Prior Analytics

Aristotle (384-322 BC)

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Aristotle, Prior Analytics. Book I, Chapter 1

In the first place it is requisite to say what the subject is of the present treatise, and for the sake of what it is undertaken; viz. that it is concerning demonstration, and for the sake of demonstrative science. Afterwards, it is requisite to define what a proposition is, what a term, and what a syllogism; and also what kind of a syllogism is perfect, and what kind is imperfect. In the next place it must be shown, what it is for a thing to be or not to be in a certain whole, and what we say it is to be predicated of every thing or of nothing, of a certain multitude. A proposition, therefore, is a sentence affirming or denying something of something. And this is universal, in a part, or indefinite. But I denominate universal the being present with every thing or with nothing; in a part, the being present with something, or not with something, or not with every thing; and the indefinite, the being present, or not being present without the universal or particular; such, for instance, as that there is the same science of contraries, or that pleasure is not good. But a demonstrative differs from a dialectic proposition in this; that the demonstrative proposition is an assumption of one part of contradiction; (for he who demonstrates does not interrogate, but assumes) but the dialectic is an interrogation of contradiction. So far, however, as pertains to the framing a syllogism from either proposition, the one in no respect differs from the other. For he who demonstrates, and he who interrogates syllogize, assuming that something is present with, or is not present with something. Hence, a syllogistic proposition, indeed, will be simply an affirmation or negation of something concerning something, after the manner above-mentioned. But a proposition is demonstrative, if it is true, and is assumed through hypotheses from the beginning. And a dialectic proposition, with respect to him who enquires, is

an interrogation of contradiction; but with respect to him who syllogizes, is an assumption of that which is seen and probable, as we have observed in the Topics. What, therefore, a proposition is, and in what the syllogistic, demonstrative, and dialectic proposition differ from each other, will be accurately shown in the following treatises; but for the present purpose, what has been now determined by us may suffice. But I call that a term into which a proposition is dissolved; as, for instance, that which is predicated, and that of which it is predicated, whether to be or not to be is added or separated. And a syllogism is a discourse, in which certain things being admitted, something else different from the things admitted necessarily happens, in consequence of the existence of these admitted propositions. I say, that in consequence of these admitted propositions, something else happens. And when I say that something else happens through these, I mean that there is no need of any external term, in order to the existence of the necessary consequence. Hence I call that a perfect syllogism, which requires nothing else besides the things assumed in order that the necessary consequence may be apparent. But I denominate that an imperfect syllogism, which requires one or more things, which through the supposed terms are necessary, and yet are not assumed through propositions. And it is the same thing, for one thing to be in the whole of another, and for one thing to be predicated of the whole of another, when nothing can be assumed of the subject, of which the other may not be asserted: and to be predicated of nothing is assumed after a similar manner.

Aristotle, Prior Analytics. Book I, Chapter 2

Every proposition is either of that which is simply present, or of that which is present from necessity, or of that which may be present1; and of these, some are affirmative but others negative, according to each appellation, and again, since of affirmative and negative propositions, some are universal, others partial, and others indefinite. This being the case, it is necessary that the universal negative proposition of that which is present may be converted in its terms. Thus, for instance, if no pleasure is good, neither will any good be pleasure. But it is necessary that a universal affirmative (categoric) proposition should be converted indeed, yet not universally, but in a part. For instance, if all pleasure is good, it is also necessary that a certain good should be pleasure. And of particular propositions it is necessary that the particular affirmative should be converted in a part; for if a certain pleasure is good, a certain good will also be pleasure. But it is not necessary that a particular negative proposition should be converted. For it does not follow that if man is not present with a certain animal, that animal also is not present with a certain man. Let the proposition A B, therefore, be the first privative universal. Hence, if A is present with no B, neither will B be present with any A. For if it should be present with some A, as, for instance, with C, it will not be true that A is present with no B; since C is something of B. But, if A is present with every B, B will be present with some A. For if with no A, neither will A be present with any B; but it was supposed to be present with every B. Conversion also is in a similar manner produced, if the proposition is particular. For if A is present with some B, it is also necessary that B should be present with some A. For if it is present with no A, neither will A be present with any B. But if A is not present with some B, it is not necessary that B also should not be present with A. For instance, if B is animal, but A man;

man, indeed, is not present with every animal, (i.e. is not participated by every animal), but animal is present with every man.

Aristotle, Prior Analytics. Book I, Chapter 3

The like also will take place in necessary propositions; for a universal privative is universally converted. But each of affirmative propositions is converted according to a part. For if it is necessary that A should be present with no B, it is also necessary that B should be present with no A; for if it should happen to be present with some A, it would also happen that A would be present with some B. But if A is necessarily present with every, or with some B, B also will necessarily be present with some A; for if it is not necessarily present, neither will A be necessarily present with some B. That, however, which is privative in a part, is not converted, for the reason which has been before assigned. Conversion of Contingent Propositions But with respect to contingent propositions (since that which is contingent is multifariously predicated; for we say that the necessary, the not necessary, and the possible may happen) in all those that are affirmative, there will be a similar mode of conversion. For if A may happen to every, or to some B, B also may happen to some A; for if to no A, neither will A happen to any B. For this has been already demonstrated. In negative propositions, however, the like does not take place; but such things as are said to be contingent, either because they are necessarily not present, or because they are not necessarily present, are converted similarly with the former. For instance, if some one should say it may happen that a man may not be a horse, or that whiteness may be present with no garment. For of these assertions, the first is necessarily not present, and the second is not necessarily present. And the proposition is similarly converted. For if it happens to no man to be a horse, it also happens to no horse to be a man; and if whiteness happens to no garment, a garment also will not happen to any whiteness. For if a garment, necessarily happens to a certain whiteness, whiteness also will necessarily happen to a certain garment; since this was

demonstrated before. The like also will take place in a particular negative proposition. But such things as are said to be contingent, because they happen for the most part, and because they are naturally so adapted (after the manner according to which we define the contingent) will not subsist similarly in privative conversions; for a universal privative proposition is not converted, but that which is particular is converted. This, however, will be evident, when we speak of the contingent. But now let thus much be manifest in addition to what has been said, that to happen not to be present with anything, or with something, has an affirmative figure. For “it may happen”, is similarly arranged with “it is”; but “it is” always and entirely produces affirmation in those things to which it is attributed. For instance, “it is” not good, or “it is” not white, or, in short, “it is” not this thing. This, however, will be shown in what follows. But with respect to conversions these will subsist similarly with others.

Aristotle, Prior Analytics. Book I, Chapter 4

These things being determined, let us now show through what things, when, and how every syllogism is produced; and afterwards let us speak concerning demonstration. For it is requisite to speak of syllogism prior to demonstration, because syllogism is more universal. For a demonstration, indeed, is a certain (kind of) syllogism, but not every syllogism is a demonstration.

Therefore, when three terms so subsist with reference to each other, as that the last is in the whole of the middle, and the middle either is or is not in the whole of the first; then it is necessary that there should be a perfect syllogism of the extremes.

But I call the middle that which is itself in another, another also being in it; and which likewise becomes the middle in position. And I call the extremes that which is itself in another, and that in which another also is. For if A is predicated of every B, and B of every C, it is necessary that A should be predicated of every C, for it has been before shown how we predicate of every individual of a given multitude. In like manner also, if A is predicated of no B, but B is predicated of every C, neither will A be predicated of any C. But if the first follows every middle, and the middle is present with no extreme, there will not be a syllogism of the extremes; for nothing necessary will happen in consequence of the existence of these; since it will happen that the first will be present with every and with no extreme. Hence, neither a particular, nor a universal conclusion will be necessarily produced. But nothing necessary being collected, there will not through these be a syllogism. Let, however, the terms of being present with every

individual of a certain multitude be animal, man, horse; and let the terms of being present with no one be animal, man, stone.

Every man is an animal:

No horse is a man:

∴ Every horse is an animal.

Every man is an animal:

No stone is a man:

∴ No stone is an animal.

Neither then will there be a syllogism, since neither is the first term present with any middle, nor the middle with any extreme. Let the terms of being present be science, line, physician; but let the terms of not being present be science, line, unity.

No line is science:

No medicine is a line:

∴ Every medicine is science.

No line is science:

No unity is a line:

∴ No unity is science.

The terms, therefore, being universal it is manifest in this figure, when there will, and when there will not be a syllogism; and also that when there is a syllogism, it is necessary that the terms should subsist as we have said. For it is evident, that if they thus subsist there will be a syllogism. But if one of the terms is universal, and the other particular with reference to the other, when the universal is joined to the greater extreme, whether categoric or privative, but the particular term is categoric with respect to the less extreme, it is necessary that the syllogism should be perfect. But when the universal term is joined to the less extreme, or the terms subsist in some other way, it is impossible there should be a syllogism. I call, however, the greater extreme, that is which the middle is; and the less extreme, that which is under the middle. For let A be present with every B, but B with some C, If, therefore, to be predicated of every individual of a multitude is that which we asserted it to be from the first, A is necessarily present with some C. And if A is present with no B, but B is present with some C, it is necessary that A should not be present with some C. For the manner in which we speak of being predicated of no one of a multitude has been defined by us. Hence there will be a perfect syllogism. A similar conclusion also must be adopted, if the proposition B C is indefinite, being categoric; for there will be the same syllogism of the indefinite, and of that which is assumed in a part. But if to the less extreme, universal either categoric or privative, is added, there will not be a syllogism; whether an indefinite or a particular proposition affirms or denies. For instance, if A is present, or is not present, with some B; but B is present with some C. Let then the terms of being present be, good, habit, prudence; and let the terms of not being present be, good, habit, ignorance.

Some habit is/is not good:

All prudence is a habit:

∴ All prudence is good.

Some habit is/is not good:

All ignorance is a habit:

∴ No ignorance is good.

Again, if B is present with no C, but A is present with some B, or is not present, or is not present with every B; neither thus will there be a syllogism. Let the terms of being present with every individual be white, horse, swan; but the terms of being present with no one be white, horse, crow.

Some horse is/is not white:

No swan is a horse:

∴ Every swan is white.

Some horse is/is not white:

No crow is a horse:

∴ No crow is white.

The same terms also may be assumed if AB should be indefinite. Neither then will there be a syllogism, when universal either categoric or privative is added to the greater extreme; but

to the less extreme a privative according to a part of the indefinite, and in a part is assumed; for instance, if A is present with every B, but B is not present with some, or not with every C. For that with which the middle is not present, to this, to every, and to none, the first will be consequent. Thus, let the terms animal, man, white, be supposed; and afterwards, from among those white things of which man is not predicated, let swan and snow be assumed. Hence animal will be predicated of every individual of the one; but of no individual of the other; so that there will not be a syllogism.

Every man is an animal:
Something white (a swan) is not a man:
∴ Every swan is an animal.

Every man is an animal:
Something white (snow) is not a man:
∴ No snow is an animal.

Again, let A be present with no B, but let B not be present with some C; and let the terms be, inanimate, man, white. Afterwards, let white things be assumed, viz. swan and snow, of which man is not predicated. For inanimate is predicated of every individual of the one, but of no individual of the other.

No man is inanimate:

Something white (snow) is not a man:

∴ All snow is inanimate.

No man is inanimate:

Something white (a swan) is not a man:

∴ No swan is inanimate.

Farther still, this is indefinite, namely, that B is not present with some C; (for it is truly asserted that it is not present with some C, whether it is present with none, or whether it is not present with every C) but terms of this kind being assumed, so as to be present with none, a syllogism will not be produced; for this has been asserted before. It is evident, therefore, that when the terms thus subsist, there will not be a syllogism; since if there could, there would also be a syllogism in these terms. The like also may be demonstrated, if universal privative is posited. Neither will there by any means be a syllogism, if both intervals according to apart are predicated either categorically or privatively; or the one categorically, but the other privatively; or if the one is indefinite, but the other definite; or both are indefinite. But let the common terms of all be, animal, white, man, animal, white, stone.

Something white is/is not an animal:

Some man is/is not white:

∴ Every man is an animal.

Something white is/is not an animal:

Some stone is/is not white:

∴ No stone is an animal.

From what has been said, therefore, it is evident, that if there is a particular syllogism in this figure, it is necessary that the terms should subsist as we have said; that if the terms thus subsist a syllogism is necessarily produced; but by no means, if they subsist in a different manner. It is also manifest, that all the syllogisms in this figure are perfect; for all are perfected through those things which were assumed from the first. Likewise, that all problems are demonstrated through this figure; for in this a thing is shown to be present with every, with none, with some one, and not with some one. But I call a figure of this kind, the first figure.

Aristotle, Prior Analytics. Book I, Chapter 5

But when the same thing (i.e. the middle term) is partly present with every individual, and partly with none; or is present to every or to none of each extreme; I call a figure of this kind the second figure. And I call the middle term in it, that which is predicated of both extremes. But I denominate the extremes those things of which this middle is predicated, the greater extreme being that which is situated near the middle; but the less extreme being that which is situated farther from the middle. But the middle is posited external to the extremes, and is first in position. By no means, therefore, will there be a perfect syllogism in this figure. But there may be a syllogism both when the terms are universal, and when they are not universal. And if the terms, indeed, are universal, there will be a syllogism when the middle is partly present with every, and partly with none; to whichever extreme the privative is added. But a syllogism will by no means be produced in any other way. For let M be predicated of no N, but of every O. Since, therefore, a privative proposition is converted, N will be present with no M. But M was supposed to be present with every O; so that N will, be present with no O. For this was demonstrated before. Figure 1 Again, if M is present with every N, but with no O, neither will O be present with any N. For if M is present with no O, neither, will O be present with any M. But M was present with every N; and hence O will be present with no N. For again, the first figure is produced. But since a privative proposition is converted, neither will N be present with any O. Hence there will be the same syllogism. These things also may be demonstrated by a deduction to the impossible. It is evident, therefore, that a syllogism, though not a perfect syllogism, may be produced, when the terms thus subsist; for the necessary not only receives its completion from those things which were assumed from the first, but also from other things. But if M is

predicated of every N, and of every O, there will not be a syllogism. Figure 2 Let the terms then of being present with be essence, animal, man; but of not being present with be essence, animal, stone. And let the middle term be essence.

Every animal is an essence:

Every man is an essence:

∴ Every man is an animal. 2

Every animal is an essence:

Every stone is an essence:

∴ No stone is an animal.

Nor will there then be a syllogism, when M is neither predicated of any N, nor of any O. Let the terms of being present with be line, animal, man; but of not being present with, line, animal, stone.

No animal is a line:

No man is a line:

∴ Every man is an animal.

No animal is a line:

No stone is a line:

∴ No stone is an animal.

It is evident, therefore, that if there is a syllogism when the terms are universally posited, it is necessary that the terms should subsist in that manner which we mentioned in the beginning, for if they subsist in any other way, the necessity of concluding will not be produced. But if the middle is universally affected with respect to either extreme; when universal is added to the greater extreme, either categorically, or privatively; but to the lesser extreme, according to a part, and oppositely to universal; (but I say oppositely, if the universal is privative, but the particular affirmative; and if the universal is categoric, but the particular privative) it is necessary that a syllogism privative according to a part should be produced. For if M is present with no N, but is present with a certain O, it is necessary that N should not be present with a certain O. For since a privative proposition may be converted, N will be present with no M: but M was supposed to be present with a certain O: so that N will not be present with a certain O; for a syllogism is produced in the first figure. Again, if M is present with every N, but is not present with a certain O, it is necessary that N should not be present with a certain O. For if it is present with every O, but M is predicated of every N, it is also necessary that M should be present with every O. But it was supposed that it is not present with a certain O. And if M is present, indeed, with every N, but not with every O, there will be a syllogism, from which it will follow that N is not present with every O. But the demonstration is the same. If, however, M is predicated of every O, but not of every N, there will not be a syllogism. Let the terms of being present with be animal, essence, crow; but of not being present with, animal, white, crow.

Not every essence is an animal:

Every crow is an animal:

∴ Every crow is an essence.

Not every thing white is an animal:

Every crow is an animal:

∴ No crow is white.

Neither will there be a syllogism, when M is predicated of no O, but of a certain N. Let the terms of being present with be animal, essence, stone; but of not being present with animal, essence, science.

Some essence is an animal:

No stone is an animal:

∴ Every stone is essence.

Some essence is an animal:

No science is an animal:

∴ No science is essence.

When, therefore, particular is opposed to universal, we have shown when, and when there will not be a syllogism. But when the propositions are similar in figure, for instance, when both are privative, or affirmative, there will by no means be a syllogism. For in the first place, let both be privative, and let universal be added to the greater extreme; as, for instance, let M be present with no N, and let it not be present with a certain O: it may happen, therefore, that N may be

present with every and with no O. Let the terms of not being present with any be black, snow, animal.

No snow is black:

Some animal is not black:

∴ No animal is snow.

But the terms of being present with every cannot be assumed, if M is present, indeed, with a certain O, and with a certain O is not present. For if N is present with every O, but M is present with no N, M will be present with no O. But it was supposed to be present with a certain O. The terms, therefore, cannot thus be assumed. It may be demonstrated, however, from the indefinite. For since it was truly asserted that M is not present with a certain O, even if it is present with no O; but when it is present with no O, there was not a syllogism, it is evident that neither will there now be a syllogism. Again, let both the propositions be categorical, and let universal be similarly posited; as, for instance, let M be present with every N, and with a certain O. Hence, it may happen that N may be present with every, and with no O. Let the terms of not being present with any be white, swan, snow.

Every swan is white:

Some stone is white:

∴ No stone is a swan.

But the terms of not being present with every cannot be assumed, for the cause which we have before adduced.

Every swan is white:

Some bird is not white:

∴ Every bird is a swan.

Every swan is white:

Every bird is a swan:

∴ Every bird is white.

It may be demonstrated, however, from the indefinite. But if universal is added to the less extreme, and M is present with no O, and is not pre sent with a certain N, it may happen that N may be present with every and with no O. Let the terms of being present with be white, animal, crow; but of not being present with, white, stone, crow.

Some animal is not white:

No crow is white:

∴ Every crow is an animal.

Some stone is not white:

No crow is white:

∴ No crow is a stone.

But if the propositions are categoric, let the terms of not being present with be white, animal, snow; but of being present with be, white, animal, swan.

Some animal is white:

All snow is white:

∴ No snow is an animal.

Some animal is white:

Every swan is white:

∴ Every swan is an animal.

It is evident, therefore, that when the propositions are similar in figure, and the one is universal, but the other particular, there will by no means be a syllogism. Neither will there be a syllogism, if with some one of each term a thing is present, or is not present; or is partly present with someone, and partly not; or to every one of neither, or indefinitely. Let then the common terms of all be white, animal, man; white, animal, inanimate.

Some animal is/is not white:

Some man is/is not white:

∴ Every man is an animal.

Some animal is/is not white:

Something inanimate is/is not white:

∴ Nothing inanimate is an animal.

From what has been said, therefore, it is evident, that when the terms subsist with reference to each other, in the manner we have mentioned, a syllogism will necessarily be produced; and if a syllogism is produced, it is necessary that the terms should subsist in this manner. It is likewise evident, that all syllogisms which are in this figure are imperfect; for all of them are produced by certain things being assumed which either are necessarily inherent in the terms, or are admitted as hypotheses, as when we demonstrate through the impossible. It is also manifest, that an affirmative syllogism is not produced in this figure; but all the syllogisms are privative, both those that are universal, and those that arc particular.

Aristotle, Prior Analytics. Book I, Chapter 6

When, however, with the same thing, one thing is present with every individual, but another with none; or both with every, or both with none, I call a figure of this kind the third figure. But I call that the middle in it of which we predicate both; and I denominate extremes the things which are predicated; the greater extreme being that which is more remote from the middle, and the less, that which is nearer to the middle. But the middle is arranged external to the extremes, and is last in position. Neither, therefore, will a perfect syllogism be produced in this figure. But there may be a syllogism, the terms being joined to the middle, as well universally as not universally. The terms, therefore, being universally posited, when P and R are present with every S, there will be a syllogism, in which it will be necessarily inferred that P is necessarily present with a certain R. For since a categoric assertion is converted, S will be present with a certain R. Hence since P is present with every S, but S is present with a certain R, it is necessary that P should be present with a certain R. For a syllogism will be produced in the first figure. It is also possible to make the demonstration through the impossible, and through exposition. For if both are present with every S, if some S is assumed, as, for instance, N, both P and R will be present with this; so that P will be present with a certain R. And if R is present with every S, but P is present with no S, there will be a syllogism, in which it will be necessarily inferred that P is not present with a certain R. For there will be the same mode of demonstration, the proposition R S being converted. This may also be demonstrated through the impossible, as in the former syllogisms. But if R is present with no S, and P is present with every S, there will not be a syllogism. Let the terms of being present with be animal, horse, man; but of not being present with, animal, inanimate, man.

Every man is an animal:

No man is a horse:

∴ Every horse is an animal.

Every man is an animal:

No man is inanimate:

∴ Nothing inanimate is a horse.

Nor will there then be a syllogism, when both are predicated of no S. Let the terms of being present with be animal, horse, inanimate; but of not being present with be, man, horse, inanimate: the medium is inanimate.

Nothing inanimate is an animal:

Nothing inanimate is a horse:

∴ Every horse is an animal.

Nothing inanimate is a man:

Nothing inanimate is a horse:

∴ No horse is a man.

It is evident, therefore, in this figure also, when there will be, and when there will not be a syllogism, the terms being universally posited. For when both the terms arc categoric there will

be a syllogism, in which it will be inferred that extreme is present with a certain extreme. But when both the terms are privative there will not be a syllogism. When, however, the one is privative, and the other affirmative; if, indeed, the greater term is privative, but the other affirmative, there will be a syllogism in which it will be inferred that extreme is not present with a certain extreme. But if the contrary takes place there will not be a syllogism. If, however, one of the terms is universally, but the other particularly joined to the middle; both of them being categoric, it is necessary that a syllogism should be produced, whichever of the terms is universally assumed. For if R, indeed, is present with every S, but P with a certain S, it is necessary that P should be present with a certain R. For since an affirmative assertion is. converted, S will be present with a certain P. Hence, since R is present with every S, but S is present with a certain P, R also will be present with a certain P, so that P also will be present with a certain R. Again, if R is present with a certain S, but P is present with every S, it is necessary that P should be present with a certain R; for there is the same mode of demonstration. These things also may be demonstrated through the impossible, and through exposition, as in the former syllogisms. But if one of the terms is categoric, and the other privative, and the categoric is assumed universally; when the less term, indeed, is categoric, there will be a syllogism. For if R is present with every S, but P is not present with a certain S, it is necessary that P should not be present with a certain R. For if P is present with every R, and R is present with every S; P also will be present with every S; but it is not present. This also may be shown without a deduction to the impossible, if some S is assumed with which P is not present. But when the greater term is categoric, there will not be a syllogism. For instance, if P is present with every S, but R is not present with a certain S. Let the terms of being present with every be animated, man, animal.

Every animal is animated:

Some animal is not a man:

∴ Every man is animated.

But it is not possible to assume the terms of being present with none, if R is present with a certain S, and with a certain S is not present. For if P is present with every S, and R is present with a certain S, P also will be present with a certain R. But it was supposed to be present with no R. Here, therefore, the same thing must be assumed as in the former syllogisms. For the assertion that something is not present with a certain thing being indefinite, also that which is not present with any individual of a certain multitude, is truly said not to be present with a certain individual of that multitude; but not being present with any individual, there will not be a syllogism. It is evident, therefore, that there will not be a syllogism, when there is an assumption of not being present with some individual of a certain multitude. If, however, the privative term is universal, but the particular terra is categoric; when the greater term, indeed, is privative, but the less categoric, there will be a syllogism. For if P is present with no S, but R is present with a certain S; P will not be present with a certain R. For again, there will be the first figure, the proposition R S being converted. But when the less term is privative, there will not be a syllogism. Let the terms of being present with be animal, man, wild; but of not being present with be, animal, science, wild. The middle of both is wild. Something wild is an animal: Nothing wild is a man: Every man is an animal. Something wild is an animal: Nothing wild is science: No science is an animal. Nor will there then be a syllogism, when both terms are privative; and the one is universal, but the other particular. Let the terms of not being present with, when the

less term is universally joined to the middle, be animal, science, wild; but of being present with be, animal, man, wild.

Something wild is not an animal:

Nothing wild is science:

∴ No science is an animal.

Something wild is not an animal:

Nothing wild is a man:

∴ Every man is an animal.

But when the greater term is universal, but the less particular, let the terms of not being present with be crow, snow, white.

Nothing white is a crow:

Not every thing white is snow:

∴ No snow is a crow.

The terms, however, of being present wilh cannot be assumed, if R is present, indeed, with a certain S, and with a certain S is not present. For if P is present with every R, but R is present with a certain S, P also will be present with a certain S. It was supposed, however, not to be present with any S. But it is demonstrated from the indefinite. Neither will there by any means be a syllogism, if each extreme term is present, or is not present with a certain middle; or if one

is present, but the other is not present; or the one is present with some individual, but the other not with every indiridual; or indefinitely. But let the common terms of all be animal, man, white animal, inanimate, white.

Something white is/is not an animal:

Something white is/is not a man:

∴ Every man is an animal.

Something white is/is not an animal:

Something white is/is not inanimate:

∴ Nothing inanimate is an animal.

It is evident, therefore, in this figure also, when there will be, and when there will not be a syllogism; that when the terms so subsist as has been mentioned, a syllogism is necessarily produced; and that if there is a syllogism, it is necessary the terms should subsist in this manner. It is likewise evident, that all the syllogisms in this figure are imperfect; for all of them are perfected by the assumption of certain things; and also that a universal conclusion, neither privative nor affirmative, will not be collected in this figure.

Aristotle, Prior Analytics. Book I, Chapter 7

It is likewise manifest, that in all the figures, when a syllogism is not produced, both the terms being categoric or privative, and particular, nothing necessary, in short, will be inferred. But if the one is categoric, and the other privative, the privative being universally assumed, a syllogism will always be produced of the less extreme with the greater. For instance, if A is present with every B (figure 1), or with a certain B (figure 2), but B is present with no C. For the propositions being converted, it is necessary that C should not be present with a certain A. The like also will take place in other figures; for a syllogism will always be produced through conversion. It is likewise manifest, that when an indefinite assertion is assumed for a particular attributive, it will produce the same syllogism in all the figures. It is also evident, that all imperfect syllogisms are perfected through the first figure. For all of them receive their completion either demonstratively, or through the impossible; but in both ways the first figure will be produced. And if, indeed, they receive their completion demonstratively, the first figure will be produced, because thus all of them will be perfected through conversion; and conversion will produce the first figure. But if they are demonstrated through the impossible, still the first figure will be produced, because the false being posited, a syllogism will be formed in the first figure. Thus, for instance, in the last figure, if A and B are present with every C, it may be demonstrated that A is present with some B. For if A is present with no B, but B is present with every C, A will be present with no C: but it was supposed that A is present with every C. The like will also take place in other instances. It is also possible to reduce all syllogisms to universal syllogisms of the first figure. For it is evident, that through these the syllogisms in the second figure are perfected; except that all of them are not similarly perfected: but the universal arc

perfected, the privative assertion being converted; and each of those that are particular, through a deduction to the impossible. But particular syllogisms in the first figure, are perfected, indeed, through themselves. They may, however, be demonstrated in the second figure, by a deduction to the impossible. For instance, if A is present with every B, but B is present with a certain C, it may be shown that A will be present with a certain C. For if A is present with no C, but is present with every B: B will be present with no C; for we know this through the second figure. In a similar manner there will be a demonstration in a privative syllogism. For if A is present with no B, but B is present with a certain C; A will not be present with a certain C. For if A is present with every C, and with no B; B will be present with no C: but this was the middle figure. Hence, since all the syllogisms in the middle figure, are reduced to universal syllogisms in the first figure; but particular syllogisms in the first figure, are reduced to syllogisms in the middle figure; it is evident, that particular syllogisms in the first figure are reduced to universal syllogisms in the first figure. But the syllogisms in the third figure, the terms, indeed, being universal, are immediately perfected through those syllogisms. When, however, the terms are assumed in a part, they are perfected through particular syllogisms in the first figure. But these are reduced to those; so that particular syllogisms also in the third figure, are reduced to the same. It is evident, therefore, that all of them may be reduced to the universal syllogisms in the first figure. Hence we have shown how those syllogisms subsist which exhibit the being present with, or not being present with; as well by themselves, those which are from the same figure, as with reference to each other, those which are from different figures.

