Sketches Of The History Of Man

In Two Volumes

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Chap. V. Account of the remaining books of the Organon.

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SECT. I. *Of the Laſt Analytics.*

IN the Firſt Analytics, ſyllogiſms are conſidered in reſpect of their form; they are now to be conſidered in reſpect of their matter. The form lies in the neceſſary connection between the premiſes and the concluſion; and where ſuch a connection is wanting, they are ſaid to be informal, or vicious in point of form.

But where there is no fault in the form, there may be in the matter; that is, in the propoſitions of which they are compoſed, which may be true or falſe, probable or improbable.

When the premiſes are certain, and the concluſion drawn from them in due form, this is demonſtration, and produces ſcience. Such ſyllogiſms are called *apodictical*; and are handled in the two books of the Laſt Analytics. When the premiſes are not certain, but probable only, ſuch ſyllogiſms are called *dialectical*; and of them he treats in the eight books of the Topicks. But there are ſome ſyllogiſms which ſeem to be perfect both in matter and form, when they are not really ſo: as, a face may ſeem beautiful which is but painted. Theſe being apt to deceive, and produce a falſe opinion, are called *ſophiſtical*; and they are the ſubject of the book concerning Sophiſms.

To return to the Laſt Analytics, which treat of demonſtration

and of ſcience: We ſhall not pretend to abridge thoſe books; for Ariſtotle's writings do not admit of abridgement: no man can ſay what he ſays in fewer words; and he is not often guilty of repetition. We ſhall only give ſome of his capital concluſions, omitting his long reaſonings and nice diſtinctions, of which his genius was wonderfully productive.

All demonſtration muſt be built upon principles already known; and theſe upon others of the ſame kind; until we come at laſt to firſt principles, which neither can be demonſtrated, nor need to be, being evident of themſelves.

We cannot demonſtrate things in a circle, ſupporting the concluſion by the premiſes, and the premiſes again by the concluſion. Nor can there be an infinite number of middle terms between the firſt principle and the concluſion.

In all demonſtration, the firſt principles, the concluſion, and all the intermediate propoſitions, muſt be neceſſary, general, and eternal truths: for of things fortuitous, contingent, or mutable, or of individual things, there is no demonſtration.

Some demonſtrations prove only, that the thing is thus affected; others prove, why it is thus affected. The former may be drawn from a remote cauſe, or from an effect: but the latter muſt be drawn from an immediate cauſe; and are the moſt perfect.

The firſt figure is beſt adapted to demonſtration, becauſe it affords concluſions univerſally affirmative; and this figure is commonly uſed by the mathematicians.

The demonſtration of an affirmative propoſition is preferable to that of a negative; the demonſtration of an univerſal to that of a particular; and direct demonſtration to that *ad abſurdum*.

The principles are more certain than the concluſion.

There cannot be opinion and ſcience of the ſame thing at the ſame time.

In the ſecond book we are taught, that the queſtions that may be

be put, with regard to any thing, are four: 1. Whether the thing be thus affected. 2. Why it is thus affected. 3. Whether it exists. 4. What it is.

The last of these questions Aristotle, in good Greek, calls the *What is it* of a thing. The schoolmen, in very barbarous Latin, called this, the *quiddity* of a thing. This quiddity, he proves by many arguments, cannot be demonstrated, but must be fixed by a definition. This gives occasion to treat of definition, and how a right definition should be formed. As an example he gives a definition of the number *three*, and defines it to be the first odd number.

In this book he treats also of the four kinds of causes; efficient, material, formal, and final.

Another thing treated of in this book is, the manner in which we acquire first principles, which are the foundation of all demonstration. These are not innate, because we may be for a great part of life ignorant of them: nor can they be deduced demonstratively from any antecedent knowledge, otherwise they would not be first principles. Therefore he concludes, that first principles are got by induction, from the informations of sense. The senses give us informations of individual things, and from these by induction we draw general conclusions: for it is a maxim with Aristotle, That there is nothing in the understanding which was not before in some sense.

