be more valuable and discerning and wise  
981b than manual workers, because the former can discriminate the various factors[83] relevant to the various effects produced; whereas the latter, like inanimate objects, produce effects, as fire burns, without knowing what they are doing.

† A<sup>b</sup>D<sup>b</sup>. Other codices: those who have a certain high fever symptomatic of this disease, all the phlegmatic or the bilious, have been helped by this medicine.

Inanimate objects produce their effects somehow by nature[101]; and manual workers, by habit[157]. Master workers are presumably wiser[180], then, not because they are practical, but because they have their reasons[90] and can explain[83] what they are doing.

In general, too, it is a sign that a man knows[182] when he can teach. Hence we believe that art is more scientific[179] than experience. For men of knowledge can teach; whereas men only experienced cannot. So it takes more than being sensitive[165a] to make a master in art; for by the senses <sup>10</sup> we grasp things well as separate things, but the senses do not tell us the why about anything. They do not tell us why fire is hot, but only that it is hot.

The first person who invented an art beyond common sense[165] was fittingly looked upon by his fellowmen as a wonder; not only because there was something useful in his discoveries, but also because he was thought wise and superior to others. With the development of more arts, some for our necessities and others for our enjoyment, we invariably take the contributors to the latter to be wiser than the contributors to the former, because they are wise about what is not merely useful. Accordingly, after all such bodies <sup>20</sup> of knowledge had first been established, there followed those not directed either to our pleasure or to our necessities. They appeared first in those places where men had leisure. Hence, it was in Egypt that the mathematical arts were first developed; for there the priestly caste was set apart as a leisure class.

Now we have shown in the *Ethics* ‡ what differences there are between art[171] and science[179] and other such general disciplines. But what we intend to say in the present account is that all men take what is called "wisdom"[180] to be concerned with the first principles[82] of explanation[83]: so that, to sum up what we have said, the man of experience is deemed wiser than those who merely sense things, the <sup>30</sup> artist than men of experience, and the master worker than

‡ *Ethics* vi.3-7.1139b14-1141b8.