Aristotle, Prior Analytics. Book I, Chapter 8

Since, however, to exist, to exist from necessity, and to exist contingently, are different; (for manythings exist, indeed, yet not from necessity, but other things neither necessarily exist, nor, in short, exist, yet may happen to exist), it is evident, that there will be a different syllogism of each of these, and from terms not having a similitude of subsistence: but one syllogism will consist of necessary terms; another of such as have an existence; and another of such as are contingent in necessary syllogisms, therefore, the like will nearly take place, as in those which simply exist; for the terms being similarly posited in simply existing, and in existing or not existing from necessity, there will be, and there will not be a syllogism; except that they differ in the existing or not existing from necessity, being added to the terms. For a privative assertion is in a similar manner converted, and we similarly assign to be in the whole of a thing, and to be predicated of every. In other things, therefore, it is demonstrated after the same manner through conversion, that the conclusion is necessary, just as in existing or being present with a thing. But in the middle figure when the universal proposition is affirmative, and the particular proposition privative; and again in the third figure, when the universal is categoric, but the particular proposition privative, there will not similarly be demonstration; but it is necessary, something being proposed with which one of the extremes is not present, to make a syllogism of this; for of this there will be a necessary conclusion. If, however, a necessary conclusion is produced of the proposed term, a necessary conclusion of some individual of that term will also be produced; for the thing proposed is a part of it. But each of the syllogisms will be formed in its proper figure.

Aristotle, Prior Analytics. Book I, Chapter 9

It also sometimes happens that one of the propositions being necessary, a necessary syllogism will be produced, yet not of either proposition casually, but of that which contains the greater extreme. For instance, it A is assumed to be present or not present with B from necessity; but B is assumed to be alone present with C; for the propositions being thus assumed, A will be present or will not be present from, necessity with C. For since A is present or is not present with every li from necessity, but C is something belonging to B, it is evident, that C will be from necessity one of these. If, however, the proposition A B is not necessary, but B C is necessary, there will not be a necessary conclusion. For if there will be, it will happen that A is necessarily present with a certain B, as may be demonstrated as well in the first as in the third figure. But this is false; for it may happen that B may be a thing of that kind that A may not be present with anything belonging to it. Farther still, from the terms also it is evident, that there will not be a necessary conclusion; as, for instance, if A is motion, B animal, and C man. For man is necessarily an animal; but neither animal, nor man, is necessarily moved. The like will also take place if A B is privative; for there is the same demonstration. But in particular syllogisms, if the universal assertion, is necessary; the conclusion also will be necessary; but if the particular is necessary; the conclusion will not be necessary; whether the universal proposition is privative, or categoric. In the first place, therefore, let the universal be necessary, and let A be necessarily present with every B, but let B be only present with a certain C. It is necessary, therefore, that A should be necessarily present with a certain C; for C is under B, and A was present from necessity with every B. The like will also take place, if the syllogism is privative; for there will be the same demonstration. But if the particular is necessary; the conclusion will not be

necessary; for nothing A Bsurd will happen, as neither in universal syllogisms. A similar consequence also will be the result in particular privative syllogisms. Let the terms be motion, animal, white.

Every animal is moved:

It is necessary that something white should be an animal:

∴ Something white is moved.

But not necessarily because it is possible that it might not be moved.

No animal is moved:

It is necessary that something white should not be an animal:

∴ Something white is not moved.

But this is not necessary, because it may be moved.

Aristotle, Prior Analytics. Book I, Chapter 10

In the second figure, however, if the privative proposition is necessary, the conclusion also will be necessary; but if the categoric proposition is necessary, the conclusion will not be necessary. For, in the first place, let the privative proposition be necessary, and let it not be possible for A to be present with any B, but let it be present with C alone. Since, therefore, a privative proposition may be converted, neither can B be present with any A. But A is present with every C; so that B cannot be present with any C. For C is under A. In a similar manner also the conclusion will be necessary if negation is added to C. For if A cannot be present with any C, neither can C be present with any A. But A is present with every B; so that neither can C be present with any B. For again, the first figure will be produced. Hence neither can B be present with C; since it is in a similar manner converted. But if the categoric proposition is necessary, the conclusion will not be necessary. For let A be present with every B from necessity, and let it alone not be present with any C. The privative proposition, therefore, being converted, the first figure will be produced. But it was shown in the first figure, that when the major privative proposition is not necessary, neither will the conclusion be necessary. Hence neither in these will the conclusion be necessary. Again, if the conclusion is necessary, it will happen that C is necessarily not present with a certain A. For if B is necessarily present with no C, neither will C be necessarily present with any B. But B is necessarily present with a certain A, if A is present from necessity with every B. Hence it is necessary that G should not be present with a certain A. Nothing, however, hinders an A of that kind from being assumed, which may be present with every C. Farther still, it may also be shown from an exposition of the terms, that the conclusion is not simply necessary, but that it necessarily is, these being posited. For instance, let A be

animal, B man, C white, and let the propositions be similarly assumed. For it will happen that animal is present with nothing white. Neither, therefore, will man be present with anything white; yet not from necessity. For it may happen that man may be white, yet not so long as animal is present with nothing white. Hence these things being admitted, the conclusion will be necessary, but will not be simply necessary. The like will also take place in particular syllogisms. For when the privative proposition is universal and necessary, the conclusion also will be necessary. But when the categoric proposition is universal and necessary, but the privative is particular and not necessary; the conclusion will not be necessary. In the first place, therefore, let the privative proposition be universal and necessary, and let it not be possible for A to be present with any B, but let it be present with a certain C. Since, therefore a privative proposition, may be converted, B also cannot be present with any A. But A is present with a certain C. Hence, B is necessarily not present with a certain C. Again, let the categoric proposition be universal and necessary, and let the categorical (i.e. affirmation) be added to B. If, therefore, A is necessarily present with every B, but is not present with a certain C; it is evident, that B is not present with a certain C; but not from necessity. For there will be the same terms in order to the demonstration as were assumed in universal syllogisms. Neither will the conclusion be necessary, if the privative assertion is necessary when assumed in a part. For the demonstratioa may be made through the same terms.

Aristotle, Prior Analytics. Book I, Chapter 11

But in the last figure, when the terms are universally joined to the middle, and both the propositions are categoric, if either of them is necessary, the conclusion also will be necessary. If, however, one of the propositions is privative, but the other categoric; when the privative is necessary, the conclusion also will be necessary. But when the categoric proposition is necessary, the conclusion will not be necessary. For, in the first place, let both the propositions be necessary, and let A and B be present with every C; and let the proposition AC be necessary. Since, therefore, B is present with every C, C also will be present with a certain B, because a universal is converted into a particular proposition. Hence if A is necessarily present with every C, and Cis present with a certain B, A also is necessarily present with a certain B; for B is under (i.e. is something belonging to) C. The first figure, therefore, will again be produced. In a similar manner it may be demonstrated if the proposition B C is necessary; for C is converted with a certain A. Hence if B is necessarily present with every C, but C is present with a certain A, B also will be necessarily present with a certain A, Again, let the proposition A C be privative, but the proposition B C affirmative; and let the privative proposition be necessary. Since, therefore, an affirmative proposition may be converted, C will be present with a certain B, but A will necessarily be present with no C, and also will necessarily not be present with a certain B; for B is under C. But if the categoric proposition is necessary, the conclusion will not be necessary. For let B G be a categoric and necessary proposition; but let the proposition A C be privative and not necessary. Since, therefore, an affirmative proposition may be converted, C also will necessarily be present with a certain B; so that if A is present with no C, but C is present with a certain B, A also will not be present with a certain B; yet not from necessity. For it was demonstrated in the

first figure that a privative proposition not being necessary, neither will the conclusion be necessary. Farther still, this will also be evident from the terms. For let A be good; B animal; and C horse. It may, therefore, happen that good may be present with no horse; but animal is necessarily present with every horse. It is not, however, necessary that a certain animal should not be good, since it may happen that every animal is good.

No horse is good:
It is necessary that every horse should be an animal:
∴ Some animal is not good.

Or, if this is not possible, another term must be posited, as to wake, or to sleep; for every animal is the recipient of these.

No horse wakes:
It is necessary that every horse should be an animal:
∴ Some animal does not wake.

No horse sleeps:
It is necessary that every horse should be an animal:
∴ Some animal does not sleep.

If, therefore, the terms are universally joined to the middle, it has been shown when the conclusion will be necessary. But if one of the terms is universally predicated of the middle and

the other partially, both, indeed, being categoric; when the universal proposition becomes necessary, the conclusion also will be necessary. The demonstration, however, is the same as before; for a partial categoric proposition may also be converted. If, therefore, it is necessary that B should be present with every C, but A is under C, it is necessary that B should be present with a certain A. For this proposition may be converted. The like also will take place, if the proposition AC is necessary and universal; for B is under C. But if the partial proposition is necessary, the conclusion will not be necessary. For let the proposition B C be partial and necessary, and let A be present with every C, yet not from necessity. The proposition, therefore, B C being converted, the first figure will be produced: and the universal proposition is not necessary; but the partial is necessary. When, however, the propositions thus subsist, the conclusion is not necessary. Hence neither in the terms now posited will the conclusion be necessary.

Every C is A:
It is necessary that some C should be B:
∴ Some B is A.

Every C is A:
It is necessary that some B should be C:
∴ Some B is A.

Farther still, this also is evident from the terms. For let A be wakefulness; B be biped; and C be animal. It is necessary, therefore, that B should be present with a certain C, but A may

happen to be present with every C, and A is not necessarily present with B. For it is not necessary that a certain biped should sleep or wake.

Every animal wakes:
It is necessary that some animal should be biped:
∴ Some biped wakes.

In a similar manner also, the demonstration may be framed through the same terms, if the proposition A should be partial and necessary.

It is necessary that some animal should be a biped:
Every animal wakes:
∴ Something that wakes is a biped.

Every animal wakes:
It is necessary that some biped should be an animal:
∴ Some biped wakes.

But if one of the terms is categoric, and the other privative, when the universal proposition is privative and necessary, the conclusion also will be necessary. For if A is contingent to no C, but B is present with a certain C, it is necessary that A should not be present with a certain B. But when the affirmative proposition is necessary, whether it be universal or partial, or privative partial, the conclusion will not be necessary. For we may say that other

things are the same, as we have mentioned before. Let the terms, however, when the universal categoric proposition is necessary, be wakefulness, animal, man; and the middle be man.

Some man does not wake:

It is necessary that every man should be an animal:

∴ Some animal docs not wake.

But when the partial categoric proposition is necessary, let the terms be wakefulness, animal, white. For it is necessary that animal should be present with something white: but it happens that wakefulness is not present with anything white; and it is not necessary that wakefulness should not be present with a certain animal.

Nothing white wakes:

It is necessary that something white should be an animal:

∴ Some animal does not wake.

But when the privative partial proposition is necessary; let the terms be biped, motion, animal; and the middle be animal.

It is necessary that some animal should not be a biped:

Every animal is moved:

∴ Something which is moved is not a biped.

Aristotle, Prior Analytics. Book I, Chapter 12

It is evident, therefore, that there is not a syllogism of the being present with, unless both propositions signify the being present with; but that a necessary conclusion may be collected, though the other proposition alone is necessary. But in both, the syllogisms being either affirmative or privative, it is necessary that one of the propositions should be similar to the conclusion. My meaning is with respect to the similar; that if it is concluded a thing is present with, one of the propositions also signifies the being present with. But if it is concluded that a thing is necessarily present, one of the propositions is also necessary. Hence it is evident, that there will not be a conclusion either necessary, or that a thing is present with, unless one of the propositions is assumed necessary, or signifying the being present with. Concerning the necessary, therefore, how it is produced, and what difference it has with respect to that which is present with, nearly what is sufficient has been said.

Aristotle, Prior Analytics. Book I, Chapter 13

In the next place let us speak A Bout the contingent, when, and how, and through what propositions there will be a syllogism. But I call to be contingent, and the contingent, that which not being necessary, if it is admitted to exist, there will on this account be nothing impossible. For the necessary is said to be contingent homonymously. But that this is the contingent is evident from opposite negations and affirmations. For these assertions, it does not happen to exist, it is impossible to exist, and it is necessary not to exist, are either the same, or follow each other. Hence the opposites to these also, it happens to exist, it is not impossible to exist, and it is not necessary not to exist, will either be the same, or will follow each other; for of every thing there is either affirmation or negation. That which is contingent, therefore; will be not necessary; and that which is not necessary will be contingent. It happens, however, that all propositions of the contingent, may be converted into each other. I say may be converted not the affirmative into the negative, but such as have an affirmative figure according to opposition. For instance, this proposition, it happens to exist, may be converted into this it happens not to exist. This proposition also, it happens to every may be converted into this it happens to none, or not to every: and this, it happens to a certain thing, into this, it does not happen to every. After the same manner also conversion is effected in other propositions. For since that which is contingent is not necessary; and that which is not necessary may not exist; it is evident, that if it happens, A is present with B, it may also hap pen that it may not be present: and if it happens to be present with every B, it may also happen not to be present with every B. There is likewise a similar reasoning in partial affirmations; for there is the same demonstration. Such like propositions, however, are categoric, and not privative. For the verb “to be contingent” is arranged similarly to

the verb “to be”, as we have before observed. These things being determined, we again say, that to be contingent is predicated in two ways; one, indeed, as that which takes place for the most part, and falls short of the necessary as, for instance, for a man to become hoary, or to be increased, or waste away, or, in short, that which is naturally adapted to exist; for this has not a continued necessity, because man does not always exist; but man existing, this is either from necessity, or for the most part. But in another way that is contingent which is indefinite, and which can subsist thus, and not thus; such as for an animal to walk, or while it is walking, for an earthquake to take place, or, in short, that which is casually produced. For nothing of this kind is more naturally adapted to subsist in this than in a contrary way. Each, therefore, of things contingent is converted according to opposite propositions; yet not after the same manner. But that which is naturally adapted to subsist, is converted into that which does not exist from necessity; for thus it may happen that a man may, not become hoary. And that which is indefinite, is converted into that which cannot more subsist in this than in that way. Science, however, and demonstrative syllogism, are not of those things which are indefinite, because the middle is inordinate; but they are of those things which are naturally adapted to exist. And arguments and speculations are nearly conversant with things which are thus contingent; but of the indefinite contingent, a syllogism may, indeed, be formed, but it is. not usually investigated. These things, however, will be more fully determined in what follows. Let us now show when, and how, and what will be a syllogism from contingent propositions. But the assertion it happens that this thing is present with thatj may be assumed in a twofold respect. For it either signifies, that with which this thing is, present, or that with which this thing may be present. Thus this assertion, A is contingent to that of which there is B, signifies one of these things, either that of which B is predicated, or that of which it may be predicated. But the assertions that A is

contingent to that of which tliere is B, and that A may be present with every B, do not differ from each other. It is evident, therefore, that A may be said to be present with every B in two ways. Hence, in the first place, let us show if B is contingent to that of which there is C, and if A is contingent to that of which there is B, what, and what kind of syllogism there will be; for thus both propositions are assumed according to the contingent. But when A is contingent to that with which B is present,, one proposition is of that which exists, but the other, of that which is contingent. Hence we must begin from similars in figure, as we began elsewhere.

Aristotle, Prior Analytics. Book I, Chapter 14

When, therefore, A is contingent to every B, and B to every C, there will be a perfect syllogism, in which it may be collected that A is contingent to every C. But this is evident from definition; for we thus assume the being contingent to every. In like manner also, if A is contingent to no B, but B is contingent to every C, there will be a syllogism in which it may be collected that A is contingent to no C. For to assert that A is contingent to nothing to which B is contingent, is to leave no one of the contingents which are under B. But when A is contingent to every B, but B is contingent to no C, from the assumed propositions no syllogism will be produced; but the proposition B C being converted, according to the being contingent, the same syllogism will be produced as was produced before. For since it happens that B is present with no C, it may also happen to be present with every C; for this was shown before. Hence, since B may happen to be present with every C, and A with every B, again, the same syllogism will be produced. The like will also take place, if negation together with the being contingent are added to both the propositions. I say, for instance, if A is contingent to no B, and B to no C; for through the assumed propositions, no syllogism will be produced. But the propositions B Chig converted, there will again be the same syllogism, as was formed before. It is evident, therefore, that when negation is added to the less extreme, or to both the propositions, either a syllogism will not be produced, or it will be produced indeed, but will not be a perfect syllogism; for the necessity of consecution is effected from conversion. But if one of the propositions is universal, and the other is assumed in a part; the universal being posited at the greater extreme, there will be a perfect syllogism. For if A is contingent to every B, but B is contingent to a certain C, A also will be contingent to a certain C. This, however, is evident from the definition of being contingent to

every individual of a certain multitude. Again, if A is contingent to no B, but B may happen to be present with a certain C, it is necessary that A should happen not to be present with a certain C. But the demonstration is the same. If, however, the proposition which is in a part is assumed privative, but the proposition which is universal is assumed affirmative, and retains the same position; as, for instance, if A may happen to be present with every B, but B may happen not to be present with a certain C; — if this be the case, from the assumed propositions, indeed, an evident syllogism will not be produced. But the particular proposition being converted, and it being admitted, that B may happen to be present with a certain C, there will be the same conclusion as before, as in the former syllogisms. If, however, the major proposition is assumed as particular, but the minor is universal, whether both are posited affirmative, or privative, or dissimilar in figure; or whether both are indefinite, or particular, there will by no means be a syllogism. For nothing hinders B from being more widely extended than A, and from not being equally predicated. But let that by which B is more widely extended than A, be assumed to be C; for to C it will happen that A is present neither to every, nor to none, nor to a certain one, nor not to a certain one; since contingent propositions may be converted, and B may happen to be present with more things than A. Farther still, this also is evident from the terms; for the propositions thus subsisting, the first will be contingent to the last and to none, and will necessarily be present with every individual. But let the common terms of all be these; of being present with, from necessity, animal, white, man; but of not happening to be present with, animal, white, garment.

It happens that something white is/is not animal:

It happens that every/no/some/not every man is white:

∴ It is necessary that every man should be an animal.

It happens that something white is/is not an animal:

It happens that every/no/some/not every garment is white:

∴ Is necessary that no garment should be an animal.

It is evident, therefore, that when the terms subsist after this manner, no syllogism will be produced. For every syllogism is either of that which exists, or of that which exists from necessity, or of that which is contingent. But that this syllogism is neither of that which exists, nor of that which necessarily exists is evident; for the affirmative conclusion is subverted by the privative, and the privative by the affirmative. It remains, therefore, that it must be of that which is contingent. This, however, is impossible; for it has been shown, that when the terms thus subsist, the first is necessarily inherent in all the last, and will happen to be present with no individual. Hence there will not be a syllogism of the contingent; for that which is necessary is not contingent. It is evident, therefore, that when the terms are universally assumed in contingent propositions, there will always be a syllogism in the first figure, both when they are categoric, and when they are privative; except that when they are categoric, there will be a perfect syllogism; but when they are privative, an imperfect syllogism. It is necessary, however, to assume the contingent, not in necessary propositions, but according to the definition mentioned in the preceding chapter. But sometimes a thing of this kind is latent.

Aristotle, Prior Analytics. Book I, Chapter 15

If, however, one of the propositions is assumed to exist, but the other to be contingent when that which contains the greater extreme, signifies to be contingent, all the syllogisms will be perfect, and will be of the contingent, assumed according to the above-mentioned definition. But when the proposition in which the less extreme is contained, signifies to be contingent, all the syllogisms will be imperfect; and the privative syllogisms will not be of the contingent assumed according to that definition, but of that which is necessarily present with no one, or not with every individual, for if it is necessarily present with no one, or not with every individual, we say that it happens to be present with no one, or not with every individual. For let A be contingent to every B, and let B be supposed to be present with every C. Because, therefore, C is under B, but A is contingent to every B, it is evident that A also is contingent to every C. A perfect syllogism, therefore, will be produced. In like manner also, if the proposition A B is privative, but the proposition B C affirmative, and if the proposition A B is assumed to be contingent, and the proposition B C to be present with; there will be a perfect syllogism, in which it may be collected that it will happen that A is present with no C. It is evident, therefore, that when the being present with is posited to the less extreme, perfect syllogisms will be produced. But that when it subsists in a contrary mode there will also be syllogisms, may be shown by a deduction to the impossible; though at the same time it will be evident that the syllogisms will be imperfect; for the demonstration will not be from the assumed propositions. In the first place, however, it must be shown, that if when A exists, it is necessary B should exist; and that if A is possible, B will necessarily be possible. For things thus subsisting, let A be possible, but B impossible. If, therefore, the possible, when it is possible to be should be

produced; the impossible, because it is impossible, will not be produced. But if at the same time A is possible, and B impossible, it will happen that A may be produced without B; and if it is produced, that it exists. For that which is generated, when it is generated, is. It is necessary, however to consider the possible and impossible, not only in that which may be generated, but also in that which may be verified, and exists in energy, and in whatever other ways the possible is said to be possible; for the reasoning is similar in all of them. Besides, when we say A is B, this ought not to be understood, as if A being one certain thing, B will be; for nothing necessarily follows from there being one thing, but from there being two things at least: for instance, when propositions subsist in syllogism, after the manner we have mentioned. For if C is predicated of D, but D of F, C also will necessarily be predicated of F. And if each proposition is possible, the conclusion also will be possible. Just, therefore, as if any one should place A as the propositions, but B the conclusion; it will not only happen that when A is necessary, at the same time also B is necessary; but, likewise, when the former is possible, the latter also will be possible. But this being demonstrated, it is evident, that when the hypothesis is false and not impossible, that also which happens on account of the hypothesis will be false and not impossible. For instance, if A is false indeed, yet not impossible, but when A is, B is; — in this case, B also will be also indeed, yet not impossible. For since it has been shown that if A is, B also is; when A is possible, B also will be possible. But it was supposed that A is possible; B, therefore, will also be possible. For if it is impossible, the same thing will be at the same time possible and impossible. These things being determined, let A be present with every B, and let B be contingent to every C. It is necessary, therefore, that A should happen to be present with every C. For let it not happen to be present; and let B be admitted to be present with every C. This is false, indeed, but not impossible. If, therefore, A is not contingent to C, but B is present with every C; A will not be

contingent to every B; for a syllogism will be produced in the third figure. But it was supposed that A is present with every B. It is necessary, therefore, that A should be contingent to every C. For that which is false being supposed, and not that which is impossible, that which thence happens is impossible.

Every B is A:

It happens that every C is B:

∴ It happens that every C is A.

It is necessary that some C should not be A:

Every C is B:

∴ Not every B is A.

A deduction also to the impossible may be made in the first figure, if B is supposed to be present with C, For if B is present with every C, but A is contingent to every B, A also will be contingent to every C. It was supposed, however, that it could not be present with every C.

Every B is A:

It happens that every C is B:

∴ It happens that every C is A.

It happens that every B is A:

Every C is B:

∴ It happens that every C is A.

It is necessary, however to assume the being present with every individual, not defined by time, as now, or at this time, but simply; for we also produce syllogisms through propositions of this kind. For when a proposition is assumed according to the now, or the present time, there will not be a syllogism; since perhaps nothing hinders but that man sometime or other may be present with every thing that is moved; viz. if nothing else is moved. But that which is moved may be contingent to every horse; and man is contingent to no horse. Farther still, let the first term be animal; the middle that which is moved; and the last term, man. The propositions, therefore, will subsist similarly; but the conclusion will be necessary, and not contingent. For man is necessarily an animal.

Whatever is moved is a man:

It happens that every horse is moved:

∴ It is necessary that no horse should be a man.

Whatever is moved is an animal:

It happens that every man is moved:

∴ It is necessary that every man should be an animal.

It is evident, therefore, that the universal should be assumed simply, and not defined by time. Again, let the proposition A B be universal privative, and let A be assumed to be present with no B, but let it happen that B is present with every C. These things, therefore, being admitted, it is necessary that A should happen to be present with no C. For let it not so happen; and let B be supposed to be present with C as before. Hence it is necessary that A should be present with some B. For a syllogism will be formed in the third figure. This, however, is impossible. Hence A will be contingent to no C; for the false, and not the impossible being supposed, that which is impossible will happen.

No B is A:

It happens that every C is B:

∴ It happens that no C is A.

It is necessary that some C should be A:

Every C is B:

∴ Some B is A.

This syllogism, therefore, is not of that contingent which is according to the definition above given, but of that which is necessarily present with no individual. For this is a contradiction of the given hypothesis; because it was supposed that A is necessarily present with some C. But the syllogism which is through the impossible is of an opposite contradiction. Again, it is also evident from the terms, that the conclusion is not contingent. For let A be a crow; B, that which is intelligent; and C, man. A, therefore, is present with no B; for nothing

intelligent is a crow. But B is contingent to every C; for it happens to every man to be intelligent. A, however, is necessarily present with no C. The conclusion, therefore is not contingent.

Nothing intelligent is a crow:
It happens that every man is intelligent:
∴ It is necessary that no man should be a crow.

The conclusion, however, is not always necessary. For let A be that which is moved; B be science; and C be man. A, therefore, will be present with no B; but B is contingent to every C; and the conclusion will not be necessary. For it is not necessary that no man should be moved, but it also is not necessary, that a certain man should be moved. It is evident, therefore, that the conclusion is of that which is necessarily present with no individual. Hence the terms must be assumed in a better manner. But if the privative is joined to the less extreme, and signifies to be contingent; from the assumed propositions, indeed, there will be no syllogism; but the contingent proposition being converted there will be a syllogism, as in the former instances. For let A be present with every B, but let B be contingent to no C. The terms, therefore, thus subsisting, nothing necessary will be collected. But if the proposition B C is converted, and B is assumed to be contingent to every C, a syllogism will be produced as before. For the terms will have a similar position. The like will also take place when both the intervals are privative, if the interval A B signifies the not being present with, but B C signifies the being contingent to no individual. For through the assumed propositions nothing necessary will be collected; but the contingent proposition being converted, there will be a syllogism. For let it be assumed that A is present with no B, and let B be contingent to no C. Through these, therefore, nothing necessary will be

collected. But if it is assumed that B is contingent to every C, which is true, and the proposition A B subsists similarly; again there will be the same syllogism. If, however, it is assumed that B is not present with C, but not that it happens not to be present with it; there will by no means be a syllogism, neither when the proposition A B is privative, nor when it is affirmative. But let the common terms of being present with from necessity be, white, animal, snow; and of not being contingent, white, animal, pitch.

It happens that every/no animal is white:
No snow is an animal:
∴ It is necessary that all snow should be white.

It happens that every/no animal is white:
No pitch is an animal;
∴ It is necessary that no pitch should be white.