The knowledge of first principles, as it is not acquired by demonstration, ought not to be called science; and therefore he calls it *intelligence*.

SECT.

Sect. 2. *Of the Topics.*

The profeſſed deſign of the Topics is, to ſhew a method by which a man may be able to reaſon with probability and conſiſtency upon every queſtion that may occur.

Every queſtion is either about the genus of the ſubject, or its ſpecific difference, or ſome thing proper to it, or ſomething accidental.

To prove that this diviſion is complete, Ariſtotle reaſons thus: Whatever is attributed to a ſubject, it muſt either be, that the ſubject can be reciprocally attributed to it, or that it cannot. If the ſubject and attribute can be reciprocated, the attribute either declares what the ſubject is, and then it is a definition; or it does not declare what the ſubject is, and then it is a property. If the attribute cannot be reciprocated, it muſt be ſomething contained in the definition, or not. If it is contained in the definition of the ſubject, it muſt be the genus of the ſubject, or its ſpecific difference; for the definition conſiſts of theſe two. If it is not contained in the definition of the ſubject, it muſt be an accident.

The furniture proper to fit a man for arguing dialectically may be reduced to theſe four heads: 1. Probable propoſitions of all ſorts, which may on occaſion be aſſumed in an argument. 2. Diſtinctions of words which are nearly of the ſame ſignification. 3. Diſtinctions of things which are not ſo far aſunder but that they may be taken for one and the ſame. 4. Similitudes.

The ſecond and the five following books are taken up in enumerating the topics or heads of argument that may be uſed in queſtions about the genus, the definition, the properties, and the accidents of a thing; and occaſionally he introduces the topics for proving

proving things to be the ſame, or different; and the topics for proving one thing to be better or worſe than another.

In this enumeration of topics, Ariſtotle has ſhewn more the fertility of his genius, than the accuracy of method. The writers of logic ſeem to be of this opinion: for I know none of them that has followed him cloſely upon this ſubject. They have conſidered the topics of argumentation as reducible to certain axioms. For inſtance, when the queſtion is about the genus of a thing, it muſt be determined by ſome axiom about genus and ſpecies; when it is about a definition, it muſt be determined by ſome axiom relating to definition, and things defined: and ſo of other queſtions. They have therefore reduced the doctrine of the topics to certain axioms or canons, and diſpoſed theſe axioms in order under certain heads.

This method ſeems to be more commodious and elegant than that of Ariſtotle. Yet it muſt be acknowledged, that Ariſtotle has furniſhed the materials from which all the logicians have borrowed their doctrine of topics: and even Cicero, Quintilian, and other rhetorical writers, have been much indebted to the topics of Ariſtotle.

He was the firſt, as far as I know, who made an attempt of this kind: and in this he acted up to the magnanimity of his own genius, and that of ancient philoſophy. Every ſubject of human thought had been reduced to ten categories; every thing that can be attributed to any ſubject, to five predicables: he attempted to reduce all the forms of reaſoning to fixed rules of figure and mode, and to reduce all the topics of argumentation under certain heads; and by that means to collect as it were into one ſtore all that can be ſaid on one ſide or the other of every queſtion, and provide a grand arſenal, from which all future combatants might be furniſhed with arms offenſive and defenſive in every cauſe, ſo as to leave no room to future generations to invent any thing new.

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The laſt book of the Topics is a code of the laws, according to which a ſyllogiſtical diſputation ought to be managed, both on the part of the aſſailant and defendant. From which it is evident, that this philoſopher trained his diſciples to contend, not for the truth merely, but for victory.