It is evident, therefore, that when the terms are universal, and one of the propositions is assumed to exist, (i.e. is assumed pure), but the other contingent; when the proposition which contains the less extreme is assumed to be contingent, a syllogism will always be produced; except that it will sometimes be produced from the propositions themselves, and sometimes from the proposition being converted. When, however, each of these takes place, and from what cause we have already shown. But if one of the intervals is assumed to be universal, and the other partial; when, indeed, a universal contingent is joined to the greater extreme, whether it be affirmative or negative; but the partial interval is affirmative and pure, there will be a perfect

syllogism, just as when the terms are universal. The demonstration, however, is the same as before. But when the interval in which the greater extreme is contained, is pure and not contingent; but the other is partial and contingent; whether both the propositions are posited affirmative or negative; or whether the one is affirmative, but the other negative, there will entirely be an imperfect syllogism. Some, however, will be confirmed through the impossible; but others, through a conversion of the contingent proposition, as in the former syllogisms. But there will be a syllogism through conversion, and when the universal proposition being joined to the greater extreme signifies the being present with, or the not being present with; but the partial proposition being privative assumes the contingent: as, for instance, if A is present indeed, or is not present with every B, but B happens not to be present with a certain C; for the proposition B C being converted according to the being contingent, a syllogism will be produced. But when the particular proposition assumes the not being present with, there will not be a syllogism. Let the terms of being present with be white, animal, snow; but of not being present with be white, animal, pitch. For the demonstration is to be assumed through the indefinite.

It happens that every/no animal is white:
Some snow is not an animal:
∴ It is necessary thatall snow should be white.

It happens that every/no animal is white: Some pitch is not an animal: It is necessary that no pitch should be white. But if universal is joined to the less extreme, and particular to the greater; whether privative, or affirmative, contingent, or pure, there will by no means be a syllogism. Nor will there then be a syllogism, when the propositions are posited in a part, or

indefinite; whether they assume the being contingent, or the being present with, or whether the one is contingent, but the other present with. But the demonstration is the same as in the former syllogisms. Let, however, the common terms of being present with from necessity be animal, white, man; but of not being contingent be animal, white, garment.

It happens that something/not everything white is an animal:

Every/No/Some/Not every man is white:

∴ It is necessary that every man should be an animal.

It happens that something/not everything white is an animal:

Every/No/Some/Not every garment is white:

∴ It is necessary that no garment should be an animal.

Something/Not everything white is an animal:

It happens that every/no/some/not every man is white:

∴ It is necessary that every man should be an animal.

Something/Not everything white is an animal:

It happens that every/no/some/not every garment is white:

∴ It is necessary that no garment should be an animal.

It is evident, therefore, that if the major proposition is posited universal, a syllogism will always be produced: but if the minor, that nothing can ever thence be collected.

Aristotle, Prior Analytics. Book I, Chapter 16

When, however, one proposition signifies the being present with, or not being present with, from necessity, but the other signifies the being contingent, there will be a syllogism, the terms subsisting after the same manner; and it will be perfect, when the necessary is joined to the less extreme. But the conclusion, when the terms are categoric, will be of the contingent, and not of that which exists, whether the terms are universally, or not universally posited. But if one interval is affirmative, and the other privative; when the affirmative, indeed, is necessary, the conclusion will in like manner signify the being contingent, and not the not existing, or being present with. And when the privative is necessary, the conclusion will be of the happening not to be present with, and of the not being present with, whether the terms are universal, or not universal. The being contingent also in the conclusion is to be assumed after the same manner as in the former syllogisms. But there will not be a syllogism, in which the not being present with will be necessarily inferred; for it is one thing to be present with not necessarily, and another not to be present with necessarily. It is evident, therefore, that when the terms are affirmative, a necessary conclusion will not be produced. For let A be necessarily present with every B, but let B be contingent to every C. There will, therefore, be an imperfect syllogism, in which it may be collected that A happens to be present with every C. But that it is imperfect is evident from demonstration; for this may be demonstrated after the same manner as in the former syllogisms. Again, let A be contingent to every B, but let B be necessarily present with every C. There will, therefore, be a syllogism, in which it may be collected that A happens to be present with every C, but not that it is simply present with every C. The syllogism also will be perfect and not imperfect for it will be immediately completed through the propositions assumed from the first.

But if the propositions are not similar in figure in the first place, let the privative proposition be necessary, and let A necessarily be contingent to no B, but let B be contingent to every C. It is necessary, therefore, that A should be present with no C. For let it be supposed to be present either with every individual, or with a certain individual but it was supposed to be contingent to no B. Since, therefore, a privative proposition may be converted, neither will B be contingent to any A. But A was posited to be present with every or with some C. Hence, B will happen to be present with no, or not with every C. It was supposed, however, from the first to be present with every C.

It is necessary that no B should be A:
It happens that every C is B:
∴ No C is A.

It is necssary that no A should be B:
Some C is A:
∴ It is necessary that some C should not be B.

But it is evident, that there will also be a syllogism of the not happening to be present with, since there is a syllogism of the not being present with. Again, let the affirmative proposition be necessary, and let it happen that A is present with no B, but that B is necessarily present with every C. The syllogism, therefore, will be perfect, yet not of the not being present with, but of the happening not to be present with for the proposition was thus assumed from the greater extreme and there cannot be a deduction to the impossible. For if A is supposed to be

present with a certain C, and it is admitted that A happens to be present with no B, nothing impossible will thence happen. But if privation is joined to the less extreme, when it signifies to be contingent, there will be a syllogism through conversion, as in the former syllogisms. When, however, it signifies not to be contingent, there will not be a syllogism. Nor will there be a syllogism when both the intervals are privative, unless the contingent is joined to the less extreme. But let the terms be the same; viz. of being present with, white, animal, snow but of not being present with, white, animal, pitch.

It happens that every/no animal is white:
It is necessary that no snow should be an animal:
∴ It is necessary that all snow should be white.

It happens that every/no animal is white:
It is necessary that no pitch should be an animal:
∴ It is necessary that no pitch should be white.

The like also will take place in partial syllogisms. For when the privative interval is necessary, the conclusion will be of the not being present with. Thus, if A happens to be present with no B, but B happens to be present with a certain C, it is necessary that A should not be present with a certain C. For if it is present with every C, but is contingent to no B, neither will B happen to be present with any A. Hence, if A is present with every C, B will be contingent to no C. But it was supposed to be contingent to a certain C. But when the partial affirmative in a privative syllogism, as, for instance, B C, is necessary or the universal affirming in a categoric

syllogism, as, for instance, A B, there will not be a syllogism of the being present with. But the demonstration is the same as in the former syllogisms. If, however, universal is joined to the less extreme, either affirmative, or privative and contingent; but the partial necessary is joined to the greater extreme, there will not be a syllogism. But let the terms of being present with from necessity be, animal, white, man and not being contingent, animal, white, garment.

It is necessary that something white should be/not be an animal:
It happens that every/no man is white:
∴ It is necessary that every man should be an animal.

It is necessary that something white should be/not be an animal:
It happens that every/no garment is white:
∴ It is necessary that no garment should be an animal.

But when the universal is necessary, and the partial contingent the universal being privative, let the terms of being present with be animal, white, crow but of not being present with, animal, white, pitch.

It happens that something white is/is not an animal:
It is necessary that no crow should be white:
∴ It is necessary that every crow should be an animal.

It happens that something white is/is not an animal:

It is necessary that no pitch should be white:

∴ It is necessary that no pitch should be an animal.

But when the universal affirms, let the terms of being present with be, animal, white, swan but of not being contingent, animal, white, snow.

It happens that something white is/is not an animal:

It is necessary that every swan should be white:

∴ It is necessary that every swan should be an animal.

It happens that something white is/is not an animal:

It is necessary that all snow should be white:

∴ It is neccssary that no snow should be an animal.

Nor will there then be a syllogism, when the propositions are assumed indefinite, or both, according to a part. But let the common terms of being present with be animal, white, man and of not being present with, animal, white, inanimate. For animal is necessarily present with, and does not happen to be present with, something white, and whiteness also is necessarily present with, and does not happen to be present with, something inanimate. And the like takes place in the contingent. Hence these terms are useful to all the modes.

It happens that something white is/is not an animal:

It is necessary that some man should be/not be white:

∴ It is necessary that every man should be an animal.

It happens that something white is/is not an animal:

It is necessary that something inanimate should be/not be white:

∴ It is necessary that nothing inanimate should be an animal.

It is necessary that something white should be/not be an animal:

It happens that some man is/is not white:

∴ It is necessary that every man should be an animal.

It is necessary that something white should be/not be an animal:

It happens that every thing inanimate ss white:

∴ It is necessary that nothing inanimate should be an aniinal.

From what has been said, therefore, it is evident, that when the terms subsist similarly in that which is present with, and in necessary propositions, a syllogism will, and will not be formed. There is this exception, however, that if the privative proposition is posited according to existing, or being present with, the syllogism will be of the happening not to be present with. But if the privative proposition is necessary, the syllogism will be of the happening not to be present with and of the not being present with. It ia also evident, that all the syllogisms are imperfect, and that they are perfected through the above-mentioned figures.

Aristotle, Prior Analytics. Book I, Chapter 17

In the second figure, however, when both the propositions are assumed contingent, there will be no syllogism, neither when they are categoric, nor when they are privative, neither when they are universal, nor when they are partial. But when one proposition signifies the being present with, and the other the being contingent if the affirmative signifies the being present with; there will never be a syllogism; but if the privative universal signifies the being present with, there will always be a syllogism. The like will also take place when one of the propopositions is assumed necessary, but the other contingent. It is necessary, however, in these syllogisms so to assume the contingent in the conclusions, as it was assumed in the former syllogisms. In the first place, therefore, it must be shown that a contingent privative is not convertible. Thus, if A is contingent to no B, it is not necessary that B also should be contingent to no A. For let this be posited, and let B happen to be present with no A. Since, therefore, contingent affirmations, as well those that are contrary, as those that are opposite, are converted into negations, but B happens to be present with no A, it is evident, that it may also happen that B may be present with every A. This, however, is false. For it does not follow that if this thing may happen to all of that, it is necessary that that thing should happen to this; so that a contingent privative cannot be converted. Again, nothing hinders, but that A may be contingent to no B, and yet B may not be necessarily present with a certain A. Thus, for instance, whiteness may happen not to be present with every man, because it may also happen to be present. But it is not true to say that man happens to be present with nothing white for he is necessarily not present with manythings that are white. And the necessary is not the contingent. Neither can its convertibility be shown from the impossible as if any one should think, since it is false, that B is contingent to

no A, that it is true that it is not contingent to none (for these are affirmation and negation). But if this is true, B is necessarily present with a certain A so that A also is necessarily present with a certain B but this is impossible. For it does not follow that if B is not contingent to no A, it is necessarily present with a certain A. For not to be contingent to no individual is predicated in a twofold respect; in one, indeed, if a thing is necessarily present with something and in another, if it necessarily is not present with something. For that which necessarily is not present with a certain A, cannot be truly said to happen not to be present with every A as neither can that which is necessarily present with a certain thing, be truly said to happen to be present with every thing. If, therefore, any one thinks that because C does not happen to be present with every D, it necessarily is not present with a certain D, he thinks falsely; for it may happen to be present with every D. But because a thing is necessarily present with certain things, on this account we say that it is not contingent to every individual. Hence the being present with a certain thing from necessity, and the not being present with a certaia thing from necessity, are opposed to the happening to be present with every individual. There is also a similar opposition to the being contingent to no individual. It is evident, therefore, that when the contingent, and the not contingent, are assumed in the manner we have defined in the beginning, not only the being present with a certain thing from necessity, but also the not being present with a certain thing from necessity, ought to be assumed. But this being assumed nothing impossible will happen so that a syllogism will not be produced. From what has been said, therefore, it is evident, that a contingent privative cannot be converted. But this being demonstrated, let it be admitted that A is contingent to no B, but is contingent to every C. There will not, therefore, be a syllogism through conversion for it has been shown that a proposition of this kind is not convertible. Neither will there be a syllogism, through a deduction to the impossible. For B being posited to be

contingently present with every C, nothing false will happen for it may happen that A may be present with every, and with no C.

It happens that no B is A:
It happens that every C is A:
∴ It happens that no C is B.

It happens that no B is A:
It is necessary that every/some C should be B:
∴ It happens that every or some C is not A.

In short, if there is a syllogism, it is evident it will be of that which is contingent (because neither of the propositions is assumed of that which exists, or is present with) and this, either affirmative, or privative. It is not possible, however, in either way. For if it is posited affirmative, it may be shown through the terms, that it will not happen to be present with. But if it is posited negative, it may be sho^vn that the conclusion is not contingent, but necessary. For let A be white B, man and C, horse. A, therefore, that is whiteness, may happen to be present with every individual'of the one, and with no individual of the other. But it neither happens to B to be present, nor yet not to be present with C. That it does not happen to be present indeed, is evident for no horse is a man. But neither does it happen not to be present for it is necessary that no horse should be a man. But the necessary is not contingent. A syllogism, therefore, will not be produced.

It happens that no man is white:

It happens that every horse is white:

∴ It is necessary that no horse should be a man.

This may also be similarly shown, if the privative should be placed in an inverse order, or if both the propositions are assumed affirmative, or both privative; for there will be a demonstration through the same terms.

It happens that every/no man is white:

It happens that every/no horse is white:

∴ It is necessary that no horse should be a man.

And when one proposition is universal, but the other partial or when both are partial, or indefinite; or in any other way in which it may be possible to change the propositions; for the demonstration will always be through the same terms.

It happens that every/no man is white:

It happens that some horse is/is not white:

∴ It is necessary that no horse should be a man.

It happens that some man is/is not white:

It happens that every/no horse is white:

∴ It is necessary that no horse should be a man.

It happens that some man is/is not white:

It happens that some horse is/is not white:

∴ It is necessary that no horse should be a man.

Aristotle, Prior Analytics. Book I, Chapter 18

But if one proposition signifies the existing or being present with, and the other, the being contingent; when the categoric proposition signifies the being present with, but the privative, the being contingent, there will never be a syllogism, neither when the terms are assumed universally, nor when they are assumed partially. The demonstration, however, is the same, and through the same terms. But when the affirmative signifies the being contingent, but the privative the being present with, there will be a syllogism. For let it be assumed that A is present with no B, but is contingent to every C. The privative interval, therefore, being converted, B will be present with no A. But A was contingent to every C. A syllogism, therefore, will be produced, in the first figure, in which it may be collected that B is contingent to no C. In like manner also, a syllogism will be formed, if the privative is added to C. But if both the propositions are privative and the one signifies the not being present with, but the other the happening not to be present with through the assumed propositions, indeed, nothing necessary will happen. If the contingent proposition, however, is converted, there will be a syllogism, in which it may be collected, that B happens to be present with no C, as in the former syllogisms for again, there will be the first figure. But if both the propositions are posited categoric, there will not be a syllogism. Let the terms of being present with be health, animal, man but of not being present with, health, horse, man.

It happens that every animal is well:

Every man is well:

∴ It is necessary that every man should be an animal.

It happens that every horse is well:

Every man is well:

∴ It is necessary that no man should be a horse.

Every animal is well:

It happens that every man is well:

∴ It is necessary that every man should be an animal.

Every horse is well:

It happens that every man is well:

∴ It is necessary that no man shoulld be a horse.

The like will also take place in partial syllogisms. For when the affirmative proposition is pure, whethcr it be assumed universally, or partially, there will be no syllogism. But this may be demonstrated similarly, and through the same terms as before.

It happens that no animal is well:

Some man is well:

∴ It is necessary that every man shouldl be an animal.

Every animal is well:

It happens that some man is not well:

∴ It is necessary that every man shouldl be an animal.

It happens that no horse is well:

Some man is well:

∴ It is necessary that no man should be a horse.

Every horse is well:

It happens that some man is not well:

∴ It is necessary that no man should be a horse.

But when the privative is pure, there will be a syllogism through conversion, as in the former syllogisms. Again, if both intervals are assumed privative, and that which signifies the not being present with is universal from these propositions, indeed, there will not be the necessary. But when the contingent is converted, as before, there will be a syllogism. If, however, the privative interval is, indeed, pure, but is assumed in part, there will not be a syllogism, whether the other proposition be affirmative or privative. Nor will there then be a syllogism, when both the propositions are assumed indefinite, whether affirming, or denying, or partial. But the demonstration is the same, and through the same terms.

Some animal is/is not well:

It happens that some man is/is not well:

∴ It is necessary that every man should be an animal.

Some horse is/is not well:

It happens that some man is/is not well:

∴ It is necessary that no man should be a horse.

It happens that some animal is/is not well:

Some man is/is not well:

∴ It is necessary that every man should be an animal.

It happens that some horse is/is not well:

Some man is/is not well:

∴ It is necessary that no man should be a horse.

Aristotle, Prior Analytics. Book I, Chapter 19

If, however, one of the propositions signifies the being present with, or not being present with from necessity, but the other signifies the being contingent; when the privative is necessary, there will be a syllogism, in which not only the happening not to be present with will be collected, but also the not being present. But when the affirmative is necessary, there will not be a syllogism. For let it be posited that A is necessarily present with no B, and that it is contingent to every C. The privative proposition, therefore, being converted, neither will B be present with any A. But A was contingent to every C. Again, therefore, a syllogism will be produced in the first figure, in which it may be collected that B happens to be present with no C. At the same time also it is evident, that neither is B present with any C. For let it be admitted that it is. If, therefore, A is contingent to no B, but B is present with a certain C, A will not be contingent to a certain C. But it was supposed to be contingent to every C. It will likewise be demonstrated after the same manner, if the privative is joined to C. Again, let the categoric interval be necessary, but the other, privative and contingent and let A be contingent to no B, but necessarily present with every C. The terms, therefore, thus subsisting, there will be no syllogism for it may happen that B is necessarily not present with C. For let A be white, B man, C a swan. Whiteness, therefore, is necessarily present with a swan, but is contingent to no man and man is necessarily present with no swan. That there will not, therefore, be a syllogism of the contingent is evident for that which is from necessity is not contingent.

It happens that no man is white:

It is necessary that every swan should be white:

∴ It is necessary that no swan should be a man.

Neither will there be a syllogism of the necessary. For the necessary is either inferred from both the necessary propositions, or from the privative. Farther still, these things being admitted, it may be possible that B may be present with C. For nothing hinders but that C may be under B and that A may be contingent to every B, and may be necessarily present with C as if C is awake; B animal and A, motion. For motion is necessarily present with every thing that is awake but is contingent to every animal and every thing which is awake is an animal.

It happens that no animal is moved:

It is necessary that every thing awake should be moved:

∴ Every thing awake is an animal.

It is evident, therefore, that neither is the not being present with collected since the terms thus subsisting, the being present with is necessary nor are the opposite affirmations collected. Hence there will be no syllogism. There will also be a similar demonstration if the affirmative proposition is posited vice versa. But if the propositions are similar in figure, being privative indeed, a syllogism will always be formed, when the contingent proposition is converted, as in the former syllogisms. For let it be assumed that A is necessarily not present with B, and that it happens not to be present with G. The propositions, therefore, being converted, B will be present with no A, and A will be present with every C. The first figure, therefore, will be produced. The

like will also take place if the privative is joined to C. But if both the propositions are posited categoric there will not be a syllogism. For it is evident, that there will not be a syllogism of the not being present with, or of the not being present with from necessity, because a privative proposition is not assumed, neither in the being present with, nor in the being present with from necessity. But neither will there be a syllogism of the not happening to be present with. For the terms being thus posited from necessity, B will not be present with C as, for instance, if A is posited white; B, a swan and C, man. Neither will there be a syllogism of the opposite affirmations because it has been shown that B is necessarily not present with C. A syllogism, therefore, in short, will not be produced.

It is necessary that every swan should be white:
It happens that every man is white:
∴ It is necessary that no man should be a swan.

The like will also take place in partial syllogisms. For when the privative is universal and necessary, there will always be a syllogism of the contingent, and of the not being present with. But the demonstration will be through conversion. When, however, the affirmative is necessary there will never be a syllogism. But this may be demonstrated in the same manner as in the universal modes, and through the same terms.

It happens that no man is white:
It is necessary that some swan should be white:
∴ It is necessary that no swan should be a man.

It happens that no animal is moved:

It is necessary that something awake should be moved:

∴ It is necessary that every thing awake should be an animal.

It is necessary that every swan should be white:

It happens that some man is not white:

∴ It is necessary that no man should be a swan.

Nor will there then be a syllogism, when both the propositions are assumed affirmative for of this there is the same demonstration as before.

It is necessary that every swan should be white:

It happens that some man is a swan:

∴ It is necessary that no man should be a swan.

It happens that every man is white:

It is necessary that some swan should be white:

∴ It is necessary that no swan should be a man.

It is necessary that some swan should be white:

It happens that every man is white:

∴ It is necessary that no man should be a swan.

It happens that some man is white:

It is necessary that every swan should be white:

∴ It is necessary that no swan should be a man.

But when both the propositions are assumed privative, and that which signifies the not being present with, is universal and necessary; through the propositions, indeed, there will not be the necessary but the contingent proposition being converted, there will be a syllogism, as before. If, however, both the propositions are posited indefinite, or in a part, there will not be a syllogism. But the demonstration is the same, and through the same terms.

It happens that some animal is/is not white:

It is necessary that some man should not be/not be white:

∴ It is necessary that every man should be an animal.

It happens that some animal is/is not white:

It is necessary that something inanimate should be/not be white:

∴ It is necessary that nothing inanimate should be an animal.

It is necessary that some animal should be/not be white:

It happens that some man is/is not white:

∴ It is necessary that every man should be an animal.

It is necessary that some animal should be/not be white:

It happens that something inanimate is/is not white:

∴ It is necessary that nothing inanimate should be an animal.

It is evident, therefore, from what has been said, that when the privative position is posited universal and necessary, a syllogism will always be produced, not only of the happening not to be present with, but also of the not being present with. But there will never be a syllogism when the affirmative is posited necessary. It is also evident, that when the terms subsist after the same manner, is necessary and pure propositions, there will be, and there will not be, a syllogism. And it is likewise manifest, that all these syllogisms are imperfect, and that they are perfected through the above-mentioned figures.

Aristotle, Prior Analytics. Book I, Chapter 20

But in the last figure, when both the propositions are contingent, and when one only is contingent, there will be a syllogism. When, therefore, the propositions signify the being contingent, the conclusion also will be contingent and when the one signifies the being contingent, but the other the being present with. But when one of the propositions is posited necessary if, indeed, it is affirmative, there will not be a conclusion, neither necessary nor pure. But if it is privative, there will be a syllogism of the not being present with, as before. In these, however, the contingent must be similarly assumed in the conclusions. In the first place, therefore, let both the propositions be contingent, and let A and B happen to be present with every C. Since then an affirmative proposition may be partially converted, but B is contingent to every C, G also will be contingent to a certain B. Hence, if A is contingent to every C, but C is contingent to a certain B, it is also necessary that A should be contingent to a certain B. For the first figure will be produced. And if A happens to be present with no C, but B is present with every C, it is also necessary that A should happen not to be present with a certain B for again, there will be the first figure through conversion. But if both the propositions are posited privative from the assumed propositions, indeed, there will not be the necessary (i.e. a necessity of concluding). The propositions, however, being converted, there will be a syllogism, as before. For if A and B . happen not to be present with C, if the happening not to be present with is changed, there will again be the first figure through conversion. But if one of the terms is universal, and the other partial; when the terms subsist in the same manner, as in that which is present with, there will be, and there will not be a syllogism. For let A be contingent to every C, but let B be present with a certain C again, there will be the first figure, the partial proposition

being converted. For if A is contingent to every C, and C is contingent to a certain B, A also will be contingent to a certain B. The like will also take place, if the universal is joined to the proposition B C. And this in a similar manner will be effected, if the proposition A C is privative, but B C affirmative for again there will be the first figure through conversion. But if both are posited privative, the one universal, and the other partial through the things assumed, indeed, there will not be a syllogism but there will be when they are converted, as before. When, however, both are assumed indefinite, or partial, there will not be a syllogism. For it is necessary that A should be present with every, and with no B. Let the terms then of being present with be animal, man, white but of not being present with, horse, man, white; and let the middle be white.

It happens that something white is/is not an animal:

It happens that something white is/is not a man:

∴ It is necessary that every man should be an animal.

It happens that something white is/is not a horse:

It happens that something white is/is not a man:

∴ It is necessary that no man should be a horse.

Aristotle, Prior Analytics. Book I, Chapter 21

If, however, one of the propositions signifies the being present with, but the other the being contingent; the conclusion will be, that a thing is contingent, and not that it is present with. But there will be a syllogism, the terms subsisting in the same manner as before. For in the first place, let them be categoric and let A be present with every C, but let B happen to be present with every C. The proposition, therefore, B C being converted, there will be the first figure; and the conclusion will be, that A happens to be present with a certain B. For when one of the propositions in the first figure signifies the being contingent, the conclusion also is contingent. In a similar manner, if the proposition B C signifies the being present with, but the proposition AC the being contingent and if AC is privative, but B C categoric, and either of them is pure for in both ways the conclusion will be contingent, since again, the first figure will be produced. But it has been shown, that when one of the propositions in that figure, signifies the being contingent, the conclusion also will be contingent. If, however, a contingent privative is joined to the less extreme, or both the intervals are assumed privative through the things posited, indeed, there will not be a syllogism but when they are converted, there will be a syllogism, as before. But if one of the propositions is universal, and the other partial both, indeed, being categoric or the universal being privative, but the partial affirmative there will be the same mode of syllogisms; for all of them will be completed through the first figure. Hence it is evident, that there will be a syllogism in which the contingent, and not the beiug present with, will be collected. But if the affirmative proposition is universal, and the privative partial, the demonstration will be through the impossible. For let B be present with every C, and let A happen not to be present with a certain C. It is necessary, therefore, that A should happen not to be present with a certain B. For if A is

necessarily present with every B, but B is posited to be present with every C, A is necessarily present with every C. For this was demonstrated before. But it was supposed that A happens not to be present with a certain C. But when both the propositions are assumed indefinite, or partial, there will not be a syllogism. But the demonstration is the same as that which was in universals, and through the same terms.

Something white is/is not an animal:

It happens that something white is/is not a man:

∴ It is necessary that every man should be an animal.

Something white is/is not a horse:

It happens that something white is/is not a man:

∴ It is necessary that no man should be a horse.

It happens that something white is/is not an animal:

Something white is/is not a man.

∴ It is necessary that every man should be an animal.

It happens that some animal is/is not a horse:

Something white is/is not a man:

∴ It is necessary that no man should be a horse.

Aristotle, Prior Analytics. Book I, Chapter 22

But if one of the propositions is necessary, and the other contingent, the terms, indeed, being categoric, there will always be a syllogism of the contingent. When, however, one interval is categoric, but the other privative; if, indeed, the affirmative is necessary, there will be a syllogism of the happening not to be present with. But if the interval is privative, there will be a syllogism of the happening not to be present with, and of the not being present with. There will not, however, be a syllogism of the not being present with from necessity, as neither in the other figures. In the first place, therefore, let the terms be categoric, and let A be present from necessity with every C, but let B happen to be present with every C. Because, therefore, A is necessarily present with every C, but C is contingent to a certain B, A also will be contingent to, and will not be necessarily present with a certain B for such will be the conclusion in the first figure. A similar demonstration will take place, if the proposition B C is posited necessary, and the proposition AC contingent.

It happens that every man is white:

It is necessary that every man should be an animal:

∴ It happens that some animal iss white.

It happens that every man is white:

It is necessary that some animal should be a man:

∴ It happens that some animal is white.

Again, let the one proposition be categoric, but the other privative and let the categoric be necessary. Let also A happen to be present with no C, but let B necessarily be present with every C. Again, therefore, there will be the first figure and the conclusion will be contingent, but not pure for the privative proposition signifies the being contingent. It is evident, therefore, that the conclusion will be contingent for when the propositions thus subsisted in the first figure, the conclusion was contingent. But if the privative proposition should be necessary, the conclusion will be, that the not being present with a certain thing is contingent, and that it is not present with it. For let it be supposed that A is necessarily not present with C, but is contingent to every B. The affirmative proposition, therefore, B C being converted, there will be the first figure, and the privative proposition will be necessary. But when the propositions thus subsist, it will follow that A happens not to be present with a certain C, and that it is not present with it. Hence it is also necessary that A should not be present with a certain B. When, however, the privative is joined to the less extreme, if that is contingent there will be a syllogism, the proposition being converted, as in the former syllogisms. But if it is necessary, there will not be a syllogism, because it is necessary to be present with, every individual, and to happen to be present with no individual. Let the terms then of being present with every individual be, sleep, a sleeping horse, and man, but of being present with no individual sleep, a waking horse, and man.

It happens that every man sleeps:
It is necessary that no man should be a sleeping horse:
∴ It is necessary that every sleeping horse should sleep.

It happens that every man sleeps:

It is necessary that no man should be a waking horse:

∴ It is necessary that no waking horse should sleep.

The like will also take place, if one of the terms is joined to the middle universally, but the other partially. For both being categoric, there will be a syllogism of the being contingent, and not of the being present with; and also, when the one interval is assumed privative, but the other affimiative and the affirmative is necessary. But when the privative is necessary, the conclusion also will be of the not being present with. For there will be the same mode of demonstration, whether the terms are universal, or not universal since it is necessary that the syllogisms should be completed through the first figure. Hence it is necessary that there should be the same conclusion in these, as in those. But when the privative universally assumed is joined to the less extreme, if, indeed, it is contingent there will be a syllogism through conversion. If, however, it is necessary, there will not be a syllogism. But this may be demonstrated after the same manner as in universals, and through the same terms.

It happens that some man sleeps:

It is necessary that no man should be a sleeping horse:

∴ It is necessary that every sleeping horse should sleep.

It happens that, some man sleeps:

It is necessary that no man should be a waking horse:

∴ It is necessary that no waking horse should be asleep.

In this figure, therefore, it is also evident, when, and how there will be a syllogism; and when there will be a syllogism of the contingent, and when of the being present with. It is likewise evident, that all these syllogisms are imperfect, and that they are perfected through the first figure.

Aristotle, Prior Analytics. Book I, Chapter 23

That the syllogisms, therefore, in these figures, are perfected through the universal syllogisms in the first figure, and are reduced to these, is evident from what has been said. But, in short, that every syllogism thus subsists, will now be evident, when it shall be demonstrated that every syllogism is produced through some one of these figures. It is necessary, therefore, that every demonstration, and every syllogism, should show either that something is present with, or is not present with a certain thing and this, either universally, or partially and farther still, either ostensively, or from hypothesis. But a part of that which is from hypothesis is that which is produced through the impossible. In the first place, therefore, let us speak concerning ostensive syllogisms for these being exhibited, it will also be evident in syllogisms leading to the impossible, and, in short, in syllogisms which are from hypothesis. If, therefore, it were requisite to syllogize A of B, either as present with, or as not present with, it would be necessary to assume something of something. If then A, indeed, were assumed of B, that will be assumed which was proposed from the first to be proved. But if A were assumed of C, but C of nothing, nor anything else of it, nor anything else of A, there will be no syllogism for from the assuming one thing of one, nothing necessary will happen. Another proposition, therefore, must be assumed. If then A is assumed of something else, or something else of A, or something else of C, nothing hinders but there may be a syllogism. It will not, however, pertain to B, from the things which are assumed. Nor will there be a syllogism of A with reference to B, when C is predicated of something else, and that of something else, and this something else of another, if no one of these is conjoined with B. For, in short, we have said, that there will never be a syllogism of one thing of another, unless a certain medium is assumed, which in a certain respect is referred to

each extreme by predications. For a syllogism is simply from propositions but the syllogism which pertains to this particular thing, is from propositions pertaining to this thing. And the syllogism of this thing referred to that, is from propositions, in which this is referred to that. But it is impossible to assume a proposition pertaining to B, if nothing is either predicated, or denied of it; or again, to assume a proposition of A pertaining to B, if nothing common is assumed, but certain peculiar things are predicated or denied of each. Hence a certain middle of both is to be assumed, which may conjoin the predications, if there will be a syllogism of this thing with reference to that. If, therefore, it is necessary to assume something which is common to both and this happens in a threefold respect for we either predicate A of C, and C of B, or C of both, or both of C; but these are the before-mentioned figures — if this be the case, it is evident, that every syllogism is necessarily produced through some one of these figures. For there is the same reasoning if A is conjoined with B through many media; since there will be the same figure in many media, as in one medium. That all ostensive syllogisms, therefore, are perfected through the above-mentioned figures is evident. That those also which lead to the impossible are perfected through the same will be manifest through these things. For all those syllogisms which conclude through the impossible, collect the false but they show from hypothesis, that which was proposed from the first, when anything impossible happens, contradiction being admitted such, for instance, as that the diameter of a square is incommensurable with the side, because a common measure being given, the odd would be equal to the even. They syllogistically collect, therefore, that the odd would become equal to the even, but they show from hypothesis, that the diameter is incommensurable, since something false happens to take place, from contradiction. For this it is to syllogize through the impossible, viz. to show something impossible, through the hypothesis admitted from the first. Hence, since by those reasonings which lead to the

impossible, the false is proved in an ostensive syllogism; but that which was proposed from the first, is shown from hypothesis and since we have before observed, that ostensive syllogisms are perfected through these figures; — it is evident, that the syllogisms also which are produced through the impossible, will be formed through the same figures. And after the same manner also, all others will be produced which reason from hypothesis for in all of them a syllogism will be formed of that which is assumed; but that which was proposed from the first, is proved through confession, or some other hypothesis. But if this is true, it is necessary that every demonstration, and every syllogism, should be produced through the three before-mentioned figures. And this being demonstrated, it is evident, that every syllogism is perfected through the first figure, and is reduced in this figure to universal syllogisms.

Aristotle, Prior Analytics. Book I, Chapter 24

Farther still, in all syllogisms it is necessary that there should be a certain term which is categoric, and a certain term which is universal for without the universal, either there will not be a syllogism, or it will not pertain to the thing proposed, or that will become the subject of petition, which was investigated from the first. For let it be proposed to be demonstrated that the pleasure arising from harmony is a worthy pleasure. If, therefore, any one should require it to be granted to him that pleasure is worthy, not adding all pleasure, there will not be a syllogism. But if he contends that a certain pleasure is good if, indeed, it is different from that arising from harmony, it will be foreign from the thing proposed and if it is this very pleasure he assumes that which he investigated from the first. This, however, will become more manifest in diagrams. For instance, let it be proposed to demonstrate that the angles at the base of an isosceles triangle are equal. Let the lines A, B, be drawn to the centre of a circle. If, therefore, he assumes that the angle A C is equal to the angle B D, not, in short, requiring it to be granted that the angles of. semicircles are equal, and again assumes that the angle C is equal to the angle D, not assuming that the angle of one section in a circle, is equal to another angle of the same section and if, besides, he assumes, that equal parts being taken away from equal whole angles,the remaining angles E F are equal — he will demand that which was proposed to be investigated from the first, unless he assumes, that if equal things are taken away from equal things, equal things will remain. It is evident, therefore, that in all syllogisms, it is necessary there should be the universal. It is likewise manifest, that the universal is shown from all universal terms but that the partial is shown as well in this, as in that way. Hence, if the conclusion is universal, it is also necessary that the terms should be universal. But if the terms are universal, it may happen that

the conclasion is not universal. It is also evident, that in every syllogism, either both propositions, or one proposition, is necessarily similar to the conclusion. But I say similar, not only because it is affirmative or privative but also because it is necessary, or pure, or contingent. It is also necessary to consider other modes of predication. It is likewise simply manifest, when there will be, and when there will not be a syllogism when it is possible, and when perfect; and that when there is a syllogism, it is necessary it should have terms according to some one of the before-mentioned modes.

Aristotle, Prior Analytics. Book I, Chapter 25

It is also manifest, that every demonstration will be through three terms, and not through more than three; unless the same conclusion should be produced through different arguments; as, for instance, E through A B, and D through C; or through A B, A C, and B C. For nothing prevents there being many media of the same conclusions. But these being many there is not one syllogism, but there are many syllogisms. Or again, demonstration is not through three, but through more than three terms, when each of the propositions A, B, is assumed through syllogism; as, for instance, A through D E, and again, B through F G. Or when the one is by induction, but the other by syllogism. But thus also there are many syllogisms for there are many conclusions; as, for instance, A, B and C. And if there are not many syllogisms, but one syllogism, thus, indeed, through many syllogisms, the same conclusion may be produced. In order, however, that C may be proved through A B, it is impossible there should be more than three terms. For let the conclusion be E, which is collected from A B C D. It is necessary, therefore, that some one of these should be assumed with reference to something else as a whole, but another as a part. For this was demonstrated before, that when there is a syllogism, it is necessary that some of the terms should thus subsist. Let A, therefore, thus subsist with reference to B. Hence, from these there is a certain conclusion; which, therefore, is either E, or C, or D, or some other different from these. And if, indeed, E is concluded, the syllogism will be from A B alone. But if C and D so subsist, that the one is as a whole, and the other as a part; something also will bet collected from them; and this will either be E, or A, or B, or something else different from these. And if E is collected, or A, or B, either there will be many syllogisms, or in the manner in which we have said it is possible, it will happen that the same thing will be

concluded through many terms. But if anything else different from these is collected, there will be many syllogisms unconnected with each other. If however, C does not so subsist with reference to D, as to produce a syllogism, they will be assumed in vain, unless they were assumed for the sake of induction, or concealment, or something else of this kind. But if from A B not E but some other conclusion is produced: and from C D, either one of these is collected, or something different from, these, many syllogisms will be produced, yet not syllogisms of the subject, or thing proposed. For it was supposed that the syllogism is of E. If, however, no conclusion is produced from C D, it will happen that they are assumed in vain, and the syllogism will not be of that which was investigated from the first. Hence it is evident, that every demonstration and every simple syllogism, will subsist through three terms alone. But this being apparent, it is also evident that, a syllogism consists of two propositions, and not of more than two. For three terms are two propositions, unless something is assumed, as we observed in the beginning, to the perfection of the syllogism. It is evident, therefore, that in the syllogistic discourse, in which the propositions through which the principal conclusion is produced, are not even (for it is necessary that some of the former conclusions should be propositions) — it is evident in this case that this discourse, either collects nothing, or interrogates more than is necessary to the thesis. The syllogisms, therefore, being assumed according to the principal propositions, every syllogism will consist, indeed, of propositions which are even, but from terms which are odd. For the terms are more than the propositions by one. But the conclusions will be the half part of the propositions. When, however, the conclusion is through pro-syllogisms, or through many continued media (as A B through C, and through D) the multitude of terms, indeed, will, in a similar manner, surpass the propositions by one for the term will be inserted, either externally, or in the middle; but in both ways, it will happen that the

intervals are fewer than the terms by one. But the propositions are equal to the intervals. These, however, will not always be even, and those odd; but alternately, when the propositions are even, the terms will be odd; and when the terms are even, the propositions will be odd. For together with the term, one proposition is added, wherever the term is added. Hence, since the propositions were even, but the terms odd, it is necessary there should be a commutation, the same addition being made. The conclusions, however, will no longer have the same order, neither with respect to the terms, nor with respect to the propositions. For one term being added, conclusions are added, less by one than the pre-subsisting terms; because to the last term alone a conclusion is not made, but is made to all the rest. Thus, for instance, if D is added to A B C, two conclusions are immediately added, the one to A, and the other to B. The like also takes place in others. If the term also is inserted in the middle place, there will be the same reasoning; for to one term alone, a syllogism will not be produced. Hence the conclusions will be far more than the terms, and the propositions.

Aristotle, Prior Analytics. Book I, Chapter 26

Since, however, we have the particulars with which syllogisms are conversant, the quality of the problems in each figure, and in how many ways they are demonstrated; it is also evident to us, what kind of problem is difficult, and what kind is easy to be proved. For that which is concluded in many figures, and through many cases is more easy; but that which is concluded in fewer figures, and through fewer cases, is more difficult to be proved. A universal affirmative problem therefore is proved through the first figure alone, and through this in one way only. But a privative problem, is proved through the first, and through the middle figure; and through the first, indeed, in one way only; but through the middle in two ways. A partial affirmative problem, however, is proved through the first, and through the last figure; in one way, indeed, through the first, but in a triple way through the last figure. And a partial privative problem, is proved in all the figures; except that in the first figure, indeed, it is proved in one way; but in the middle in a twofold; and in the last in a threefold way. It is evident, therefore, that it is most difficult to construct a universal categoric problem, but that it may be most easily subverted; and, in short, that universal may be more easily subverted than partial problems; because universal problems are subverted whether a thing is present with nothing, or is not present with a certain thing; of which the one, viz. the not being present with a certain thing is proved in all tlie figures; and the other, viz. the being present with nothing, is proved in two figures. There is the same mode also in privative problems. For whether a thing is present with every, or with a certain individual, that which was proposed from the first is subverted. But in partial problems, the confutation takes place in one way, viz. if a thing is proved to be present with every, or with no individual. Partial problems, however, are more easily constructed; for they are constructed in more figures, and

through more modes than universal problems. In short, it is not proper to be ignorant that universal are mutually confuted through partial problems, and these through universal problems. Universal, however, cannot be constructed through partial problems, but the latter may through the former. At the same time also it is evident, that it is easier to subvert than to construct a problem. In what manncr, therefore, every syllogism is produced, and through how may terms and propositions, and how they subsist with reference to each other; farther still, what kind of problem may be proved in each figure, what kind in many, and what kind in fewer modes is manifest from what has been said.

Aristotle, Prior Analytics. Book I, Chapter 27

Let us now show how we may possess an abundance of syllogisms for a proposed question, and through what way we may assume principles about every problem. For perhaps it is not only necessary to survey the generation of syllogisms, but also to possess the power of forming them. Of all beings, therefore, some are of such a kind as not to be in reality universally predicated of anything else; such, for instance, as Cleon, and Callias, that which is particular, and that which is sensible; but other things are predicated of these; for each of these is man and animal. But other beings are, indeed, predicated of other things, yet other things are not previously predicated of these. And other beings, are themselves predicated of other things, and other things are predicated of them; as, for instance, man is predicated of Callias, and animal of man. That some things, therefore, are naturally adapted to be predicated of nothing is evident; for of sensibles, each nearly is a thing of such a kind, as not to be predicated of anything except from accident. For we sometimes say, that that white thing is Socrates, and that he who approaches is Callias. But that in a progression upward, we must sometime or other stop, we shall again show. At present, however, let this be admitted. Of these things, therefore, it is not possible to demonstrate another predicate, except according to opinion; but these may be predicated of other things. Nor can particulars be predicated of other things, but others things of these. But it is evident, that those which are intermediate, may in both ways, fall under demonstration; for they may be predicated of other things, and other things of them. And nearly arguments and speculations are conversant with these. But it is necessary thus to assume the propositions pertaining to each thing, in the first place, admitting as an hypothesis that which is the subject of discussion, together with definitions, and such things as are the peculiarities of that thing; and, in

the next place, such things as are consequent to the thing, and such as cannot not be present with it. But those things with which the thing cannot be present, are not to be assumed, because a privative assertion may be converted. A division also must be made of things consequent, that we may understand what things belong to the question, what a thing is, what are as peculiarities, and what are predicated as accidents; and of these, what are predicated according to opinion, and what according to truth. For the greater abundance any one possesses of these, the more expeditiously will he obtain the conclusion; and the more true they are, the more will he demonstrate. It is necessary however to select not those things which are consequent to a certain thing, but such as are consequent to a whole thing; for instance, not what is consequent to a certain man, but what is consequent to every man. For a syllogism subsists through universal propositions. A proposition, therefore, being indefinite, it is immanifest whether it is universal; but when it is definite, this is manifest. In a similar manner also, those things are to be selected, to the whole of which a thing is consequent, and this for the before-mentioned cause. The whole consequent, however, must not be assumed to follow. I say, for instance, it must not be assumed, that every animal is consequent to man, or every science to music; but only, that they are simply consequent, just as we also propose. For the other is useless and impossible; as, that every man is every animal: or that justice is every thing good. But to that to which something else is consequent, the mark every must be added. When the subject, however, is comprehended by a certain thing, to which it is necessary to assume consequents, those, indeed, which follow, or which do not follow the universal, are not to be selected in these; for they were assumed in those. For such things as are consequent to animal, are also consequent to man: and in a similar manner with respect to such things as are not present with. But the peculiarities about each thing are to be assumed. For there are certain things peculiar to species, not common to genus; since it is

necessary that certain peculiarities should be present with different species. Nor are those things to be selected, as if anteceding the universal, to which the things contained under them are consequent. Thus those things to which man is consequent, ought not to be assumed, as if they were the antecedents of animal. For if animal is consequent to man,, it is likewise consequent to all these. But these more appropriately pertain to the selection of the antecedents of man. Those things also are to be assumed, which are for the most part consequent or antecedent. For of problems which happen for the most part, the syllogism also is from propositions, all, or some of which, are for the most part true. For the conclusion of every syllogism is similar to its principles. Farther still, things consequent to all things, are not to be selected; for from them there will not be a syllogism; but through what cause will be manifest from what follows.

Aristotle, Prior Analytics. Book I, Chapter 28

He, therefore, who wishes to confirm anything of a certain whole, should look to the subjects of that which is confirmed, of which that is predicated; but of that which ought to be predicated, he should consider such things as are consequent to this. For if anything of these is the same, it is necessary that the one should be present with the other. But if it is to be proved, that a thing is not present with every, but with a certain individual, those things are to be considered which each follows. For if any one of these is the same, the being present with a certain thing is necessary. But when the being present with nothing is necessary; so far as pertains to that with which it is not necessary to be present, regard must be had to the consequents; but so far as pertains to that which ought not to be present with, regard must be had to those things which cannot be present with it. Or on the contrary, on the part of that with which it is necessary not to be present, regard must be had to those things which cannot be present with it; but on the part of that which ought not to be present with, to the consequents. For whichever of these are the same, it will happen that the one is present with no other; because at one time, a syllogism will be produced in the first figure, and at another, in the middle figure. If, however, the not being present with a certain thing is to be proved, the antecedents of that with which it ought not to be present, and to which it is consequent, are to be regarded; but of that which ought not to be present with, those things are to be regarded which cannot be present with it. For if any thing of these is the same, the not being present with a certain thing is necessary. Perhaps, however, what has been said will be more evident as follows: Let the consequents to A be B but let the things to which it is consequent be C; and let the things which cannot be present with it be D. Again, let the things which are present with E be F; but the things to which it is consequent be

G. And let the things which cannot be present with it, be H. If, therefore, a certain C and a certain F are the same, it is necessary that A should be present with every E, for F is present with every E, and A with every C; so that A is present with every E. But if C and G are the same, it is necessary that A should be present with a certain E; for A is consequent to every C, and every G to E. If, however, F and D are the same, A will be present with no E, and this, from a pro-syllogism. For since a privative assertion may be converted, and F is the same with D, A will be present with no F; but F is present with every E. Again, if B and H are the same, A will be present with no E. For B is present with every A, but with no E. For B and H are the same, and H is present with no E. But if D and G are the same, A will not be present with a certain E. For A will not be present with G, since it is not present with D. But G is under E; so that it will not be present with a certain E. If, however, G and B are the same, the syllogism will be inverse. For G will be present with every A (since B is present with A) and E will be present with B; (for B is the same with G), but it is not necessary that A should be present with every E, but it is necessary that it should be present with a certain E, because a universal predication may be converted into a particular predication. It is evident, therefore, that regard must be had to what has been said, from each part of every problem; for through these all syllogisms are formed. But it is necessary in consequents, and the antecedents of each thing, to look to things first, and which are especially universal. For instance on the part of E, more regard is to be paid to K F, than to F only; but on the part of A, more regard must be paid to K C, than to C only. For if A is present with K C, it is also present with F, and with E. But if it is not consequent to this, yet it may be consequent to F, to which the thing itself is consequent. For if it follows the first things, it also follows those things which are placed under these. But if it does not follow these, nevertheless, it may follow those things which are arranged under these. It is also evident, that this speculation subsists

through three terms, and two propositions; and that through the before-mentioned figures, all syllogisms are constructed. For it is shown that A is present with every E, when of C, and of F, something which is the same is assumed. But this will be the middle; and the extremes are A and E. The first figure, therefore, is produced. But it is shown to be present with a certain thing, when C and G are assumed to be the same. But this is the last figure; for G becomes the middle. And it is proved to be present with no individual, when D and F are the same. But thus also the first figure, and the middle are produced. The first, indeed, because A is present with no F; (since a privative assertion may be converted), but F is present with every E. And it produces the middle figure, because D is present with no A, but is present with every E. It is also proved, not to be present with a ccrtain individual, when D and G are the same. But this is the last figure. For A will be present with no G, and E will be present with every G. It is evident, therefore, that all syllogisms are produced through the before-mentioned figures. It is likewise manifest, that those things are not to be selected which are consequent to all things, because no syllogism will be produced from these. For, in short, a syllogism cannot be constructed from consequents; but privation cannot be proved through those things which arc consequent to all things. For it is necessary to be present with the one, and not to be present with the other. It is also evident, that other modes of selection are useless to the construction of syllogisms as, for instance, if the consequents to each are the same, or if those things to which A is consequent, and those which cannot be present with E; or again such as cannot be present with either; for a syllogism will not be produced through these. For if the consequents should be the same, as, for instance, B and F, the middle figure will be produced, having both the propositions categoric. But if those things are the same to which A is consequent, and which cannot be present with E, as, for instance, C, and H, the first figure will be produced, having the minor proposition privative. But if those are

the same which cannot be present with either, as, for instance, D and G, both propositions will be privative, either in the first, or in the middle figure. Thus, however, there will by no means be a syllogism. It is also evident, that certain things are to be assumed in this speculation which are the same, and not certain things which are different or contrary. In the first place, indeed, because this inspection is for the sake of the middle; but it is necessary to assume the middle not different, but the same. In the next place, in those things in which a syllogism happens to be produced, in consequence of contraries being assumed, or things which cannot be present with the same thing; all are reduced to the before-mentioned modes. Thus, if B and F are contraries, or cannot be present with the same thing; these being assumed, there will be a syllogism, that A is present with no E. This, however, is not effected from these assumptions, but from the before-mentioned mode. For B is present with every A, and with no E. Hence it is necessary that B should be the same with a certain H. Again, if B and G cannot be present with the same thing, it may be concluded that A is not present with a certain E; for thus there will be the middle figure. For B is present, indeed, with every A, and with no G. Hence it is necessary that B should be the same with some H. For the impossibility of B and G being present with the same thing, does not differ from B being the same with a certain H; since in H every thing is assumed, which cannot be present with E. It is evident, therefore, from these very inspections that no syllogism will be produced. But if B and F are contraries, it is necessary that B should be the same with a certain H; and that a syllogism should be produced through these. It happens, however, to those who thus inspect, that they look to a way different from the necessary, because they are sometimes ignorant that B and H are the same.

Aristotle, Prior Analytics. Book I, Chapter 29

Syllogisms also leading to the impossible, will subsist after the same manner as ostensive syllogisms. For these likewise are produced through consequents, and those things which each follows; and there is the same inspection in both. For that which is demonstrated ostensively, may also be syllogistically collected through the impossible, and through the same terms: and that which is demonstrated through the impossible, may also be demonstrated ostensively. Thus, for instance, it may be demonstrated that A is present with no E. For let A be supposed to be present with a certain E. Since, therefore, B is present with every A, and A is present with a certain E; B will be present with a certain E. But it was present with no E. Again, it may be demonstrated that A is present with a certain E. For if A is present with no E, but E is present with every H, A will be present with no H, but it was supposed to be present with every H. The like will also take place in other problems. For always, and in all things, the demonstration through the impossible will be from things consequent, and those things which each follows. And in every problem there is the same consideration, whether any one wishes to syllogize ostensivcely, or to lead to the impossible; for both demonstrations consist from the same terms. Thus, for instance, if it should be demonstrated that A is present with no E, because it happens that B is present with a certain E, which is impossible; if it is assumed that B is present with no E, and is present with every A, it is evident, that A will be present with no E. Again, if it should be concluded ostensively that A is present with no E, to those who suppose that it is present with a certain E, it may be shown through the impossible, that it is present with no E. The like will also take place in others. For in all problems it is necessary to assume a common term, different from the subject terms, to which the syllogism concluding the false will be referred. Hence this

proposition being converted, but the other remaining the same, there will be an ostensive syllogism through the same terms. But an ostensive syllogism differs from that which leads to the impossible, because in the ostensive, both propositions are posited according to truth; but in that which leads to the impossible, one is posited falsely. These things, however, will be more evident through what follows, when we shall speak about the impossible. But now let thus much be manifest to us, that those who wish to syllogize ostensively, and those who wish to lead to the impossible, must look to these things. In other syllogisms, however, which are from hypothesis, such as those which are according to transmutation, or according to quality, the consideration consists in the subject terms; not in those assumed from the first, but in those which are changed. But the mode of inspection is the same. It is also necessary to consider, and unfold by division, in how many modes syllogisms from hypothesis are produced. Thus, therefore, each problem is demonstrated. It is also possible syllogistically to collect some of these after another manner; as, for instance, univeirsals through the inspection of particulars, and this from hypothesis. For if C and H are the same, and if E is assumed to be present with H alone, A will be present with every E. And again, if D and H are the same, and E is predicated of H alone, it may be concluded that A is present with no E. It is evident, therefore, that the inspection must be after this manner. The like must also take place in things necessary and contingent. For there is the same consideration; and the syllogism of the being contingent, and of the being present with, will be through terms disposed in the same order. But in contingents, things which are not present with, but which may be present with are to be assumed; for it has been shown that through these a syllogism of the contingent is produced. There is also a similar reasoning in other predications. It is evident, therefore, from what has been said, that not only all syllogisms may be formed in this way, but that they cannot be formed in any other way. For it has been shown that every syllogism is

produced through some one of the before-mentioned figures; but these cannot be constituted through anything else than the consequents and antecedents of a thing. For from these propositions consist, and the middle term is assumed. Hence, through other things a syllogism cannot be produced.

Aristotle, Prior Analytics. Book I, Chapter 30

Of all problems, therefore, there is the same way, as well in philosophy, as in every art and discipline. For it is necessary to collect about each of them, those things which are present with, and the subjects with which they are present, and to have of these a great abundance. It is also necessary to consider these through three terms, subverting, indeed, in this way, but constructing in that; and according to truth, to reason from those things, which are truly described to be present with; but on account of dialectic syllogisms, to reason from probable propositions. With respect, indeed, to the universal principles of syllogisms, we have shown how they subsist, and in what manner it is necessary to investigate them; that we may not direct our attention to all that has been said, nor to constructing and subverting the same, nor forming a construction of every, or a certain individual and subverting wholly, or partially; but that we may look to things fewer and definite. In particulars, however, it is necessary to make a selection, as of good, or science. But the peculiar principles in every science are many. And hence it is the province of experience to deliver the principles of every thing. I say, for instance, that astrological experience delivers the principles of the astrological science; for the phenomena being sufficiently assumed, astrological demonstrations are thus invented. The like also takes place in every other art and science. Hence, if those things are assumed which exist or are present about each individual, it will now be our province readily to exhibit demonstrations. For if nothing which pertains to history is omitted of what is truly present with things, we shall be furnished with the means about every thing of which there is demonstration, of discovering and demonstrating this; and we shall be able to make that apparent, which is naturally incapable of

being demonstrated. Universally, therefore, we have nearly shown how propositions ought to be selected; but we have accurately discussed this affair, in the treatise On Dialectic.