Sect. 3. *Of the book concerning Sophiſms.*

A ſyllogiſm which leads to a falſe concluſion, muſt be vicious, either in matter or form: for from true principles nothing but truth can be juſtly deduced. If the matter be faulty, that is, if either of the premiſes be falſe, that premiſe muſt be denied by the defendant. If the form be faulty, ſome rule of ſyllogiſm is tranſgreſſed; and it is the part of the defendant to ſhew, what general or ſpecial rule it is that is tranſgreſſed. So that, if he is an able logician, he will be impregnable in the defence of truth, and may reſiſt all the attacks of the ſophiſt. But as there are ſyllogiſms which may ſeem to be perfect both in matter and form, when they are not really ſo, as a piece of money may ſeem to be good coin, when it is adulterate; ſuch fallacious ſyllogiſms are conſidered in this treatiſe, in order to make a defendant more expert in the uſe of his defenſive weapons.

And here the author, with his uſual magnanimity, attempts to bring all the fallacies that can enter into a ſyllogiſm under thirteen heads; of which ſix lie in the diction or language, and ſeven not in the diction.

The fallacies in diction are, 1. When an ambiguous word is taken at one time in one ſenſe, and at another time in another. 2. When an ambiguous phraſe is taken in the ſame manner. 3. and 4. are ambiguities in ſyntax; when words are conjoined in ſyntax that ought to be disjoined; or disjoined when they ought

ought to be conjoined. 5. is an ambiguity in proſody, accent, or pronunciation. 6. An ambiguity ariſing from ſome figure of ſpeech.

When a ſophiſm of any of theſe kinds is tranſlated into another language, or even rendered into unambiguous expreſſions in the ſame language, the fallacy is evident, and the ſyllogiſm appears to have four terms.

The ſeven fallacies which are ſaid not to be in the diction, but in the thing, have their proper names in Greek and in Latin, by which they are diſtinguiſhed. Without minding their names, we ſhall give a brief account of their nature.

1. The firſt is, Taking an accidental conjunction of things for a natural or neceſſary connection: as, when from an accident we infer a property; when from an example we infer a rule; when from a ſingle act we infer a habit.

2. Taking that abſolutely which ought to be taken comparatively, or with a certain limitation. The conſtruction of language often leads into this fallacy: for in all languages it is common to uſe abſolute terms, to ſignify things which carry in them ſome ſecret compariſon; or to uſe unlimited terms, to ſignify what from its nature muſt be limited.

3. Taking that for the cauſe of a thing which was only an occaſion, or concomitant.

4. Begging the queſtion. This is done, when the thing to be proved, or ſome thing equivalent, is aſſumed in the premiſes.

5. Miſtaking the queſtion. When the concluſion of the ſyllogiſm is not the thing that ought to be proved, but ſomething elſe that is miſtaken for it.

6. When that which is not a conſequence is miſtaken for a conſequence; as if, becauſe all Africans are black, it were taken for granted that all blacks are Africans.

7. The laſt fallacy lies in propoſitions that are complex, and

imply two affimations, whereof one may be true, and the other falſe; ſo that whether you grant the propoſition, or deny it, you are intangled: as when it is affirmed, that ſuch a man has left off playing the fool. If it be granted, it implies, that he did play the fool formerly. If it be denied, it implies, or ſeems to imply, that he plays the fool ſtill.

In this enumeration, we ought, in juſtice to Ariſtotle, to expect only the fallacies incident to categorical ſyllogiſms. And I do not find, that the logicians have made any additions to it when taken in this view; altho' they have given ſome other fallacies that are incident to ſyllogiſms of the hypothetical kind, particularly the fallacy of an incomplete enumeration in disjunctive ſyllogiſms and dilemmas.