Aristotle, Prior Analytics. Book I, Chapter 31

That the division, however, through genera, is a certain small portion of the above-mentioned method, it is easy to see. For division is as it were an imbecile syllogism; for it begs what ought to be demonstrated, and always syllogistically infers something of things superior. And, in the first place, all those who use it are ignorant of this and endeavour to persuade themselves and others that it is possible there may be demonstration about essence, and the very nature of a thing. Hence, neither do they perceive that those who divide syllogize, nor that it is possible in the way we have mentioned. In demonstrations, therefore, when it is requisite syllogistically to infer that something is present with, it is necessary that the medium through which the syllogism is produced, should always be less than the first extreme, and should not be universally predicated of it. On the contrary, division assumes the universal for the middle term. For let animal be A, mortal, B, immortal, G, and man of whom the definition ought to be assumed D. Division, therefore, assumes that every animal is either mortal or immortal; but this is, that the whole of whatever is A, is either B or C. Again, he who divides, always admits that man is an animal; so that he assumes that A is predicated of D. The syllogism, therefore, is, that every D is either B or C. Hence it is necessary to assume, that man is either mortal or immortal; for it is necessary that an animal should be either mortal or immortal. It is not, however, necessary that it should be mortal, but this is desired to be granted; though, this is that which ought to be syllogistically inferred.

Every animal is either mortal or immortal:

Every man is an animal:

∴ Every man is mortal or immortal.

Again, placing A for mortal animal: B, for pedestrious; C, for without feet; and D, for man, it assumes in a similar manner. For it assumes that A is either in B or in C (for every mortal animal is either pedestrious, or without feet), and it assimies that A is predicated of D; (for it assumes that man is a mortal animal) so that it is necessary that man should be either a pedestrious or biped animal. That he is pedestrious, however, is not necessary, but is assumed. But this is that which again ought to be proved.

Every mortal animal is pedestrious, or without feet:

Every man is a mortal animal:

∴ Every man is pedestrious, or without feet.

And after this manner, it always happens to those who divide, that they assume a universal medium, and the extremes, viz. that of which it is necessary to exhibit, and the differences. But in the last place, they assert nothing clearly, why it is necessary that this should be a man, or anything else which is the subject of investigation. For they pursue every other way, not apprehending that there are those copious supplies which may be obtained. But it is evident, that by this divisive method, it is not possible to subvert, nor to conclude anything syllogistically of accident or peculiarity, nor of genus, nor of those things of which we are ignorant whether they subsist in this, or in that way; as, whether the diameter of a square is commensurable, or

incommensurable with the side. For if it should assume that every length is either commensurable or incommensurable, but the diameter of a square is a length, it will collect that the diameter is either commensurable or incommensurable. But if it should assume that the diameter is incommensurable, it will assume that which ought to be syllogistically collected.. Hence, that cannot be demonstrated which was to be demonstrated. For this is the way; and through this, it cannot be proved. Let, however, the commensurable or incommensurable be A; length, B; and the diameter C.

Every length is or is not commensurable:
Every diameter is a length:
∴ Every diameter is or is not commensurable.

It is evident, therefore, that this mode of investigation is neither adapted to every speculation, nor is useful in those things in which it especially appears to be appropriate. Hence, from what demonstration is produced, and how, and what is to be regarded in every problem, is manifest from what has been said.

Aristotle, Prior Analytics. Book I, Chapter 32

In the next place, we must show, how we may reduce syllogisms to the before-mentioned figures; for this is what still remains of the [proposed] speculation. For if we have surveyed the generation of syllogisms, and possess the power of inventing them, and if besides this we shall have analysed them when formed, into the before-mentioned figures, the design which we proposed from the first, will have received its completion. At the same time also it will happen, that what has been before said, will be confirmed, and it will be more evident, that they thus subsist from what will now be said. For it is necessary that everything which is true should itself accord with itself in every respect. In the first place, therefore, it is necessary to endeavour to select the two propositions of a syllogism; for it is easier to divide into greater than into less parts; and composites are greater than the things from which they are composed. In the next place, it is necessary to consider whether it is in a whole, or in a part. And if both propositions should not be assumed, one of them is to be posited. For those who write or interrogate, sometimes proposing the universal, do not receive the other which is contained in the universal; or they propose theses, indeed, but omit those through which these are concluded; and in vain interrogate other things. It must be considered, therefore, whether anything superfluous is assumed, and whether anything necessary is omitted. And this, indeed, is to be posited, but that to be taken away, until we arrive at two propositions; for without these the sentences which are thus the subject of interrogations cannot be reduced. In some sentences, therefore, it is easy to see what is wanting; but some are latent, and appear to be syllogisms, because something necessarily happens from the things vhich are posited; as, if it should be assumed, that essence not being subverted, essence is not subverted; but those things being subverted from which a

thing consists, that also which is composed from these is subverted. For those things being posited, it is necessary, indeed, that a part of essence should be essence, yet this is not syllogistically concluded through the things assumed, but the propositions are wanting. Again, if man existing, it is necessary there should be animal; and animal existing, that there should be essence; then man existing, it is necessary there should be essence. This, however, is not yet syllogistically collected, for the propositions do not subsist as we have said they should. But we are deceived in these, because something necessary happens from the things posited, and a syllogism also is a thing attended with necessity. The necessary, however, is more extended than syllogism; for every syllogism is necessary; but not every thing necessary is a syllogism. Hence if certain things being posited, anything happens, reduction must not be immediately attempted, but two propositions must first be assumed. Afterwards a division must thus be made into terms. But that term which is said to be in both the propositions, must be posited as the middle term; for it is necessary that the middle should exist in both terms, in all the figures. If, therefore, the middle predicates and is predicated; or if it, indeed, predicates, but something else is denied of it; there will be the first figure. But if it predicates and is denied by something, there will be the middle figure. And if other things are predicated of it; or one thing is denied, but another is predicated, there will be the last figure. For thus the middle will subsist in each figure. The like will also take place if the propositions should not be universal: for there is the same definition of the middle. It is evident, therefore, that in discourse, when the same thing is not frequently asserted, a syllogism will not be formed; for the middle is not assumed. But since we know what kind of problem is concluded in each figure, and in which figure universal is concluded, and in which particular, it is evident that we must not direct our attention to all the figures, but to that

which is adapted to each problem. Such things, however, as are concluded in many figures, we may know the figure of by the position of the middle.

Aristotle, Prior Analytics. Book I, Chapter 33

It frequently, therefore, happens that we are deceived about syllogisms, in consequence of the necessity of concluding as we have before observed. But we are sometimes deceived through the similitude of the position of the terms, of which we ought not to be ignorant. Thus if A is predicated of B, and B of C, it would seem that the terms thus subsisting there will be a syllogism. Neither, however, is anything necessary produced, nor a syllogism. For let A be that which always is; B, Aristomenes as the object of intellection; and C, Aristomenes. It is true, therefore, that A is present with B; for Aristomenes is always the object of intellection. It is also true that B is present with C; for Aristomenes is Aristomenes the object of intellection. But A is not present with C; for Aristomenes is corruptible. For a syllogism will not be formed, when the terms thus subsist; but it is necessary that a universal proposition A B should be assumed. But this is false, viz. to think that every Aristomenes, who is the object of intellection, always exists. Again, let C, be Miccalus; B, Miccalus the musician ;A, to die tomorrow. B, therefore, is truly predicated of C; for Miccalus is Miccalus the musician; and A is truly predicated of B; for the musician Miccalus may die tomorrow; but A is falsely predicated of C. This instance, therefore, does not differ from the former; for it is not universally true that Miccalus the musician will die tomorrow. But this not being assumed, there was not a syllogism. This deception, therefore, is produced in a small difference. For, we make a concession, as if there were no difference between saying that this thing is present with that, and this thing is present with every individual of that.

Aristotle, Prior Analytics. Book I, Chapter 34

It also frequently happens that we are deceived, because the terms which are arranged in the proposition, are not well expounded, as if A should be health; B, disease; and C, man. For it is true to say, that A cannot be present with any B; (for health is present with no disease); and again, it is true that B is present with every C; (for every man is receptive of disease); whence it would seem to happen as a consequence that health can be present with no man. But the cause of this is, that the terms are not rightly expounded according to the diction. For the words significant of habits being transmuted, there will not be a syllogism as if the word well is posited instead of health, and the word ill instead of disease. For it is not true to say, that to be well cannot be present with him who is ill. But this not being assumed, a syllogism will not be produced, unless of that which is contingent; and this is not impossible. For it may happen that health is present with no man. Again, there will in a similar manner be the false, in the middle figure. For health happens to be present with no disease, and may happen to be present with every man; and, therefore, disease will not be present with any man. But the false happens to take place in the third figure, according to the being contingent. For it may happen that health and disease, science and ignorance, and, in short, contraries, may be present with every individual of the same thing; but it is impossible that they should be present with each other. This, however, does not accord with what has been before said. For when it happens that many things are present with the same thing, it will also happen that they are present with each other. It is evident, therefore, that in all these, deception is produced from the exposition of the terms. For the words being changed by which the habits are signified, nothing false will be collected. Hence

it is manifest, that in such like propositions, that which is according to habit, is always to be assumed, and posited for a term, instead, of habit.

Aristotle, Prior Analytics. Book I, Chapter 35

It is not requisite, however, always to investigate a name for the purpose of expounding terms; for there will frequently be sentences in which a name is not posited. Hence it is difficult to reduce syllogisms of this kind. But it also sometimes happens that we are deceived through such an investigation as this; as, for instance, because a syllogism is of things immediate. For let A be two right angles; B, a triangle; C, an isosceles triangle. A, therefore, is present with C, through B; but it is present with B no longer through anything else; for a triangle has essentially two right angles. Hence there will not be a middle of the proposition A B which is demonstrable. It is evident, therefore, that the middle is not always to be so assumed, as if it were a particular definite thing, (ως τοδε τι) but that sometimes a sentence is to be assumed, which happens to be the case in the instance just adduced.

Aristotle, Prior Analytics. Book I, Chapter 36

But for the first to be present with the middle and this with the extreme, ought not to be assumed, as if the first, of the middle, and this, of the extreme, were always similarly predicated of each other. And the like must also be said of the not being present with. In as many ways, however, as to be is predicated, and anything is truly asserted, in so many ways, it is requisite to think, the being present with, and the not being present with are signified; as, for instance, that of contraries there is one science. For let A be, there is one science; and B, things contrary to each other. A, therefore, is present with B, not as if contraries are one science; but because it is true to say of them, that there is one science of them. But it sometimes happens that the first is predicated of the middle, but that the middle is not predicated of the third. For instance, if wisdom is science, but wisdom is of good, the conclusion is, that science is of good. Hence good is not wisdom; but wisdom is science. But sometimes the middle is predicated of the third; and the first is not predicated of the middle. For instance, if there is a science of every quality and of every contrary; but good is contrary to evil and is a quality; the conclusion is that there is a science of good. Neither good, however, nor quality, nor contrary, is science; but good is these. Sometimes also, neither the first is predicated of the middle, nor this of the third; the first being sometimes, indeed, predicated of the middle, and sometimes not. For instance, of that of which there is science, there is a genus; but there is a science of good; and the conclusion is, that there is a genus of good. But of these no one is predicated of no one. If, however, of that of which there is science, this is genus; but there is a science of good; the conclusion is, that good is a genus. Of the extreme, therefore, the first is predicated, but they are not predicated of each others. An assumption must be made after the same manner in the not being present with. For

this thing not being present with this, does not always signify that this thing is not this, but sometimes that this is not of this, or that this is not with this. Thus, for instance, there is not a motion of motion, or a generation of generation; but there is a motion and generation of pleasure; pleasure, therefore, is not generation or motion. Again, of laughter there is a sign; but there is not a sign of a sign; so that laughter is not a sign. The like will also take place in other things, in which the problem is subverted, in consequence of genus being in a certain respect referred to it. Again, occasion is not opportune time; for with divinity there is occasion, but there is not opportune time, because nothing is useful to divinity. For it is necessary to place as terms, occasion, opportune time, and divinity; but the proposition must be assumed according to the case of the noun. For, in short, we, assert this universally, that terms are always to be posited according to the appellations of nouns; as, for instance, man, or good, or contraries; not of man, or of good, or of contraries. But propositions are to be assumed according to the cases of each word. For they are either to be assumed to this, as the equal; or of this as the double; or this thing, as striking, or seeing; or this one, as man, animal; or if a noun falls in any other way, according to a proposition.

Aristotle, Prior Analytics. Book I, Chapter 37

For this thing, however, to be present with this, and for this to be truly asserted of this, must be assumed in as many ways, as predications are divided. These also must be assumed, either in a certain respect, or simply; and farther still, either simple, or connected. The like also must be assumed, in the not being present with. These things, however, must be better considered and defined.

Aristotle, Prior Analytics. Book I, Chapter 38

That, however, which is repeated in propositions, must be joined to the first extreme, and not to the middle term. I say, for instance, if there should be a syllogism, in which it is collected that there is a science of justice, because it is good; the expression, because it is good, or so far as it is good, must be joined to the first extreme. For let A be science, that it is good; B, good; and C, justice. A, therefore, is truly predicated of B; for of good there is science that it is good. B also is truly predicated of C; for justice is that which is good. Thus, therefore, the analysis is produced.

Of good there is science that it is good:
Justice is good:
∴ Of justice there is science that it is good.

But if to B there is added, that it is good, it will not be true. For A, indeed, will be truly predicated of B; but that B is predicated of C will not be true. For to predicate of justice good that it is good, is false, and not intelligible. In a similar manner also it may be shown, that the salubrious is an object of science so far as it is good; or that hircocervus, or an animal formed from the union of a goat and a stag, is an object of opinion, so far as it is a non-entity; or that man is corruptible, so far as he is sensible. For in all things which are added to an attribute, repetition must be added to the greater extreme. There is not, however, the same position of the terms, when anything is simply syllogistically collected, or this particular thing, or in a certain respect, or after a certain manner. I say, as, for instance, when good is shown to be an object of

science, and when a thing is shown to be an object of science because it is good. But if good is simply shown to be an object of science, being must be constituted as the middle term.

Every being is an object of science:
Good is being:
∴ Good is an object of science.

If, however, it should be proved that it may be scientifically known to be good, a certain being, must be assumed for the middle term. For let A be science that it is a certain being; B, a certain being; and C, good. A, therefore, is truly predicated of B; for there is science of a certain being that it is a certain being. But B also is predicated of C because C is a certain being. Hence A will be predicated of C. There will, therefore, be science of good that it is good. For the expression a certain being, is the sign of peculiar or proper essence. But if being is posited as the middle term, and being simply is added to the extreme, and not a certain being, there will not be a syllogism, that there is science of good that it is good, but that it is being. For instance, let A be science that it is being; B, being; and C, good.

Of being there is science that it is being:
Good is being:
∴ Of good there is science that it is being.

It is evident, therefore, that in those syllogisms which conclude from a part, the terms must be thus assumed.

Aristotle, Prior Analytics. Book I, Chapter 39

It is also necessary to assume things which are capable of effecting the same thing, viz. nouns for nouns, and sentences for sentences, and always to assume a noun for a sentence; for thus the exposition of the terms will be easier. For instance, if it is of no consequence, whether it is said that which may be apprehended is not the genus of that which may be opined, or that which may be opined, is not anything which may be apprehended; for that which is signified is the same in each; in this case, instead of the before-mentioned sentence, that which may be apprehended, and that which may be opined, must be posited as terms.

Aristotle, Prior Analytics. Book I, Chapter 40

Since, however, it is not the same thing, for pleasure to be good, and for pleasure to be the good; the terms must not be similarly posited. But if, indeed, there is a syllogism that pleasure is the good, the good must be posited as a term; and if that pleasure is good, good must be posited as a term. The same method must also be adopted in other things.

Aristotle, Prior Analytics. Book I, Chapter 41

It is not, however, the same thing, neither in reality nor in words to assert that with which B is present, with every individual of this A is present; and to say that with every individual of that with which B is present, A also is present. For nothing hinders but that B may be present with C, yet not with every C. For instance, let B be something beautiful; and C, something white. If, therefore, something beautiful is present with something white, it is true to say that beauty is present with that which is white, yet not perhaps with every thing white. If, therefore, A is present with B, but not with every thing of which B is predicated; neither if B is present with every C, nor if it is alone present with a certain C, it is not only not necessary that A should be present with every C, but that it should not, indeed, be present with a certain C. But if with that of which B is truly predicated, with every individual of this, A is present, it will happen that A will be predicated of every individual of that, of every individual of which B is predicated. If, however, A is predicated of that, of every individual of which B is predicated, nothing will hinder B from being present with C, with not every, or with no individual of which A is present. In three terms, therefore, it is evident that the assertion, that of which B is predicated, A also is predicated of every individual of this, signifies that of those things of which B is predicated, of all these, A also is predicated. And if B is predicated of every individual, A also will thus be predicated. But if it is not predicated of every individual, it is not necessary that A should be predicated of every individual. It is not requisite, however, to think, that a certain absurdity will happen from the exposition of the terms. For we do not in proving employ the assertion that this is a particular definite thing, but we adduce it, just as a geometrician says that this line is a foot in length, is a right line, and is without breadth, though it is not so. The geometrician, however,

does not so use these, as if he syllogized from these. For, in short, unless there is that which is as a whole to a part, and something else which is to this, as a part to a whole, he who demonstrates, demonstrates from nothing of this kind; for neither is a syllogism produced from these. But we use exposition, in the same manner as we use sense, when we speak to a learner. For we do not use it, as if it were not possible to demonstrate without these, as we use propositions from which a syllogism is composed.

Aristotle, Prior Analytics. Book I, Chapter 42

Nor ought we to be ignorant that in the same syllogism, not all the conclusions are produced through one figure, but through different figures. It is evident, therefore, that analyzations also should thus be made. Since, however, not every problem is proved in every figure, but certain problems are proved in each; it is evident from the conclusion, in what figure the investigation is to be made.

Aristotle, Prior Analytics. Book I, Chapter 43

With respect, however, to the arguments urged against definitions, by which one certain thing posited in the definition is reprehended, that term must be posited which is reprehended, and not the whole definition; for it will happen that we shall be less disturbed on account of prolixity. Thus if it is to be shown that water is potable, and humid, potable and water must be posited as terms.

Aristotle, Prior Analytics. Book I, Chapter 44

Farther still, we must not endeavour to reduce syllogisms which are from hypothesis. For they cannot be reduced from the things which are posited; because they do not prove through syllogism, but all of them being assented to demonstrate through compact. Thus, if any one supposing that unless there is one certain power of contraries, neither will there be one science of them, afterwards should dialectically show, that there is not one power of contraries, as, for instance, of the salubrious and the insalubrious; for the salubrious and the insalubrious subsist at one and the same time; in this case it will be demonstrated, that there is not one power of all contraries, but it is not demonstrated that there is not one science of contraries; though it is necessary to acknowledge that there is, yet not from syllogism but from hypothesis. This syllogism, therefore, cannot be reduced. But that syllogism in which it is proved that there is not one power of contraries may be reduced; for this perhaps is a syllogism, but that is hypothesis. The like also takes place in syllogisms which conclude through the impossible; for neither is it possible to analyze these; but a deduction to the impossible may be analyzed, for it is demonstrated by syllogism. But the other cannot be analyzed; for it is concluded from hypothesis. They differ, however, from the before-mentioned syllogisms from hypothesis, because in them, indeed, it is necessary that something should have been previously acknowledged, in order that afterwards there may be a consent; as if it should be shown that if there is one power of contraries, there is also the same science of them; but here what was before not acknowledged, is after the demonstration admitted, because the falsity is evident; as if admitting that the diameter of a square is commensurable with the side, odd things should be equal to such as are even. Many other things also are concluded from hypothesis, which it is

necessary to consider and clearly explain. What, therefore, the differences are of these, and in how many ways syllogisms from hypothesis are produced, we shall afterwards show. Let only thus much be now manifest for us, that such like syllogisms cannot be resolved into figures; and from what cause we have shown.

Aristotle, Prior Analytics. Book I, Chapter 45

Such problems, however, as are proved in many figures, if they are proved in one syllogism, may be referred to another. Thus a privative syllogism in the first figure, may be referred to the second figure; and that syllogism which is in the middle may be referred to the first figure. Not all, however, but some only can be thus analyzed. But this will be evident in what follows. For if A is present with no B, but B is present with every C, A will be present with no C. Thus, therefore, the first figure is produced. But if a privative assertion is converted, there will be the middle figure. For B will be present with no A, and with every C. The like will also take place if the syllogism is not universal but partial. As if A is present with no B, but B is present with a certain C; for the privative proposition being converted, there will be the middle figure. Of the syllogisms, however, which are in the middle figure, the universal, indeed, are referred to the first figure; but of the partial one alone is referred. For let A be present with no B, but with every C. The privative assertion, therefore, being converted, there will be the first figure. For B will be present with no A, but A will be present with every C. But if affirmation is joined to B, and privation to C, C must be posited as the first term. For this is present with no A, and A is present with every B. Hence C will be present with no B. Neither, therefore, will B be present with any C. For a privative assertion may be converted. But if the syllogism is partial, when privation is joined to the greater extreme, the syllogism may be resolved into the first figure; as if A is present with no B, and with a certain C. For the privative assertion being converted, there will be the first figure. For B will be present with no A, and A will be present with a certain C. When, however, affirmation is joined to the greater extreme the syllogism cannot be resolved; as, if A is present with every B, but not with every C. For the proposition A

B does not admit conversion; nor when a conversion is made will there be a syllogism. Again, not all the syllogisms which are in the third, can be resolved into the first figure; but all those which are in the first, may be resolved into the third figure. For let A be present with every B, and B be present with a certain C. Since, therefore, a partial categoric assertion may be converted, C also will be present with a certain B. But A was present with every B; so that the third figure will be produced. The like will also take place if the syllogism is privative; for a categoric proposition may be converted in part. Hence A will be present with no B, but will be present with a certain C. But of the syllogisms which are in the last figure (i.e. the third) one only is not resolved into the first, when the privative assertion is not posited universal; all the rest are resolved. For let A be predicated of every C, and also B. C, therefore, may be converted partially to each extreme. Hence it will be present with a certain B; so that there will be the first figure, if A, indeed, is present with every C, but C is present with a certain B. And if A is present with every C, but B is present with a certain C, there is the same reasoning; for B is reciprocated with C. But if B is present with every C, and A is present with a certain C, B must be posited as the first term. For B is present with every C, and C is present with a certain A; so that B is present with a certain A. But since that which is in a part may be converted, A also will be present with a certain B. And if the syllogism is privative, when the terms are universal, a similar assumption must be made. For let B be present with every C, but A with no C. Hence C will be present with a certain B. But A is present with no C; so that the middle will be C. The like will also take place if the privative assertion is universal, and the categoric partial. For A is present with no C, but C is present with a certain B. If, however, the privative proposition is assumed in part, there will not be an analysis; as if B is present with every C, but A is not present with a certain C; for the proposition B C being converted, both propositions will be according to a part. But it is evident,

that in order for these figures to be analyzed into each other, the proposition which contains the less extreme, must be converted in each figure; for this being transposed, a transition will be effected. Of the syllogisms, however, which are in the middle figure, one is resolved, and another is not resolved into the third figure. For when the universal proposition is privative, an analysis is effected. For if A is present, indeed, with no B, but is present with a certain C, both extremes similarly reciprocate with A. Hence B is present with no A, but C is present with a certain A. The middle, therefore, is A. But when A is present with every B, and is not present with a certain C, an analysis will not be produced. For neither of the propositions from the conversion will be universal. Tlie syllogisms also of the third may be resolved into the middle figure, when the privative assertion is universal. As if A is present with no C, but B is present with some, or with every C; for C will be present with no A, but will be present with a certain B. But if the privative assertion is partial, there will not be an analysis; for a partial negative does not admit of conversion. It is evident, therefore, that the same syllogisms are not analyzed in these figures, which neither are analyzed into the first figure; and that when syllogisms are reduced to the first figure, these alone are confirmed through a deduction to the impossible. In what manner, therefore, it is necessary to reduce syllogisms, and that figures may be resolved into each otlier, is evident from what has been said.

Aristotle, Prior Analytics. Book I, Chapter 46

It makes some dificrcnce, however, in constructing or subverting a problem, to be of opinion that these expressions not to be this particular thing, and to be not this particular thing, signify the same or a different thing; as, for instance, not to be white, and to be not white. For they do not signify the same thing; nor of the expression to be white, is this the negation, to be not white; but, not to be white. But the reason of this is as follows: The expression, he is able to walk, subsists similarly with the expression, he is able not to walk; the expression, it is white, with the expression, it is not white; and he knows good, with the expression, he knows that which is not good. For this expression, he knows good, and the expression, he has a knowledge of good, do not at all differ from each other; nor is there any difference between these expressions, he is able to walk, and he has the power of walking. Hence the opposites also, he is not able to walk, and he has not the power of walking, do not differ from each other. If, therefore, the expression, he has not the power of walking, signfies the same thing as the expression, he has the power of not walking; these will be at one and the same time present with the same thing. For the same person is able to walk, and not to walk; and has a knowledge of good, and of that which is not good; but affirmation and negation being opposites, are not at one and the same time present with the same thing. As, therefore, it is not the same thing, not to know good, and to know that which is not good; neither is it the same thing, to be not good, and not to be good. For of things analogous, if the one is different, the other also is different. Nor is it the same thing, to be not equal, and not to be equal. For to the one, i.e., to that which is not equal, something is subjected, viz., the being not equal, and this is the unequal; but to the other, nothing is subjected. Hence, not every thing is equal or unequal; but every thing is equal, or not equal. Farther still,

this assertion, it is not white wood, and the assertion, not is white wood, do not subsist together, or at one and the same time. For if it is wood not white, it will be wood; but that which is not white wood, is not necessarily wood. Hence it is evident, that of the expression, it is good, the negation is not, it is not good. If, therefore, of every one thing, either affirmation or negation is true; if there is not negation, it is evident, that there will in a certain respect be affirmation. But of every affirmation there is negation; and hence of this affirmation it is not good the negation is, it is not not good. They have this order, however, with respect to each other: Let to be good be A; not to be good, B; to be not good C, under B; not to be not good D, under A. With every individual, therefore, either A or B will be present, and each with nothing which is the same. And with whatever C is present, it is also necessary that B should be present. For if it is true to say that a thing is not white, it is also true to say that not it is white. For it is impossible that at one and the same time a thing should be white and not white; or that it should be wood not white, and be white wood. Hence, unless affirmation is present, negation will be present. But C is not always consequent to B. For that, in short, which is not wood, will not be white wood. On the contrary, therefore, with whatever A is present, D also is present; for either C or D is present. Since, however, it is not possible that to be not white, and to be white, should subsist together at one and the same time, D will be present. For of that which is white, it is true to say, that it is not not white. But A is not predicated of every D; for of that, in short, which is not wood, it is not true to predicate A, viz. to assert that it is white wood. Hence D will be true; and A will not be true, viz. that it is white wood. It is also evident that A is present with nothing which is the same, though B and D may be present with something which is the same. Privations also subsist similarly to this position with respect to attributions. For let equal be A; not equal, B; unequal, C; not unequal, D. In many things also with some of which the same thing is present, and with

others not, the negation may be similarly true, that not all things are white, or that not each thing is white; but that each thing is not white, or that all things are not white, is false. In like manner also, of this affirmation, every animal is white, the negation is not, every animal is not white; for both are false; but this, not every animal is white. Since, however, it is evident, that the assertions, is not white, and not is white, have different significations, and that the one is affirmation, but the other negation; it is evident, it is manifest that there is not the same mode of demonstrating each. For instance, there is not the same mode of demonstrating the following assertions: Whatever is an animal is not white, or it happens not to be white; and that it is true to say it is not white; for this is to be not white. But of the assertion, it is true to say it is white, or not white, there is the same mode of demonstrating. For both are constructively demonstrated through the first figure since the word true is similarly arranged with the verb is. For of the assertion, it is true to say it is white, the negation is not, it is true to say it is not white, but, it is not true to say it is white. But if it is true to say that whatever is a man is a musician, or is not a musician; it must be assumed that whatever is an animal, is a musician, or is not a musician, and it will be demonstrated. But that whatever is a man is not a musician, will be demonstrated by refuting, according to the before-mentioned three modes. In short, when A and B so subsist, that they cannot be present at the same time with the same thing, but from necessity one of them is present with every individual; and again, C and D after a similar manner; but A is consequent to C, and does not reciprocate; then also D will be consequent to B, and will not reciprocate. And A, indeed, and D, may be present with the same thing, but B and C cannot. In the first place, therefore, it hence appears that D is consequent to B. For since one of C D is necessarily present with every individual, but with that with which B is present, C cannot be present, because it co-introduces with itself A, but A and B cannot be present with the same thing; it is evident, that

D is a consequent. Again, since C does not reciprocate with A, but C or D is present with every individual, it will happen that A and D will be present with the same thing. But B and C cannot be present with the same thing, because A is consequent to C; for something impossible would happen. It is evident, therefore, that neither does B reciprocate with D, because it would happen that A is present together with D. It sometimes also happens that we are deceived in such an arrangement of the terms as this, because opposites are not rightly assumed, one of which must necessarily be present with every individual. As if A and B should not happen to be present at the same time with the same thing, but it is necessary that with that with which one is not present, the other should be present; and again, C and D subsist similarly; but A is consequent to every C; for it will happen that B is necessarily present with that with which D is present, which is false. For let the negation of A B be assumed, and let it be F, and again, the negation of C D, and let it be H. It is necessary, therefore, that either A or F should be present with every individual; for either affirmation or negation must be present. And again, either C or H must be present; for they are affirmation and negation. And it was supposed that A is present with every thing with which C is present; so that with whatever F is present, H also will be present. Again, because of F B, one is present with every individual, and in a similar manner one of H D, but H is consequent to F, B also will be consequent to D; for this we know. If, therefore, A is consequent to C, B also will be consequent to D. But this is false; for the consecution was vice versa in things which thus subsist. For it is not perhaps necessary that either A or F should be present with every individual; nor either F or B; for F is not the negation of A. For of good, the negation is, not good. These assertions, however, it is not good, and it is neither good, nor evil, are not the same. The like also takes place in C D; for the negations which are assumed are two.