The different ſpecies of ſophiſms above mentioned are not ſo preciſely defined by Ariſtotle, or by ſubſequent logicians, but that they allow of great latitude in the application; and it is often dubious under what particular ſpecies a ſophiſtical ſyllogiſm ought to be claſſed. We even find the ſame example brought under one ſpecies by one author, and under another ſpecies by another. Nay, what is more ſtrange, Ariſtotle himſelf employs a long chapter in proving by a particular induction, that all the ſeven may be brought under that which we have called *miſtaking the queſtion*, and which is commonly called *ignoratio elenchi*. And indeed the proof of this is eaſy, without that laborious detail which Ariſtotle uſes for the purpoſe: for if you lop off from the concluſion of a ſophiſtical ſyllogiſm all that is not ſupported by the premiſes, the concluſion, in that caſe, will always be found different from that which ought to have been proved; and ſo it falls under the *ignoratio elenchi*.

It was probably Ariſtotle's aim, to reduce all the poſſible variety of ſophiſms, as he had attempted to do of juſt ſyllogiſms, to certain definite ſpecies: but he ſeems to be ſenſible that he had fallen

fallen ſhort in this laſt attempt. When a genus is properly divided into its ſpecies, the ſpecies ſhould not only, when taken together, exhauſt the whole genus; but every ſpecies ſhould have its own precinct ſo accurately defined, that one ſhall not encroach upon another. And when an individual can be ſaid to belong to two or three different ſpecies, the diviſion is imperfect; yet this is the caſe of Ariſtotle's diviſion of the ſophiſms, by his own acknowledgement. It ought not therefore to be taken for a diviſion ſtrictly logical. It may rather be compared to the ſeveral ſpecies or forms of action invented in law for the redreſs of wrongs. For every wrong there is a remedy in law by one action or another: but ſometimes a man may take his choice among ſeveral different actions. So every ſophiſtical ſyllogiſm may, by a little art, be brought under one or other of the ſpecies mentioned by Ariſtotle, and very often you may take your choice of two or three.

Beſides the enumeration of the various kinds of ſophiſms, there are many other things in this treatiſe concerning the art of managing a ſyllogiſtical diſpute with an antagoniſt. And indeed, if the paſſion for this kind of litigation, which reigned for ſo many ages, ſhould ever again lift up its head, we may predict, that the Organon of Ariſtotle will then become a faſhionable ſtudy: for it contains ſuch admirable materials and documents for this art, that it may be ſaid to have brought it to a ſcience.

The concluſion of this treatiſe ought not to be overlooked: it manifeſtly relates, not to the preſent treatiſe only, but alſo to the whole analytics and topics of the author. I ſhall therefore give the ſubſtance of it.

" Of thoſe who may be called inventers, ſome have made im-
" portant additions to things long before begun, and carried on
" through a courſe of ages; others have given a ſmall beginning
" to things which, in ſucceeding times, will be brought to greater
" perfection. The beginning of a thing, though ſmall, is the

" chief part of it, and requires the greateſt degree of invention;
" for it is eaſy to make additions to inventions once begun. Now
" with regard to the dialectical art, there was not ſomething done,
" and ſomething remaining to be done. There was abſolutely
" nothing done: for thoſe who profeſſed the art of diſputation,
" had only a ſet of orations compoſed, and of arguments, and
" of captious queſtions, which might ſuit many occaſions. Theſe
" their ſcholars ſoon learned, and fitted to the occaſion. This
" was not to teach you the art, but to furniſh you with the mate-
" rials produced by the art: as if a man profeſſing to teach you
" the art of making ſhoes, ſhould bring you a parcel of ſhoes of
" various ſizes and ſhapes, from which you may provide thoſe
" who want. This may have its uſe; but it is not to teach the
" art of making ſhoes. And indeed, with regard to rhetorical
" declamation, there are many precepts handed down from an-
" cient times; but with regard to the conſtruction of ſyllogiſms,
" not one.

" We have therefore employed much time and labour upon
" this ſubject; and if our ſyſtem appears to you not to be in the
" number of thoſe things, which, being before carried a certain
" length, were left to be perfected; we hope for your favourable
" acceptance of what is done, and your indulgence in what is left
" imperfect."

CHAP.