Aristotle, Prior Analytics. Book II, Chapter 1

We have now, therefore, explained, in how many figures, through what kind, and what number of propositions, and when and how a syllogism is produced. We have likewise shown to what kind of things he should direct his attention, who subverts or constructs a syllogism, and in what manner it is necessary to investigate about a proposed subject, according to every method; and farther still, in what way we should assume the principles of every question. But since of syllogisms some are universal, and others partial; all the universal, indeed, always conclude a greater number of things. And of those that are partial, the categoric conclude many things, but the negative collect one conclusion only. For other propositions are converted; but a partial privative proposition is not converted. But the conclusion is a sentence signifying something of something. Hence other syllogisms conclude a greater number of things. Thus, if it is shown that A is present with every, or with a certain B it is also necessary that B should be present with a certain A. And if it is shown that A is present with no B, B also will be present with no A. But this conclusion is different from the former. If, however, A is not present with a certain B, it is not necessary that B also should not be present with a certain A; for it may be present with every A. This, therefore, is the common cause of all syllogisms, as well universal as partial. It is possible, however, to speak otherwise of universals. For of all those things which are under the middle, or under the conclusion, there will be the same syllogism, if some are posited in the middle, but others in the conclusion. Thus if A B is a conclusion through C, it is necessary that A should be predicated of all those things, which are under B, or under C. For if D is in the whole of B, but B is in the whole of A, D also will be in the whole of A. Again, if E is in the whole of C, and C is in A; E also will be in the whole of A. The like also will take place if the syllogism is

privative. But in the second figure, it will be only possible to form a syllogism of that which is under the conclusion. As if A is present with no B, but is present with every C, the conclusion will be that B is present with no C. If, therefore, D is under C, it is evident that B is not present with it. But that it is not present with those things which are under A, is not evident through syllogism; though it will not be present with E, if it is under A. That B, however, is present with no C, was demonstrated through syllogism; but that it is not present with A, was assumed without demonstration. Hence, it will not happen through syllogism, that B is not present with E. In partial syllogisms, however, of those things which are under the conclusion there will not be any necessity; for a syllogism is not produced, when this proposition is assumed in part; but there will be of all those which are under the middle, yet not through that syllogism: as, for instance, if A is present sent with every B, but B is present with a certain C. For there will not be a syllogism of that which is posited under C; but there will be of that which is under B; yet not through the antecedent syllogism. The like also takes place in other figures; for there will not be a conclusion of that which is under the conclusion; but there will be of the other, yet not through that syllogism; as well as in universal syllogisms from an undemonstrated proposition, those things which are under the middle are demonstrated. Hence, either there will not be a conclusion there, or there will also be a conclusion in these.

Aristotle, Prior Analytics. Book II, Chapter 2

It is therefore possible that the propositions may be true, through which a syllogism is produced; it is also possible that they may be false; and it is possible that the one may be true, but the other false. The conclusion, however, is necessarily true or false. From true propositions, therefore, the false cannot be concluded; but from false propositions that which is true may be inferred, except that not why, but merely that a thing is true may be collected. For there is not a syllogism of the why from false propositions; the cause of which will be unfolded in what follows. In the first place, therefore, that it is not possible the false can be collected from true propositions, is from hence manifest. For if when A is, it is necessary that B should exist; when B is not, it is necessary that A should not exist. Hence, if A is true, it is also necessary that B should be true; or it would happen that the same thing, at the same time is, and is not; which is impossible. Nor must it be conceived that because one term A is posited, it will happen that one certain thing existing, something will happen from necessity; since this is not possible. For that which happens from necessity is the conclusion; but the fewest things through which this is produced, are three terms, but two intervals and propositions. If, therefore, it is true that with whatever B is present, A also is present; and that with whatever C is present, B also is present; it is necessary that with whatever C is present, A also is present; nor can this be false. For at the same time the same thing would exist and not exist. A, therefore, is posited as one thing; two propositions being co-assumed. The like also takes place in privative propositions; for it is not possible from such as are true to show the false. But from false propositions that which is true may be collected, when both the propositions are false, and when one only is false; and this not when either indifferently, but when the second is false, if we assume the whole to be false. If,

however, not the whole is assumed to be false, that which is true may be collected, which ever proposition is assumed to be false. For let A be present with the whole of C, but with no B, nor let B be present with C. For this may happen to be the case. Thus, animal is present with no stone, neither is a stone present with any man. If, therefore, it is assumed that A is present with every B, and B with every C; A will be present with every C. Hence, from both the propositions being false, the conclusion will be true; for every man is an animal.

Every stone is an animal:
Every man is a stone:
∴ Every man is an animal.

In a similar manner also a privative conclusion may be formed. For let neither A nor B be present with any C, but let A be present with every B; as for instance, if the same terms being assumed, man should be posited as the middle term. For neither animal nor man is present with any stone, but animal is present with every man. Hence, if with that with which every is present, we assume that none is present; but assume that a thing is present with every individual of that with which it is not present; from both the propositions which are false the conclusion will be true.

No man is an animal:
Every stone is a man:
∴ No stone is an animal.

The like may also be shewn, if each proposition is assumed false in part. But if one proposition only is posited false; if the first indeed is wholly false, as A B, the conclusion will not be true. But if the proposition B C is wholly false, the conclusion will be true. I call, however, the proposition wholly false which is contrary to the true; as, if a thing should be assumed to be present with every individual, which is present with none, or if that which is present, with, every individual should be assumed to be present with none. For let A be present with no B, and B be present, with every C. If, therefore, we assume that the proposition B C is true, but that the whole of the proposition A B is false, and that A is present with every B; it is impossible that the conclusion should be true; for it was present with no C; since with no individual of that with which B is present, A was present; but B was present with every C.

Every animal (B) is a stone (A):
Every man (C) is an animal (B):
∴ Every man (C) is a stone (A).

In like manner, also, the conclusion will not be true if A is present with every B, and B with every C; and the proposition B C is assumed to be true; but the proposition A B wholly false, and that A is present with no individual with which B is present. For A was present with every C; since with whatever B was present, A also was present, but B was present with every C. It is evident, therefore, that when the first proposition is assumed wholly false, whether it be affirmative or privative, but the other proposition is true, a true conclusion will not be produced. If, however, the whole is not assumed to be false, there will be a true conclusion. For if A is present with every C, but with, a certain B, and B is present with every C; as for instance, animal

with every swan, but with, a certain whiteness, and whiteness with every swan; if it is assumed that A is present with every B, and B with every C, A also will truly be present with every C; for every swan is an animal.

Everything white (B) is an animal (A):
Every swan (C) is white (B):
∴ Every swan (C) is an animal (A).

In a similar manner also, the conclusion will be true if the proposition A B is privative. For A may be present with a certain B, but with no C, and B may be present with every C. Thus, animal may be present with something white, but with no snow; and whiteness may be present with all snow. If, therefore, it were assumed that A is present with no B, but that B is present with every C; A will be present with no C.

Nothing white (B) is an animal (A):
All snow (C) is white (B):
∴ No snow (C) is an animal (A).

But if the proposition A B were assumed wholly true; but the proposition B C wholly false; there will be a true syllogism. For nothing hinders A from being present with every B and every C, and yet B may be present with no C; as is the case with species of the same genus, but which are not subaltern. For animal is present both with horse and man; but horse is present with

no man. If, therefore, it is assumed that A is present with every B, and B with every C, the conclusion will be true, though the whole proposition B C is false.

Every horse (B) is an animal (A):
Every man (C) is a horse (B):
∴ Every man (C) is an animal (A).

The like will also take place, if the proposition A B is privative. For it will happen that A will be present neither with any B, nor with any C, and that B will be present with no C; as for instance, another genus with species which are from another genus. For animal is neither present with music, nor with medicine, nor is music present with medicine. If, therefore, it should be assumed that A is present with no B, but that B is present with every C, the conclusion will be true.

No music (B) is an animal (A):
All medicine (C) is music (B):
∴ No medicine (C) is an animal (A).

And if the proposition B C is not wholly but partially false, thus also the conclusion will be true. For nothing hinders A from being present with the whole of B and the whole of C, and B may be present with a certain C; as for instance, genus, with species and difference. For animal is present with every man, and with everything pedestrious; but man is present with something, and

not with everything, pedestrious. If, therefore, A were assumed to be present with every B, and B with every C; A also will be present with every C ; which is true.

Every man (B) is an animal (A):
Everything pedestrious (C) is a man (B):
∴ Everything pedestrious (C) is an animal (A).

The like will also take place if the proposition A B is privative. For it may happen that A is neither present with any B, nor with any C, and yet B may be present with a certain C; as genus with the species and difference which are from another genus. For animal is neither present with any prudence, nor with anything contemplative; but prudence is present with something contemplative. If, therefore, it were assumed that A is present with no B, and that B is present with every C; A will be present with no C. But this is true.

No prudence (B) is an animal (A):
All contemplative knowledge (C) is prudence (B):
∴ No contemplative knowledge (C) is an animal (A).

In partial syllogisms, however, when the whole of the first proposition is false, but the other is true, the conclusion may be true; likewise, when the proposition A B is partly false, but the proposition B C is wholly true; and when the proposition A B is true, but the partial proposition is false; and when both are false. For nothing hinders but that A may be present with no B, but may be present with a certain C, and also that B may be present with a certain C. Thus

animal is present with no snow, but is present with something white, and snow also is present with something white. If, therefore, snow is posited as the middle term, and animal as the first term; and if A is assumed to be present with the whole of B, and B with a certain C; the proposition A B will be wholly false; but the proposition B C will be true; and the conclusion will be true.

All snow (B) is an animal (A):
Something white (C) is snow (B):
∴ Something white (C) is an animal (A).

The like will also take place, if the proposition A. B is privative. For A may be present with the whole of B, and not be present with a certain C; but B may be present with a certain C. Thus, animal is present with every man, but is not consequent to something white; but man is present with something white. Hence, if man is posited as the middle term, and A is assumed to be present with no B, but B is assumed to be present with a certain C, the conclusion will be true, though the whole proposition A B is false.

No man (B) is an animal (A):
Something white (C) is a man (B):
∴ Something white (C) is not an animal (A).

And if the proposition A B is partly false, when the proposition B C is true, the conclusion will be true. For nothing hinders but that A may be present with B, and with a certain

C, and that B also may be present with a certain C. Thus, animal may be present with something beautiful, and with something great, and beauty also may be present with something great. If, therefore, it is assumed that A is present with every B, and B with a certain C; the proposition A B indeed, will be partly false; but the proposition B C will be true; and the conclusion will be true.

Everything beautiful (B) is an animal (A).
Something great (C) is beautiful (B):
∴ Something great (C) is an animal (A).

The like will also take place if the proposition A B is privative. For there will be the same terms, and they will be posited after the same manner, in order to the demonstration.

Nothing beautiful (B) is an animal (A):
Something great (C) is beautiful (B):
∴ Something great (C) is not an animal (A).

Again, if the proposition A B, indeed, is true, but the proposition B C false; the conclusion will be true. For nothing hinders but that A may be present with the whole of B, and with a certain C, and that B may be present with no C. Thus, animal is present with every swan, and with something black, but a swan is present with nothing black. Hence, if it is assumed that A is present with every B, and B with a certain C; the conclusion will be true, though the proposition B C is false.

Every swan (B) is an animal (A):

Something black (C) is a swan (B):

∴ Something black (C) is an animal (A).

The like will also take place, if the proposition A B is assumed to be privative. For A may be present with no B, and may not be present with a certain C, but B may be present with no C. Thus genus may be present with species which is from another genus, and with that which is an accident to its own species. For animal, indeed, is present with no number, and is present with something white, but number is present with nothing white. If, therefore, number is posited as the middle term and it is assumed that A is present with no B, but that B is present with a certain C; A will not be present with a certain C, which is true: and the proposition A B is true, but the proposition B C false.

No number (B) is an animal (A):

Something white (C) is number (B):

∴ Something white (C) is not an animal (A).

And if the proposition A B is partly false, and if the proposition B C is also false; the conclusion will be true. For nothing hinders but that A may be present with a certain B, and also with a certain C, but B with no C; as, if B should be contrary to C, but both should happen to the same genus. For animal is present with a certain something white, and with a certain something

black, but white is present with nothing black. If, therefore, it is assumed that A is present with every B, and B with a certain C, the conclusion will be true.

Everything white (B) is an animal (A):
Something black (C) is white (B):
∴ Something black (C) is an animal (A).

In a similar manner also, if the proposition A B is assumed to be privative. For the same terms may be assumed, and they may be posited in the same way, in order to the demonstration.

Nothing white (B) is an animal (A):
Something black (C) is white (B):
∴ Something black (C) is not an animal (A).

If also both the propositions are false in the whole, the conclusion will be true. For A may be present with no B, but may be present with a certain C, and B may be present with no C. Thus genus may be present with the species which is from another genus, and with that which happens to its own species. For animal is present with no number, but is present with something white, and number is present with nothing white. If, therefore, it is assumed that A is present with every B, and that B is present with a certain C; the conclusion, indeed, will be true, but both the propositions will be false.

Every number (B) is an animal (A):

Something white (C) is number (B):

∴ Something white (C) is an animal (A).

The like also will take place if the proposition A B is privative. For nothing hinders but that A may be present with the whole of B, but may not be present with a certain C, and that B may be present with no C. Thus animal is present with every swan, but is not present with something which is black; and swan is present with nothing black. Hence, if it is assumed that A is present with no B, but that B is present with a certain C; A will not be present with a certain C. The conclusion, therefore, will be true, but the propositions false.

No swan (B) is an animal (A):

Something black (C) is a swan (B):

∴ Something black (C) is not an animal (A).

Aristotle, Prior Analytics. Book II, Chapter 3

In the middle figure also, it is perfectly possible to deduce a true conclusion from false propositions; whether both the propositions are assumed wholly false; or one of them partly false; or one is true, but the other wholly false, whichever of them may be posited false; or whether both are partly false; or one is simply true, but the other partly false; or one is wholly false, but the other partly true, and that as well in universal as in partial syllogisms. For if A is present with no B, but with every C; as, animal is present with no stone, and is present with every horse; if the propositions are posited in a contrary way, and it is assumed that A is present with every B, but with no C; from propositions which are wholly false, the conclusion will be true.

Every stone (B) is an animal (A):
No horse (C) is an animal (B):
∴ No horse (C) is a stone (A).

The like will also take place, if A is present, indeed, with every B, but with no C; for there will be the same syllogism.

No horse (B) is an animal (A):
Every stone (C) is an animal (A):
∴ No stone (C) is a horse (B).

Again, if the one is wholly false, but the other wholly true. For nothing hinders but that A may be present with every B and with every C, and that B may be present with no C; as genus with species which are not subaltern. For animal is present with every horse and every man; and no man is a horse. If, therefore, it is assumed, that animal is present with every individual of the one, but with no individual of the other; the one proposition, indeed, will be wholly false, but the other wholly true; and the conclusion will be true, to whichever proposition negation is added.

Every horse (B) is an animal (A):
No man (C) is an animal (A):
∴ No man (C) is a horse (B).

No horse (B) is an animal (A):
Every man (C) is an animal (A):
∴ No man (C) is a horse (B).

Likewise, if the one is partly false; but the other wholly true. For if is possible that A may be present with a certain B, and with every C, and that B may be present with no C. Thus animal is present with something white, but with every crow, and whiteness is present with no crow. If, therefore, it is assumed that A is present with no B, but is present with the whole of C; the proposition A B, indeed, will be partly false; but the proposition A C will be wholly true: and the conclusion will be true.

Nothing white (B) is an animal (A):

Every crow (C) is an animal (A):

∴ No crow (C) is white (B).

And also when the privative is transposed; for the demonstration will be through the same terms.

Every crow (B) is an animal (A):

Nothing white (C) is an animal (A):

∴ Nothing white (C) is a crow (B).

Likewise, if the affirmative proposition is partly false, but the privative wholly true. For nothing hinders but that A may be present with a certain B, but may not be present with the whole of C, and that B may present with no C. Thus animal is present with something white, but with no pitch, and whiteness is present with no pitch. Hence, if it is assumed that A is present with the whole of B, but with no C; the proposition A B will be partly false; but the proposition A C will be wholly true ; and the conclusion will be true.

Everything white (B) is an animal (A):

No pitch (C) is an animal (A):

∴ No pitch (C) is white (B).

And if both the propositions arc partly false, the conclusion will be true. For A may be present with a certain B, and also with a certain C, but B may be present with no C. Thus animal may be present with something white, and with something black; but whiteness is present with nothing black. If, therefore, it is assumed that A is present with every B, but with no C, both the propositions will be partly false, but the conclusion will be true.

Everything white (B) is an animal (A):
Nothing black (C) is an animal (A):
∴ Nothing black (C) is white (B).

In like manner there will be a demonstration through the same terms, if the privative proposition is transposed.

Nothing white (B) is an animal (A):
Everything black (C) is an animal (A):
∴ Nothing black (C) is white (B).

It is also evident, that this may take place in partial syllogisms. For nothing hinders but that A may be present with every B, and with a certain C, and that B may not be present with a certain C. Thus animal is present, indeed, with every man, and with something white, but man may not be present with something white. If, therefore, it is posited that A is present, indeed, with no B, but is present with a certain C; the universal proposition will be wholly false; but the partial proposition will be true; and the conclusion will be true.

No man (B) is an animal (A):

Something white (C) is an animal (A):

∴ Something white (C) is not a man (B).

The like will also take place if the proposition A B is assumed affirmative. For A may be present with no B, and may not be present with a certain C. Thus animal is present with nothing inanimate, and is not present with something white; and the inanimate also is not present with something white. If, therefore, it is posited that A is present with every B, and is not present with a certain C; the universal proposition A B will be wholly false; but the proposition A C will be true; and the conclusion will be true.

Everything inanimate (B) is an animal (A).

Something white (C) is not an animal (A):

∴ Something white (C) is not inanimate (B).

Likewise, if the universal proposition, is posited true, and the partial, proposition false. For nothing hinders but that A may neither be consequent to any B, nor to any C, and that B may not be present with a certain C. Thus animal is consequent to no number, and to nothing inanimate, and number is not consequent to a certain thing which is inanimate. If, therefore, it is posited that A is present with no B, and with a certain C; the conclusion will, indeed, be true; and the universal proposition will be true; but the partial proposition will be false.

No number (B) is an animal (A):

Something inanimate (C) is an animal (A):

∴ Something inanimate (C) is not number (B).

And in a similar manner, if the universal proposition is posited affirmative. For A may be present with the whole of B, and with the whole of C, and yet B may not be consequent to a certain C; as genus is present with the whole of species and difference. For animal is consequent to every man, and to the whole of that which is pedestrious; but man is not consequent to everything pedestrious. Hence, if it is assumed that A is present with the whole of B, and is not present with a certain C; the universal proposition, indeed, will be true, but the partial proposition will be false; and the conclusion will be true.

Every man (B) is an animal (A):

Something pedestrious (C) is not an animal (A):

∴ Something pedestrious (C) is not a man (B).

It is also evident, that from both propositions when false, the conclusion will be true; if it happens that A is present with the whole of B, and the whole C, but B is not consequent to a certain C. For if it is assumed that A is present with no B, but is present with a certain C; both the propositions, indeed, will be false; but the conclusion will be true. In a similar manner also, if the universal proposition is categoric, but the partial proposition privative. For A may be consequent to no B, and to every C, and B may not be present with a certain C. Thus animal is consequent to no science, but is consequent to every man; and science is not consequent to every man. If,

therefore, it is assumed that A is present with the whole of B, and is not consequent to a certain C; the propositions will be false; but the conclusion will be true.

Every science (B) is an animal (A):

A certain man (C) is not an animal (A):

∴ A certain man (C) is not science (B).

Aristotle, Prior Analytics. Book II, Chapter 4

In the last figure also a true conclusion may be deduced from false propositions, when both the propositions are wholly false; or when each is partly false; or when the one is wholly true, but the other false; or when the one is partly false, but the other wholly true; or the contrary; and in as many other ways as it is possible to change the propositions. For nothing hinders but that neither A nor B may be present with any C, and yet B may be present with a certain C. Thus, neither man nor pedestrious is consequent to anything inanimate, and yet man is present with, something pedestrious. If, therefore, it is assumed that A and B are present with every C, the propositions, indeed, will be wholly false, but the conclusion will be true.

Everything inanimate (C) is a man (A):
Everything inanimate (C) is pedestrious (B):
∴ Something pedestrious (B) is a man (A).

In like manner also, if the one proposition is privative, but the other affirmative. For B may be present with no C, but A may be present with every C, and A may not be present with a certain B. Thus blackness is present with no swan, but animal is present with every swan, and animal is not present with everything black. Hence, if it is assumed that B is present with every C, but that A is present with no C, A will not be present with a certain B; and the conclusions will be true, but the propositions false.

No swan (C) is an animal (A):

Every swan (C) is black (B):

∴ Something black (B) is not an animal (A).

And if each proposition is partly false, the conclusion will be true. For nothing hinders but that A and B may be present with a certain C, and that A may be present with a certain B. Thus whiteness and beauty may be present with a certain animal, and whiteness may be present with something beautiful. If, therefore, it is posited that A and B, are present with every C; the propositions, indeed, will be partly false, but the conclusion will he true.

Every animal (C) is white (A):

Every animal (C) is beautiful (B):

∴ Something beautiful (B) is white (A).

And in a similar manner, if the proposition A C is posited privative. For nothing hinders but that A may not be present with a certain C, that B may be present with a certain C, and that A may not be present with every B. Thus whiteness is not present with a certain animal, but beauty is present with a certain animal, and whiteness is not present with everything beautiful. Hence, if it is assumed that A is present with no C, but that B is present with every C; both the propositions will be partly false, but the conclusion will be true.

No animal (C) is white (A):

No animal (C) is beautiful (B):

∴ Something beautiful (B) is not white (A).

The like will also take place, if the one proposition is assumed to be wholly false, but the other wholly true. For both A and B may be consequent to every C, but A may not be present with a certain C. Thus animal and whiteness are consequent to every swan, but animal is not present with everything white. These terms, therefore, being posited, if it is assumed that B is present with the whole of C, but that A is not present with the whole of C; the proposition B C will be wholly true; but the proposition A C will be wholly false; and the conclusion will he true.

No swan (C) is an animal (A):
Every swan (C) is white (B):
∴ Something white (B) is not an animal (A).

In a similar manner also, if B C is false, but A C true; for these terms, black, swan, inanimate, may be assumed in order to the demonstration. No swan is black: Every swan is inanimate: Therefore, Something inanimate is not black. This will likewise be the case if both the propositions are assumed affirmative. For nothing hinders but that B may be consequent to every C, but A may not be present with the whole of C, and A may be present with a certain B. Thus animal is present with every swan, but blackness is present with no swan, and blackness is present with a certain animal. Hence, if it is assumed that A and B are present with every C; the proposition B C will be wholly true, but the proposition A C will be wholly false; and the conclusion will be true.

Every swan (C) is black (A):

Every swan (C) is an animal (B):

∴ Some animal (B) is black (A).

The like will also take place, if the proposition A C is assumed; for the demonstration will be through the same terms.

Every swan (C) is an animal (A):

Every swan (C) is black (B):

∴ Something black (B) is an animal (A).

Again, this will be the case, if the one proposition is wholly true, but the other partly false. For B may be present with every C, but A may be present with a certain C, and A may also be present with a certain B. Thus biped is present with every man, but beauty is not present with every man, and beauty is present with a certain biped. If, therefore, it is assumed that A and B are present with the whole of C, the proposition B C will be wholly true; but the proposition A C will be partly false; and the conclusion will be true.

Every man (C) is beautiful (A):

Every man (C) is a biped (B):

∴ Some biped (B) is beautiful (A).

In a similar manner also, if the proposition A C is true, and the proposition B C, is assumed partly false. For the same terms being transposed, there will be a demonstration.

Every man (C) is a biped (A):
Every man (C) is beautiful (B):
∴ Something beautiful (B) is a biped (A).

And if the one proposition is privative, but the other affirmative. For since it is possible that B may be present with the whole of C, but A with a certain C only, when the terms thus subsist, A will not be present with every B. If, therefore, it is assumed that B is present with the whole of C, but A with no C, the privative proposition will be partly false, but the other will be wholly true; and the conclusion will be true. Again, since it has been shown, that A being present with no C, but B being present with a certain C, it is possible that A may not be present with a certain B; it is evident, that when the proposition A C is wholly true, and the proposition B C is partly false, it is possible that the conclusion may be true. For if it is assumed that A is present with no C, but that B is present with every C; the proposition A C will be wholly true; but the proposition B C partly false. But it is evident that in partial syllogisms also, there will entirely be a true conclusion through false propositions. For the same terms are to be assumed, which were assumed when the propositions were universal; viz. in categorical propositions categorical terms, but in privative propositions privative terms. For it is of no consequence, whether when a thing is present with no individual, it is assumed to be present with every individual; or whether, when it is present with a certain individual, it is universally assumed to be present with, or not present with, so far as pertains to the exposition of the terms. The like also takes place in privative

propositions. It appears, therefore, that when the conclusion is false, it is necessary that those things from which the reasoning consists, should either all, or some of them be false. But where the conclusion is true, it is not necessary either that a certain thing, or all things should be true; but it is possible, that when nothing is true in a syllogism, the conclusion may be similarly true, and yet not from necessity. The cause, however, of this is, that when two things so subsist with reference to each other, that when the one is, the other also necessarily is; if this is not, neither will the other be; but if it exists it is not necessary that the other should exist. But the same thing existing, and not existing, it is impossible that the same thing should be from necessity; as if A is white, that B is necessarily great; and if A is not white, that B is necessarily great. For when, this thing being white, as A, it is necessary that this thing should be great, as B; but B being great, it is necessary that C should not be white; it is necessary if A is white, that C should not be white. And when two things being proposed, if the one is, it is necessary that the other should be; this not existing, it is necessary that the first should not exist. Hence B, not being great, it is not possible that A can be white. But if when A is not white, it is necessary that B should be great; it will necessarily happen, that if B is not great, B itself is great. This, however, is impossible. For if B is not great, A will not be white from necessity. If, therefore, A not being white, B will be great, it will happen, as through three terms, that if B is not great, it is great.

If A is not white, B is great:

If B is not great, A is not white:

∴ If B is not great, it is great.

–which is impossible.

Aristotle, Prior Analytics. Book II, Chapter 5

To demonstrate, however, things in a circle, and from each other, is nothing else than through the conclusion, and receiving one proposition inverse in predication, to conclude the other proposition, which was assumed in the other syllogism. As if it were requisite to demonstrate that A is present with every C; but it is proved through B: again, if it should demonstrate that A is present with B, assuming that A is present with C, that C is present with B, and A with B. But first, on the contrary, it is assumed that B is present with C. Or if it were requisite to demonstrate that B is present with C, and it should be assumed that A is present with C, which was the conclusion; and that B is present with A. But it was first assumed, on the contrary, that A is present with B. It is not, however, otherwise possible to form a demonstration of them from each other. For whether another middle is assumed, there will not be a demonstration in a circle; for nothing of the same will be assumed; or whether something of these is assumed, it is necessary that one of them alone should be assumed. For if both, there will be the same conclusion, though it is necessary that there should be a different conclusion. In those terms, therefore, which are not converted from one undemonstrated proposition, a syllogism is produced. For it is not possible to demonstrate through these terms, that the third is present with the middle, or the middle with the first. But in those which reciprocate, it is possible to demonstrate all of them through each other; as if A, and B, and C, are converted into each other. For A C will be demonstrated through the middle B; and again, A B through the conclusion, and the proposition B C converted. In like manners also, BC is demonstrated through the conclusion, and the proposition A B inverse. But it is necessary to demonstrate the proposition C B, and the proposition B A; for we alone use these undemonstrated. If, therefore, it

were assumed that B is present with every C, and C with every A, there will be a syllogism of B with respect to A. Again, if it were assumed that C is present with every A, and A with every B, it is necessary that C should be present with every B. In both these syllogisms, therefore, the proposition A C is assumed undemonstrated; for the others were demonstrated. Hence, if we should demonstrate this, all of them will be demonstrated through each other. If, therefore, it should be assumed, that C is present with every B, and B with every A, both propositions will be assumed demonstrated, and it is necessary that C should be present with A. Hence it is evident, that in those propositions alone which are converted, demonstrations can be formed in a circle, and through each other; but in others, in the manner which we have before shown. But it also happens in these, that we use what has been demonstrated, in order to frame a demonstration. For C is demonstrated of B, and B of A, assuming that C is predicated of A; but C is demonstrated of A through these propositions. Hence we use the conclusion, in order to frame the demonstration. But in privative syllogisms, a demonstration through each other is effected as follows: Let B be present with every C, but let A be present with no B: the conclusion is, that A is present with no C. If, therefore, it is again necessary to conclude, that A is present with no B, which was assumed before; A, indeed, will be present with no C, but C will be present with every B. For thus the proposition becomes inverse. But if it is necessary to conclude that B is present with C, the proposition A B is no longer to be similarly converted. For it is the same proposition that B is present with no A, and that A is present with no B. It must be assumed, however, that B is present with every individual of that, with no individual of which A is present. Let A be present with no C, which was the conclusion. It is necessary, therefore, that B should be present with every C. Hence, since there are three assertions each becomes a conclusion. And to demonstrate in a circle is this, assuming the conclusion, and one proposition inverse, syllogistically to collect

the other. But in partial syllogisms, it is not possible to demonstrate the universal proposition through others, but it is possible thus to demonstrate the partial proposition. That it is not possible, therefore, to demonstrate the universal proposition is evident. For the universal is demonstrated through universal; but the conclusion is not universal; and it is necessary to demonstrate from the conclusion, and from the other proposition. Farther still, neither, in short, is a syllogism produced, when the proposition is converted; for both the propositions are effected in part. But it is possible to demonstrate a partial proposition. For let A be demonstrated of a certain C through B, If, therefore, it should be assumed that B is present with every A, and the conclusion should remain, B will be present with a certain C. For the first figure will be produced, and A will be the middle.

Every B is A:

Some C is B:

∴ Some C is A.

If, however, the syllogism is privative, it is not possible to demonstrate the universal proposition, for the reason which was before adduced. But a partial proposition cannot be demonstrated, if A B is similarly converted, as in universal propositions. It is possible, however, to demonstrate it through assumption; as, for instance, that A is not present with a certain thing, and that B is. But if the terms subsist otherwise, a syllogism will not be produced, because the partial proposition is negative.

Aristotle, Prior Analytics. Book II, Chapter 6

In the second figure, however, the affirmative proposition cannot be demonstrated after this manner, but the privative may. The affirmative, therefore, is not demonstrated, because not both the propositions are affirmative. For the conclusion is privative, but the affirmative is demonstrated from both the propositions being affirmative. But the privative proposition is thus demonstrated. Let A be present with every B, and, with no C. The conclusion is, that B is present with no C. If, therefore, it is assumed that B is present with every A, but with no C, it is necessary that A should be present with no C. For the second figure will be produced. The middle is B. But if the proposition A B were assumed privative, but the other proposition categoric; there will be the first figure. For C is present with every A, but B with no C. Hence neither is B present with any A. Neither, therefore, is A present with any B. The middle is C. Through the conclusion, therefore, and one proposition, a syllogism is not produced; but when the other proposition is assumed there will be a syllogism. If, therefore, the syllogism is not universal, the proposition which is in the whole, is not demonstrated, through that cause which we have mentioned before. But the partial proposition is demonstrated, when the universal is categoric. For let A be present with every B, but not with every C; the conclusion is, that B is not present with a certain C. If, therefore, it were assumed that B is present with every A, but not with every C; A will not be present with a certain C. The middle is B. But if the universal proposition is privative, the proposition A C will not be demonstrated, the proposition A C being converted. For it will happen that either both propositions, or that one proposition will be negative. Hence there will not be a syllogism. In a similar manner also, there will be a

demonstration, if it is assumed that with that with which B is partly not present, A is partly present.

Aristotle, Prior Analytics. Book II, Chapter 7

In the third figure, however, when both the propositions are assumed universally, a mutual and reciprocal demonstration cannot take place. For the universal is demonstrated through universals; but the conclusion in this figure, is always partial. Hence it is evident, that, in short, a universal proposition cannot be demonstrated through this figure. But if the one proposition is universal, and the other partial, a reciprocal demonstration will at one time be possible, and at another not. When, therefore, both the propositions arc assumed categoric, and universal is joined to the less extreme, it will be possible; but when to the other extreme it will not be possible. For let A be present with every C, but let B be present with a certain C; the conclusion will be A B. If, therefore, it should be assumed that C is present with every A, the universal proposition being converted; and that A is present with a certain B, which was the conclusion; C, indeed, is demonstrated to be present with a certain B; but B is not demonstrated to be present with a certain C. It is necessary, however, if C is present with a certain B, that B also should be present with a certain C. But it is not the same thing, for this thing to be present with that, and that with this; but it must be assumed that if this is partly present with that, that also is partly present with this. But this being assumed, a syllogism will no longer be produced from the conclusion, and the other proposition. If, however, B is present, indeed, with every C, but A with a certain C, it will be possible to demonstrate the proposition A C, when it is assumed that C is present with every B, but A with a certain B. For if C is present with every B, but A with a certain B, it is necessary that A should be present with a certain C. The middle is B. And when the one proposition is categoric, but the other privative, and the categoric is universal, the others may be demonstrated. For let B be present with every C, but let A not be present with a

certain C; the conclusion is, that A is not present with a certain B. If, therefore, it should be assumed that C is present with every B, but A was not present with every B, it is necessary that A should not be present with a certain C. The middle is B. But when the privative proposition is universal, the other proposition will not be demonstrated, unless as it was assumed in the former syllogisms, if it should be assumed, that the other is present with some individual of that, with every individual of which this is not present. As, if A, indeed, is present with no C, but B is present with a certain C, the conclusion is, that A is not present with a certain B. If, therefore, it should be assumed that C is present with some individual of that, with every individual of which A is not present, it is necessary that C should be present with a certain B. It is not, however, possible in any other way, when the universal proposition is converted, to demonstrate the other proposition; for there will by no means be a syllogism. It is evident, therefore, that in the first figure, a reciprocal demonstration is effected, through the first, and through the third figure. For when the conclusion is categoric, the reciprocal demonstration is through the first figure; but when it is privative, through the last figure. For let it be assumed that the other (i.e. the subject) is present with every individual of that with no individual of which this (i.e. the predicate) is present. But in the middle figure when the syllogism is universal, the demonstration is through it and through the first figure: and when it is partial, it is through it, and through the last figure. In the third figure, however, all the demonstrations are through the third figure. It is also evident, that in the middle and third figures, the syllogisms which are not produced through them, either are not according to a circular demonstration, or are imperfect.

Aristotle, Prior Analytics. Book II, Chapter 8

To convert, however, is, the conclusion being transposed, to produce a syllogism, either that the greater extreme is not present with the middle, or that this middle is not present with the last. For it is necessary, the conclusion being converted, and one proposition remaining, that the other proposition should be subverted; since if that proposition will be, the conclusion also will be. But it makes a difference whether the conclusion is converted oppositely, or contrarily. For the same syllogism is not produced, when the conclusion is converted either way. This, however, will be evident from what follows. But I say to be opposed, to every individual, and not to every individual, and to some individual, and not to some individual. And I call the being contrarily opposed, the being present with every individual, and with no individual, and the being present with a certain individual, and not with a certain individual. For let A be demonstrated of C, through the medium B. If, therefore, it were assumed that A is present with no C, but is present with every B, B will be present with no C. And if it were assumed that A is present with no C, but that B is present with every C, A will not be present with every B; but it cannot be concluded that it is, in short, present with no B; for universal is not demonstrated through the third figure. In short, it is not possible to subvert universally through conversion, the proposition which is joined to the greater extreme; for it is always subverted through the third figure. For it is necessary to assume both the propositions to the last extreme. And in a similar manner if the syllogism is privative. For let it be demonstrated through B, that A is present with no C. If, therefore, it were assumed that A is present with every C, but is present with no B; B will be present with no C. And if A and B are present with every C, A will be present with a certain B. But it was present with no B. If, however, the conclusion should be converted oppositely, other syllogisms also will

be opposite, and not universal. For one proposition will be partial; so that the conclusion also will be partial. For let the syllogism be categoric, and thus be converted. Hence, if A is not present with every C, but is present with every B; B will not be present with every C. And if A is not present with every C, but B is present with every C; A will not be present with every B. The like will also take place if the syllogism is privative. For if A is present with a certain C, but with no B; B will not be present with a certain C, and will not simply be present with no C. And if A is present with a certain C, but B is present with every C, as it was assumed in the beginning; A will be present with a certain B. But in partial syllogisms, when the conclusion is oppositely converted, both the propositions arc subverted; but when it is converted contrarily, neither of them is subverted. For it no longer happens as in universals, that a subversion is effected, the conclusion failing according to conversion; but neither, in short, can a subversion be effected. For let A be demonstrated of a certain C. If, therefore, it should be assumed that A is present with no C, but that B is present with a certain C, A will not be present with a certain B. And if A is present with no C, but is present with every B; B will be present with no C. Hence both the propositions are subverted. If, however, the conclusion is contrarily converted, neither proposition is subverted. For if A is not present with a certain C, but is present with every B; B will not be present with a certain C. That, however, which was proposed from the first, is not yet subverted; for it may be present with a certain individual, and with a certain individual not be present. But of the universal proposition A B, there will not, in short, be a syllogism. For if A is not present with a certain C, but is present with a certain B, neither of the propositions is universal. The like will also take place if the syllogism is privative. For if it should be assumed that A is present with every C, both the propositions would be subverted ; but if it should be

assumed that A is present with a certain, neither of them would be subverted. The demonstration, however, is the same.

Aristotle, Prior Analytics. Book II, Chapter 9

But in the second figure, it is not possible to subvert contrarily the proposition which is joined to the greater extreme, in whatever way the conversion may be effected. For the conclusion will always be in the third figure; but there was not in this figure a universal syllogism. And we subvert the other proposition in a manner similar to that in which the conversion was made. But I say similarly, if, indeed, the conversion is made contrarily, it will be subverted contrarily; but if oppositely, in an opposite manner. For let A be present with every B, but with no C; the conclusion is B C. If, therefore, it should be assumed, that B is present with every C, and the proposition A B should remain; A will be present with every C. For the first figure will be produced. But if B is present with every C, and A with no C: A will not be present with every B. The figure is the last. If, however, the conclusion B C should be oppositely converted; the proposition A B may be similarly demonstrated; but the proposition A C oppositely. For if B is present with a certain C, but A with no C; A will not be present with a certain B. Again, if B is present with a certain C, but A with every B; A will be present with a certain C. Hence the syllogism will be produced in an opposite way. There will also be a demonstration in a similar manner, if the propositions should subsist vice versa. But if the syllogism is partial, the conclusion being converted contrarily, neither of the propositions is subverted, as neither was there a subversion of either in the first figure. If, however, the conclusion is oppositely converted both are subverted. For let it be posited that A is present with no B, but is present with a certain C; the conclusion is B C. If, therefore, it were posited that B is present with a certain C; and the proposition A B should remain; the conclusion will be, that A is not present with a certain C. That, however, which was proposed from the first will not be

subverted; for it may be present, and not be present with a certain individual. Again, if B is present with a certain C, and A is present with a certain C, there will not be a syllogism; for neither of the assumed propositions is universal. Hence, neither is the proposition A B subverted. But if it should be oppositely converted, both the propositions are subverted. For if B is present with every C, but A is present with no B; A will be present with no C. It was, however, present with a certain C. Again, if B is present with every C, but A is present with a certain C; A will be present with a certain B. There will also be the same demonstration, if the universal proposition should be categoric.

Aristotle, Prior Analytics. Book II, Chapter 10

But in the third figure, when the conclusion is converted contrarily neither of the propositions is subverted, according to no one of the syllogisms. When, however, the conclusion is converted oppositely, both are subverted, and in all syllogisms. For let it be shown that A is present with a certain B, and let C be assumed as the middle. Let also the propositions be universal. If, therefore, it should be assumed that A is not present with a certain B, but that B is present with every C, a syllogism will not be produced of A and C. Neither if A, indeed, is not present with a certain B, but is present with every C, will there be a syllogism of B and of C. There will also be a similar demonstration, if the propositions are not universal. For either it is necessary that both should be partial, through conversion, or that universal should be joined to the less extreme: but thus there was not a syllogism, neither in the first, nor in the middle figure. But if the propositions are oppositely converted, both will be subverted. For if A is present with no B, but B is present with every C; A will be present with no C. Again, if A is present with no B, but is present with every C; B will be present with no C. The like will also take place if one of the propositions is not universal. For if A is present with no B, but B is present with a certain C; A will not be present with a certain C. But if A is present with no B, but is present with every C; B will be present with no C. In a similar manner also if the syllogism is privative. For let it be demonstrated that A is not present with a certain B; and let the categoric proposition be B C, but the negative AC; for thus a syllogism was produced. When, therefore, the proposition is assumed contrary to the conclusion there will not be a syllogism. For if A was present with a certain B, but B was present with every C, there was not a syllogism of A and of C. Nor if A was present with a certain B, but with no C, was there a syllogism of B and of C. Hence the propositions are

not subverted. When, however, the opposite is assumed, the propositions are subverted. For if A is present with every B, and B is present with every C; A will be present with every C. But it was present with no C. Again, if A is present with every B, but is present with no C; B will be present with no C. But it was pre sent with every C. There will also be a similar demonstration if the propositions are not universal. For A C becomes universal and privative; but the other proposition is partial and categoric. If, therefore, A is present with every B, but B is present with a certain C; A will happen to a certain C. But it was present with no C. Again, if A is present with every B, but with no C; B will be present with no C. It was posited, however, to be present with a certain C. But if A is present with a certain B, and B with a certain C, there will not be a syllogism. Nor if A is present with a certain B, but with no C; neither thus will there be a syllogism. Hence in that way, indeed, but not in this, the propositions are subverted. From what has been said, therefore, it is evident, how the conclusion being converted, a syllogism will be produced in each figure; and when contrarily, and when oppositely to the proposition. It is also evident, that in the first figure syllogisms are produced through the middle and the last; and that the proposition, indeed, which is joined to the less extreme, is always subverted through the middle figure; but that the proposition which is joined to the greater extreme, is subverted through the last figure. But in the second figure, through the first, and the last. And the proposition, indeed, which is joined to the less extreme, is always subverted through the first figure; but that which is joined to the greater extreme, is always subverted through the last figure. But in the third figure, through the first, and the middle. And the proposition, indeed, which is joined to the greater extreme, is always subverted through the first, but that which is joined to the less extreme, through the middle figure. What, therefore, it is to convert, and how this is effected in each figure, and what syllogism is produced, is evident.

Aristotle, Prior Analytics. Book II, Chapter 11

A syllogism, however, through the impossible is exhibited, when the contradiction of the conclusion is posited, and another proposition is assumed. But it is produced in all the figures; for it is similar to conversion. Except that it thus much differs, that it is converted indeed, a syllogism being made, and both the propositions being assumed; but it is deduced to the impossible, when the opposite is not previously acknowledged, but is manifestly true. But the terms subsist similarly in both, and the assumption of both is the same. Thus, for instance, if A is present with every B, but the middle is C, if it should be supposed that A, either is not present with every, or is present with no B, but is present with every C, which was true, it is necessary that C should be present with no B, or not with every B. But this is impossible. Hence that which was supposed is false. The opposite, therefore, is true. The like will also take place in other figures; for such things as receive conversion, receive also a syllogism which is constructed through the impossible. All other problems, therefore, are demonstrated through the impossible in all the figures; but the categoric universal, is demonstrated, indeed, in the middle, and in the third figure, but is not demonstrated in the first figure. For let it be supposed that A is not present with every B, or is present with no B, and let the other proposition be assumed from either part, whether that C is present with every A, or B with every D; for thus there will be the first figure. If, therefore, it is supposed that A is not present with every B, a syllogism will not be produced, the proposition being assumed from either part. But if it is supposed that A is present with no B; when the proposition B D is assumed, there will be a syllogism, indeed of the false, yet the thing proposed will not be demonstrated. For if A is present with no B, but B is present with every D, A will be present with no D. But let this be impossible. It is false, therefore, that A is present

with no B. If, however, it is false, that it is present with no B, it does not follow that it is true, that it is present with every B. But if the proposition C A is assumed, a syllogism is not produced. Neither is a syllogism produced, when it is supposed that A is not present with every B. Hence it is evident, that the being present with every individual, is not demonstrated in the first figure through the impossible. But to be present with a certain individual, and with no individual, and not with every individual, is demonstrated. For let it be supposed that A is present with no B; but let B be assumed to be present with every, or with a certain C. It is necessary, therefore, that A should not be present with every or should be present with no C. But this is impossible. For let this be true and manifest, that A is present with every C. Hence if this is false, it is necessary that A should be present with a certain B. But if one of the propositions should be assumed toward A, there will not be a syllogism. Nor will there be when it is supposed contrary to the conclusion, as, for instance, not to be present with a certain individual. It is evident, therefore, that the opposite must be made the hypothesis. Again, let it be supposed that A is present with a certain B, and let it be assumed that C is present with every A. It is necessary, therefore, that C should be present with a certain B. But let this be impossible. Hence, that which was supposed is false. But if this be the case, it is true that A is present with no B. The like will also take place if the proposition C A were assumed privative. But if the proposition were assumed toward B, there will not be a syllogism. If, however, the contrary were supposed, there will, indeed, be a syllogism, and the impossible will be demonstrated; but that which was proposed will not be proved. For let it be supposed that A is present with every B; and let it be assumed that C is present with every A. It is necessary, therefore, that C should be present with every B. But this is impossible. Hence it is false that A is present with every B; but it is not yet necessary, that if it is not present with every, it is present with no B. The like will also take place if to B the other

proposition is assumed; for there will be a syllogism, and the impossible will be proved. The hypothesis, however, is not subverted; so that the opposite must be supposed. But in order to prove that A is not present with every B, it must be supposed that it is present with every B. For if A is present with every B, and C is present with every A; C will be present with every B. Hence if this is impossible, that which was supposed is false. The like will also take place if the other proposition is assumed to B. And in a similar manner, if the proposition C A is privative; for thus also a syllogism is produced. But if the privative proposition is joined to B, nothing is demonstrated. If, however, it should not be supposed to be present with every, but with a certain individual, it will not be demonstrated, that it is not present with every individual, but that it is present with no individual. For if A is present with a certain B, but C is present with every A; C will be present with a certain B. If, therefore, this is impossible, it is false that A is present with a certain B. Hence it is true that it is present with no B. But this being demonstrated, that which is true is al the same time subverted. For A was present with a certain B, and with a certain B was not present. Farther still, the hypothesis does not happen on account of the hypothesis; for it will be false; since it is not possible to conclude the false from the true. Now, however, it is true; for A is present with a certain B. Hence it must not be supposed that A is present with a certain, but with every B. The like will also take place if we should demonstrate that A is not present with a certain B. For if it is the same thing not to be present with a certain individual, and not to be present with every individual, there is the same demonstration of both. It is evident, therefore, that not the contrary, but the opposite must be supposed in all syllogisms; for thus there will be a necessity of concluding, and the probable axiom. For if affirmation or negation is true of everything; when it is shown that negation is not true, it is necessary that affirmation should be true. Again, unless it is admitted that affirmation is true, it must be admitted that negation is

probable. But the contrary must be considered as in neither way adapted. For neither if the being present with no individual is false, is it necessary that the being present with every individual is true, nor is it probable, that if the one is false, the others is true. It is evident, therefore, that in the first figure, all other problems are demonstrated, through the impossible, but that the universal affirmative is not demonstrated.

Aristotle, Prior Analytics. Book II, Chapter 12

In the middle, however, and last figure, this also is demonstrated. For let it be supposed that A is not present with every B; and let it be assumed that A is present with every C. Hence if A is not present with every B, but is present with every C; C is not present with every B. This, however, is impossible. For let it be manifest that C is present with every B. Hence that which was supposed is false. The being present with every individual, therefore, is true. But if the contrary should be supposed, there will be a syllogism, indeed, and the impossible will be proved; yet the thing proposed will not be demonstrated. For if A is present with no B, but is present with every C; C will be present with no B. But this is impossible. Hence it is false that A is present with no B. It does not, however, follow that if this is false, it is true that it is present with every B. But when A is present with a certain B, let it be supposed that A is present with no B, and that it is present with every C. It is necessary, therefore, that C should be present with no B. Hence, if this is impossible, it is necessary that A should be present with a certain B. But if it should be supposed that A is not present with a certain B, there will be the same things as in the first figure. Again, let it be supposed that A is present with a certain B; but let it be present with no C. It is necessary, therefore, that C should not be present with a certain B. But it was present with every C. Hence that which was supposed is false. A, therefore, will be present with no B. But when A is not present with every B; let it be supposed to be present with every B, but with no C. It is necessary, therefore, that C should be present with no B. But this is impossible. Hence it is true, that A is not present with every B. It is evident, therefore, that all the syllogisms are produced through the middle figure.

Aristotle, Prior Analytics. Book II, Chapter 13

In a similar manner also it may be concluded through the last figure. For let it be posited that A is not present with a certain B, but that C is present with every B. A, therefore, will not be present with a certain C. If, therefore, this is impossible, it is false that A is not present with a certain B; so that it is true that it is present with every B. But if it should be supposed that it is present with no B; there will, indeed, be a syllogism, and the impossible will be proved, but the thing proposed will not be demonstrated. For if the contrary should be supposed, there will be the same things as in the former syllogisms. But for the purpose of concluding that A is present with a certain B, this hypothesis is to be assumed. For if A is present with no B, but C is present with a certain B, A will not be present with every C. If, therefore, this is false, it is true that A is present with a certain B. But when A is present with no B, let it be supposed to be present with a certain B. And let it be assumed that C is present with every A. It is necessary, therefore, that A should be present with a certain C. But it was present with no C. Hence it is false that A is present with a certain B. But if it should be supposed that A is present with every B, the thing proposed will not be demonstrated. In order, however, to conclude that a thing is not present with every individual, this hypothesis is to be assumed. For if A is present with every B, and C is present with a certain B; A is present with a certain C. But this was not true. Hence it is false that A is present with every B. And if this be the case, it is true that it is not present with every B. But if it should be supposed that it is present with a certain B; there will be the same things as in the before-mentioned syllogisms. It is evident, therefore, that in all syllogisms which are constructed through the impossible, that which is opposite must be supposed. But it is evident, that in the

middle figure also, the affirmative may in a certain respect be demonstrated, and in the last figure, the universal.

Aristotle, Prior Analytics. Book II, Chapter 14

But a demonstration leading to the impossible differs from an ostensive demonstration because it admits that which it wishes to subvert, leading to an acknowledged falsehood ; but an ostensive demonstration begins from acknowledged positions. Both demonstrations, therefore, assume two acknowledged propositions; but the one assumes those from which a syllogism is produced; and the other one of these, and the contradiction of the conclusion. In the one also it is not necessary that the conclusion should be known, nor previously to assume that it is, or that it is not; but in the other it is necessary, previously to assume that it is not. It is, however, of no consequence, whether the conclusion is affirmation, or negation; but the like will take place about both. But everything which is concluded ostensively, may also be demonstrated through the impossible; and that which is concluded through the impossible, may also be demonstrated ostensively; and through the same terms, but not in the same figures. For when the syllogism is produced in the first figure, the truths will be either in the middle, or in the last figure; the privative, indeed, in the middle, but the categoric in the last figure. But when the syllogism is in the middle figure, the truth will be in the first figure, in all the problems. But when the syllogism is in the last figure, the truth will be in the first, and in the middle figure; things affirmative in the first, but things privative in the middle figure. For let it be demonstrated through the first figure, that A is present with no, or not with every B. The hypothesis, therefore, was, that A is present with a certain B; but C was assumed to be present, indeed, with every A, but with no B. For thus a syllogism, and the impossible were produced. But this is the middle figure, if C is present with every A, but with no B. And it is evident from these things, that A is present with no B. The like will also take place if the not being present with every individual is demonstrated. For the

hypothesis is, to be present with every individual; but C was assumed to be present with every A, but not with every B. In a similar manner also, if the proposition C A should be assumed to be privative for thus also the middle figure will be produced. Again, let it be shown that A is present with a certain B. The hypothesis, therefore, is, that A is present with no B. But B was assumed to be present with every C; and A to be present with every, or a certain C. For thus the conclusion will be impossible. But this is the last figure, if A and B are present with every C. And from these things it is evident, that it is necessary A should be present with a certain B. The like will also take place if it should be assumed that B or A is present with a certain C. Again, in the middle figure also, let it be shown, that A is present with every B. The hypothesis, therefore, was, that A is not present with every B. But it was assumed, that A is present with every C, and that C is present with every B; for thus there will be the impossible. And this is the first figure if A is present with every C, and C is present with every B. The like will also take place if the being present with a certain individual is demonstrated. For the hypothesis was, that A is present with no B. But it was assumed that A is present with every C, and that C is present with a certain B. If, however, the syllogism should be privative, the hypothesis was, that A is present with a certain B. But it was also assumed that A is present with no C, and that C is present with every B. Hence the first figure is produced. In like manner also, if the syllogism s should not be universal, but A is demonstrated not to be present with a certain B. For the hypothesis was, that A is present with every B; but it was assumed, that A is present with no C, and that C is present with a certain B. For thus the first figure is produced. Again, in the third figure, let it be shown, that A is present with every B. The hypothesis, therefore, was, that A is not present with every B; but it was assumed, that C is present with every B, and that A is present with every C. For thus there will be the impossible. But this is the first figure. In a similar manner also, if the

demonstration is in a certain thing. For the hypothesis will be, that A is present with no B; but it is assumed, that C is present with a certain B, and that A is present with every C. But if the syllogism is privative, the hypothesis is, that A is present with a certain B; but it is assumed that C is present with no A, and that it is present with every B. But this is the middle figure. The like will also take place if the demonstration is not universal. For the hypothesis will be, that A is present with every B; and it is assumed, that C is present with no A, and is present with a certain B. But this is the middle figure. It is evident, therefore, that each of the problems may be demonstrated through the same terms, both ostensively, and through the impossible. In like manner also, it will be possible, when the syllogisms are ostensive, to form a deduction to the impossible, in those terms which are assumed, when the proposition is assumed opposite to the conclusion. For the same syllogisms will be formed, as those which are produced through conversion; so that we shall also immediately have figures, through which each problem will conclude. It is evident, therefore, that every problem is demonstrated according to both modes, i.e. through the impossible, and ostensively; and that it is not possible for the one mode to be separated from the other.

Aristotle, Prior Analytics. Book II, Chapter 15

In what figure, however, it is possible, and in what it is not possible to syllogize from opposite propositions, will he manifest as follows: But I say that opposite propositions are according to diction four; as, for instance, to be present with every individual, to be present with no individual; to be present with every individual, to be present not with every individual; to be present with a certain individual, to be present with no individual; and to be present with a certain individual, and to be present not with a certain individual. In reality, however, the opposite propositions arc three; for to be present with a certain individual, is opposed to the being present not with a certain individual, according to diction only. But of these I call those which are universal, contraries, i.e. to be present with every individual, and to be present with no individual; as, for instance, that every science is worthy, and that no science is worthy: but I call the others opposites. In the first figure, therefore, there is not a syllogism from opposite propositions, neither affirmative, nor negative. Not from affirmative propositions, indeed, because it is necessary that both the propositions should be affirmative; but affirmation and negation are opposites. Nor can there be a syllogism from privative propositions; because opposites affirm and deny the same thing of the same; but the middle in the first figure is not predicated of both the extremes, but one thing is denied of it, and it is predicated of another. These propositions, however, are not opposed. But in the middle figure a syllogism may be produced from opposites and from contraries. For let good be A; but science B and C. If, therefore, it should be assumed that every science is worthy, and also that no science is worthy; A will be present with every B, and with no C; so that B will be present with no C. No science, therefore, is science.

Every science is worthy:

No science is worthy:

∴ No science is science.

The like will also take place, if when it is assumed that every science, is worthy, it should afterwards be assumed that medicine is not worthy. For A is present with every B, but with no C. Hence a certain science will not be science.

Every science is worthy:

No medicine (which is a certain science) is worthy:

∴ No medicine (which is a certain science) is science.

Likewise, if A is present with every C, but with no B. But B is science; C, medicine; A, opinion. For assuming that no science is opinion, it will be assumed that a certain science is opinion.

No science is opinion:

All medicine (which is a certain science) is opinion:

∴ No medicine (which is a certain science) is science.

This mode, however, differs from the former, on account of the conversion made in the terms; for before, affirmation was joined to B, but now it is joined to C. In a similar manner also,

if one of the propositions is not universal. For it is always the middle, which is predicated negatively of the one, and affirmatively of the other. Hence it happens that opposites are concluded; yet not always, nor entirely; but when those things which are under the middle so subsist, as that they are either the same, or are related as a whole to a part. In any other way this is impossible; for the propositions will by no means be either contrary or opposite. But in the third figure, an affirmative syllogism will never be from opposite propositions, for the reason before-mentioned in the first figure. There will, however, be a negative syllogism, whether the terms are universally, or not universally assumed. For let science be B and C; and medicine A. If, therefore, it should be assumed that all medicine is science, and that no medicine is science, B will be assumed to be present with every A, and C with no A. Hence a certain science will not be science.

No medicine is science:
All medicine is science:
∴ A certain science is not science.

The like will also take place, if the proposition A B were not assumed universal. For if a certain medicine is science, and again, no medicine is science; it will happen that a certain science is not science.

A certain medicine (A) is not science (B).
All medicine (A) is science (C):
∴ A certain science (C) is not science (B).

But the propositions are contrary, the terms being universally assumed; though if one of them is partial they arc opposite. It is necessary, however, to understand, that opposites may be assumed in the manner we have mentioned, as that every science is worthy, and again, that no science is worthy, or that a certain science is not worthy, which is not wont to be latent. It is also possible through other interrogations, that the other part of contradiction maybe concluded; or as we have observed in the Topics, may be assumed. But since the oppositions of affirmations are three, it happens that opposites are assumed in six ways, either in every and no individual, or in every and not in every individual, or in a certain, and in no individual: and this may be converted in the terms. Thus A may be present with every B, but with no C; or may be present with every C and with no B; or with the whole of the one, and not with the whole of the other. And this again may be converted according to the terms. The like will also take place in the third figure. Hence it is evident in how many ways, and in what figures it happens that a syllogism is produced through opposite propositions. But it is also evident, that the truth may be syllogistically concluded from false propositions, as has been before observed. From opposites, however, it cannot be concluded; for a syllogism will always be produced contrary to the thing. Thus, if a thing is good it will be concluded that it is not good; or if it is an animal, that it is not an animal; because the syllogism is from contradiction; and the subject terms are either the same, or the one is a whole, but the other a part. It is also manifest, that in paralogisms, nothing hinders but that there may be a contradiction of the hypothesis; as, if a thing is an odd number, it is not an odd number. For the syllogism from opposite propositions was contrary. If, therefore, such are assumed, there will be a contradiction of the hypothesis. But it is necessary to understand, that contraries cannot be so concluded from one syllogism, as that the conclusion may be, that which

is not good is good, or anything else of this kind, unless such a proposition is immediately assumed; as, for instance, that every animal is white and not white, and that man is an animal. For it is necessary either previously to assume contradiction; as that all science is opinion, and is not opinion, and afterwards to assume from it that medicine is a science, indeed, but is no opinion; just as elenchi are produced, or to conclude from two syllogisms. It is not, however, possible that the things assumed should in reality be contrary in any other way than this, as has been before observed.

Aristotle, Prior Analytics. Book II, Chapter 16

To beg, however, and assume the question in the beginning consists, that I may take genus of it, in not demonstrating the thing proposed. But this happens in many ways; whether, in short, there is not a conclusion, or whether the conclusion is through things more unknown, or similarly unknown, or whether that which is prior is through things posterior. For demonstration is from things more credible and prior. Of these modes, therefore, there is begging the question proposed from the beginning. Since, however, somethings are naturally adapted to be known through themselves, but others through other things; (for principles are known through themselves, but the things contained under the principles, are known through other things) when any one endeavors to demonstrate through itself, that which cannot be known through itself, then he begs that which was proposed from the beginning, This, however, may take place in such a manner, as that the thing proposed may be immediately postulated. It also happens, that passing to certain other things, which are naturally adapted to be demonstrated through that thing, that which was investigated from the beginning is through these demonstrated. As if A should be demonstrated through B, and B through C; but C is naturally adapted to be demonstrated through A. For it happens that A will be demonstrated through itself, by those who thus syllogize; which is effected, indeed, by those, who fancy that they describe parallel lines. For they deceive themselves, assuming such things as cannot be demonstrated, unless they are parallel. Hence it happens to those who thus syllogize, that they say, each thing is, if each thing is. But thus everything will be known through itself, which is impossible. If, therefore, some one, when it is immanifest that A is present with C, and in a similar manner that A is present with B, begs it may be granted him that A is present with B; it is not yet evident whether he begs the question

proposed from the beginning; but it is evident that he does not demonstrate; for that which is similarly immanifest, is not the principle of demonstration. But if B so subsists with reference to C, as that they are the same, or it is evident that these are converted, or that the one is present with the other, then the thing investigated in the beginning is made the object of petition. For that A is present with B may be demonstrated through them, if they are converted. Now, however, this prevents but not the mode. But if it should do this, it will effect what has been mentioned, and a conversion will be made as through three terms. In like manner, if any one should assume that B is present with C, since it is similarly immanifest, as if he should assume that A is present with C; he does not yet beg the question from the beginning, but he does not demonstrate. If, how ever, A and B should be the same, or should be converted, or A should be consequent to B, he will beg the question from the beginning, through the same cause. For what begging the question from the beginning is capable of effecting, we have before shown, viz. that it is to demonstrate a thing through itself, which is not through itself manifest. If, therefore, to beg the question in the beginning, is nothing else than to demonstrate of a thing through itself, that which is not through itself manifest; but this is not to demonstrate, since the thing demonstrated, and that through which it is demonstrated, are similarly immanifest, either because the same things are assumed to be present with the same thing, or the same thing with the same things; if this be the case, in the middle figure, and also in the third, the thing investigated from the beginning, may in each way be similarly the subject of petition. But in a categoric syllogism, the question is the subject of petition in the third and first figure only; and negatively, when the same things are absent from the same thing, and both the propositions do not subsist similarly (the like also takes place in the middle figure) because the terms are not converted in negative syllogisms. To beg the question, however, in the beginning, takes place in demonstrations, when things which thus

subsist in reality, are the subjects of petition; but in dialectic syllogisms when those things are requested to be granted, which appear thus to subsist according to opinion.

Aristotle, Prior Analytics. Book II, Chapter 17

But that the false does not happen on account of this, (which in discussions we are frequently accustomed to say) is first found to be the case in syllogisms leading to the impossible, when any one contradicts that which another demonstrates by a deduction to the impossible. For neither will he who does not contradict, assert that, not on this account, but he will contend that it is something false, from those things which were before posited; nor in an ostensive proof; for he does not adduce contradiction. Farther still, when anything is ostensively subverted through ABC, it cannot be said that a syllogism is produced on account of that which is posited. For we then say that is not produced on account of this, when this being subverted, the syllogism is nevertheless completed; which is not the case in ostensive syllogisms. For the position being subverted, the syllogism will no longer subsist which pertains to it. It is evident, therefore, that in syllogisms leading to the impossible, that is asserted not on account of this; and when the hypothesis from the beginning so subsists with reference to the impossible, that both when it is, and when it is not, the impossible will nevertheless happen. Hence the most apparent mode of the false not subsisting on account of the hypothesis, is, when the syllogism produced from media leading to the impossible, is unconjoined with the hypothesis, as we have also observed in the Topics. For this it is, to assume that which is not a cause, as a cause; just as if any one wishing to show that the diameter of a square is incommensurable with its side, should endeavor to demonstrate the argument of Zeno, that motion has no existence, and to this should deduce the impossible. For the false is by no means whatever in continuity, with that which was asserted from the beginning. But there is another mode, if the impossible should be in continuity with the hypothesis, yet it does not happen on account of that. For this may take place, whether

the continuity is assumed upward or downward; as if A should be posited to be present with B; B with C; and C with D; but this should be false, that B is present with D. For if A being subverted, B is nevertheless present with C, and C with D, there will not be the false from the hypothesis assumed from the beginning. Or again, if some one should assume the continuity in an upward direction; as if A should be present with B, E with A, and F with E; but it should be false that F is present with A. For thus there will no less be the impossible, the hypothesis being subverted assumed from the beginning. It is necessary, however, to conjoin the impossible with the terms assumed from the beginning; for thus it will be on account of the hypothesis. Thus when the continuity is assumed in a downward direction, it ought to be conjoined with the categoric term. For if it is impossible that A should be present with D; A being taken away, there will no longer be the false. But the continuity being assumed in an upward direction, it ought to be conjoined with the subject term. For if F cannot be present with B; B being subverted, there will no longer be the impossible. The like also takes place when the syllogisms are privative. It is evident, therefore, that unless the impossible is conjoined with the terms assumed from the beginning, the false will not happen on account of the position. Or shall we say that neither thus will there be the false on account of the hypothesis? For if A is posited to be present not with B, but with K, and K with C, and this with D; thus also the impossible will remain. The like will also take place, when the terms are assumed in an upward direction. Since, therefore, the impossible will happen, whether this is, or is not; it will not be on account of the position. Or if this is not, the false nevertheless is produced; it ought not to be so assumed as if something else being posited the impossible will happen; but when this being subverted, the same impossible is concluded, through the remaining propositions. For perhaps there is no absurdity, that the false should be

inferred through many hypotheses; as that parallel lines will meet, whether the internal angle is greater than the external, or whether a triangle has more than two right angles.

Aristotle, Prior Analytics. Book II, Chapter 18

False reasoning, however, is produced, on account of that which is primarily false. For every syllogism consists either from two, or from more than two propositions. If, therefore, it consists from two propositions, it is necessary that one, or both of these should be false; for there will not be a false syllogism from true propositions. But if it consists of more than two propositions, as if C should be demonstrated through A B, but these through D E F G; in this case, some one of the above is false; and on this account the reasoning is false. For A and B are concluded through them. Hence through some one of them, the conclusion and the false happen to take place.

Aristotle, Prior Analytics. Book II, Chapter 19

In order, however, to prevent a syllogistical conclusion being adduced against us, we must observe when our opponent interrogates the argument without conclusions, lest the same thing should be twice conceded in the propositions; since we know that a syllogism is not produced without a middle, and a middle is that of which we have frequently spoken. But in what manner it is necessary to observe the middle with respect to every conclusion, is evident from knowing what kind of thing is demonstrated in each figure. And of this we shall not be ignorant, in consequence of knowing how we sustain the disputation. It is, however, requisite when we argue, that we should endeavor to conceal that which we have ordered the respondent to guard against. But this will be effected in the first place, indeed, if the conclusions are not pre-syllogized, but are immanifest, when the necessary propositions are assumed. Again, this will also be effected if things proximate are not made the subjects of interrogation, but such as are especially media. For instance, let it be requisite to conclude A of F; and let the media be B C D E. It is necessary, therefore, to interrogate, whether A is present with B, and again, not whether B is present with C, but whether D is present with E; and afterwards whether B is present with C; and so of the rest. If also the syllogism should be produced through one middle, it is necessary to begin from the middle; for thus especially the respondent may be deceived.

Aristotle, Prior Analytics. Book II, Chapter 20

But since we have when, and in what manner the terms subsisting, a syllogism is produced, it is also evident when, and when there will not be an elenchus. For all things being conceded, or the answers being posited alternately (as, for instance, the one being affirmative, and the other negative) an elenchus may be produced. For there was a syllogism, the terms subsisting, as well in this, as in that way. Hence, if that which is posited, should be contrary to the conclusion, it is necessary that an elenchus should be produced; for an elenchus is a syllogism of contradiction. But if nothing should be granted, it is impossible that an elenchus should be produced; for there was not a syllogism when all the terms are privative; so that neither will there be any elenchus. For if there is an elenchus, it is necessary there should be a syllogism; but if there is a syllogism, it is not necessary there should be an elenchus. The like will also take place, if nothing according to the interrogation should be posited in the whole; for there will be the same determination of the elenchus and the syllogism.

Aristotle, Prior Analytics. Book II, Chapter 21

It sometimes happens, however, that as we are deceived in the position of the terms, thus also deception is produced according to opinion; as if it should happen that the same thing, is primarily present with manythings, and some one should be ignorant of one of these, and should fancy that it is present with no individual, but should know the other. For let A be essentially present with B and with C, and let these be present with every D. If, therefore, some one should fancy that A is present with every B, and this with every D; but A with no C, and this with every D; he will have both science and ignorance of the same thing according to the same. Again, if any should be deceived about those things which are from the same co-ordination; as if A is present with B, but this with C, and C with D; but he should apprehend that A is present with every B, and again, with no C; he will at the same time know and not think that it is present. Will he, therefore, from these things think nothing else, than that he does not form an opinion of that which he knows? For he in a certain respect knows that A is present with C, through B, just as the partial is known in the universal. Hence, that which he in a certain respect knows, he entirely thinks he does not know, which is impossible. But in that which was before-mentioned, if the middle is not from the same coordination it will not happen that any one can form an opinion of both the propositions according to each of the media; as if A should be present with every B, but with no C, and both these should be present with every D. For it will happen that the first proposition will assume a contrary, either simply, or partially. For if he thinks that A is present with everything with which B is present, but he knows that B is present with D; he will also know that A is present with D. Hence, if again he thinks that A is present with nothing with which C is present; he will not think that A is present with anything with which B is present. But

that he who thinks that it is present with everything with which B is present, should again think that it is not present with something with which B is present, is either, simply, or partially contrary. It is not possible, therefore, thus to think. Nothing, however, hinders, the assuming one proposition according to each middle, or both according to one; as that A is present with every B, and B with D; and again, that A is present with no C. For a deception of this kind is similar to that by which we are deceived about particulars; as if A is present with every B, but B with every C, A will be present with every C. If, therefore, any one knows that A is present with, everything with which B is present, he will also know that it is present with C. Nothing, however, hinders, but that he may be ignorant of the existence of C; as if A is two right angles; B, a triangle; and C, a sensible triangle.

Every triangle (B) has angles equal to two right (A): *Known*
This (C) is a triangle (B): *Unknown*
∴ This has angles equal to two right.
(Known by universal/Unknown by proper knowledge.)

For some one may think that C docs not exist, knowing that every triangle has angles equal to two right. Hence he will at the same time know, and be ignorant of the same thing. For to know that every triangle has angles equal to two right, is not anything simple, but partly arises from the possession of universal science, and partly from the possession of partial science. Thus, therefore, by universal science he knows that C has angles equal to two right; but he does not know it by partial science. He will not, therefore, possess contraries. The like also takes place with respect to the reasoning in the Meno of Plato, that discipline is reminiscence. For it never

happens that there is a pre-existent knowledge of particulars, but together with induction we receive, as it were recognizing, the science of particulars. For somethings we immediately know; as, for instance, the possession of angles equal to two right, if we know that what we see is a triangle. The like also takes place in other things. By universal knowledge, therefore, we survey particulars, but we do not know them through universals with appropriate knowledge. Hence it happens that about these we are deceived, yet not contrarily; but because we have a universal knowledge, and are deceived according to particular knowledge. The like, therefore, takes place in the things of which we have before spoken. For the deception which is according to the middle is not contrary to the science according to syllogism; nor the opinion according to each of the middles. Nothing, however, hinders but that he who knows that A is present with the whole of B, and again, that this is present with C, may think that A is not present with C. Thus, he who knows that every mule is barren, and that this animal is a mule, may fancy that this animal is parturient. For he does not know that A is present with C, unless he at the same time surveys each proposition. Hence it is evident, that if he knows one of the propositions, but does not know the other, he will be deceived, with respect to the manner in which universal subsist with reference to particular sciences. For we know nothing of sensibles which exists external to sense, not even if we have perceived it before, unless so far as we possess universal and proper science, and not because we energize according to that science. For the possession of scientific knowledge is predicated in a threefold respect; either as arising from the possession of universal knowledge, or as from proper knowledge, or as from energizing, so that to be deceived is likewise predicated in as many ways. Nothing, therefore, hinders, but that a man may have a knowledge of and be deceived about the same thing, except not in a contrary manner; which also happens to him who knows according to each proposition, and has not previously considered.

For thinking that a mule is parturient, he has not science in energy. Nor again, on account of opinion, has he deception contrary to science; for the deception contrary to universal science is a syllogism. But he who thinks that the very being of good, is the very being of evil, apprehends that the essence of good is the same as the essence of evil. For let the essence of good be A; but the essence of evil, B; and again, let the essence of good be C. Since, therefore, he thinks that B and C are the same, he will also think that C is B; and again, he will in a similar manner think that B is A; so that he will also be of opinion that C is A.

He thinks that the essence of evil (B) is the essence of good (A):
He thinks that the essence of good (C) is the essence of evil (B):
∴ He thinks that the essence of good (C) is the essence of good (A).

For just as if it were true, that of which C is predicated, B is predicated; and that of which B is predicated, A is predicated; this being the case, it was also true that A is predicated of C. The like will also take place in the verb to opine; and in the verb to be. For if C and B are the same, and again, B and A; C also is the same as A. Hence the like will also take place in the verb to opine. Is, therefore, this indeed, necessary, if any one should concede the first? But perhaps that is false, that any one will opine that the essence of good is the essence of evil, unless from accident. For it is possible to opine this in many ways. This, however, must be more accurately considered.

Aristotle, Prior Analytics. Book II, Chapter 22

When, however, the extremes are converted, it is also necessary that the middle should be converted with both extremes. For if A is present with C through B; if the conclusion is converted, and C is present with whatever A is present, B also is converted with A; and with whatever A is present, B also is present through the middle C. C likewise is converted with B through the middle A. The like will also take place in the not being present with. As if B is present with C, but A is not present with B; neither will A be present with C. If, therefore, B is converted with A, C also will be converted with A. For let B not be present with A; neither, therefore, will C be present with A; for B was present with every C. And if C is converted with B, A also will be converted with B. For of whatever B is predicated, C also is predicated. And if C is converted with A, B also will be converted with A. For that with which B is present, C also is present; but C is not present with that with which A is present. And this alone begins from the conclusion (but the others not similarly) as is also the case in a categoric syllogism. Again, if A and B are converted, and in a similar manner C and D, but it is necessary that A or C should be present with every individual, B also and D will so subsist, that one of them will be present with every individual. For since B is present with that with which A is present, and D with that with which C is present, but both are not at the same time present with everything with which A or C is present; it is evident that B or D also is present with every individual, and not both of them at one and the same time. For two syllogisms are composed. Again, if A or B is present with every individual, and C or D, but they are not present at one and the same time; if A and C are converted, B also and D are converted. For if B is not present with a certain thing, with which D is present, it is evident that A is present with it. But if A is present, C also will be present; for

they are converted; so that C and D will be present at one and the same time; but this is impossible. Thus, if that which is unbegotten is incorruptible, and that which is incorruptible is unbegotten; it is necessary that what is generated should be corruptible, and what is corruptible, generated. But when A is present with the whole of B, and with the whole of C, and is predicated of nothing else, and B also is present with every C; it is necessary that A and B should be converted. For since A is predicated of B C alone, but B also is predicated itself of itself, and of C; it is evident that of those things of which A is predicated, of all those B also will be predicated, except of A. Again, when A and B are present with the whole of C, but C is converted with B, it is necessary that A should be present with every B. For since A is present with every C, but C is present with every B, in consequence of reciprocation, A also will be present with every B. But when of two things which are opposites, as, for instance, A and B, A is more eligible than B, and in a similar manner D is more eligible than C, if A C are more eligible than B D, A is more eligible than D. For in a similar manner A is to be pursued, and B to be avoided; since they are opposites. C also is to be similarly avoided, and D to be pursued; for these likewise are opposed. If, therefore, A is similarly eligible with D, B also is to be similarly avoided with C. For each is similarly opposed to each, that which is to be avoided, to that which is to be pursued. Hence both are to be similarly avoided, or pursued, viz. A C, similarly with B D. But because those are more eligible than these, they cannot be similarly eligible; for if they could, B D would be similarly eligible with A C. But if D is more eligible than A, B also will be less avoidable than C; for the less is opposed to the less. But the greater good and the less evil are more eligible than the less good and the greater evil. The whole, therefore, of B D, is more eligible than A C. Now, however, this is not the case. Hence A is more eligible than D; and consequently C is less avoidable than B. If, therefore, every lover according to love chooses A,

viz. to be in such a condition that he may be gratified, and yet not be gratified, which is C, rather than be gratified which is D, and yet not be in a condition to be gratified which is B; it is evident that A, viz. to be in a condition adapted to be gratified, is more eligible than to be gratified. To be beloved, therefore, is more eligible according to love than coition. Hence love is rather the cause of dilection than of coition. But if it is especially the cause of this, this also is the end of it. Hence coition either, in short, is not, or it is for the sake of dilection. For other desires also and arts, are thus produced. It is evident, therefore, how terms subsist according to conversions, and the being more eligible, or more avoidable.

Aristotle, Prior Analytics. Book II, Chapter 23

Now, however, it must be shown, that not only dialectic and demonstrative syllogisms are produced through the before-mentioned figures, but that rhetorical syllogisms also are thus produced, and, in short, every kind of credibility, and according to every method. For we believe all things either through syllogism, or from induction. Induction, therefore, and the syllogism from induction are, when one extreme is concluded through the other of the middle. As if of A C the middle is B, and it should be shown through C, that A is present with B. For thus we make inductions. Thus, let A be long-lived; B, void of bile; C, everything long-lived, as man, horse, and mule. A, therefore, is present with the whole of C; for every C is long-lived. But B also, or that which is void of bile, is present with every C. If, therefore, C is converted with B, and is not extended above the middle, it is necessary that A should be present with B. For it has been before shown, that when any two things are present with the same thing, and the extreme is converted with one of them, the other of the things predicated will also be present with that which is converted. But it is necessary to conceive of C. as if it were composed from all particulars; for induction is produced through all particulars.

Every man, horse, mule (C), is long-lived (A):
Whatever is void of bile (B) is man, horse, mule (C):
∴ Whatever is void of bile (B) is long-lived (A).

A syllogism, however, of this kind is of the first proposition, and without a middle. For of those propositions of which there is a middle, the syllogism is produced through the middle; but

of those, of which there is not a middle, the syllogism is produced through induction. And after a certain manner induction is opposed to syllogism; for the latter shows the extreme of the third through the middle; but the former shows the extreme of the middle through the third. To nature, therefore, the syllogism which is produced through the middle is prior and more known; but to us the syllogism which is produced through induction is more evident.

Aristotle, Prior Analytics. Book II, Chapter 24

But example is when the extreme is shown to be present with the middle, through the similar to the third. It is necessary, however, that it should be known that the middle is present with the third, and the first with the similar. Thus, for instance, let A be bad; B, to engage in war against neighbors; C, the Athenians against the Thebans; D the Thebans against the Phocenses. If, therefore, we wish to show that to war against the Thebans is bad, it must be assumed that it is bad to war against neighbors. But the credibility of this is from similars, as that to the Thebans, the war against the Phocenses was pernicious. Since, therefore, war against neighbors is bad; but the war against the Thebans is against neighbors; it is evident that it is bad to war against the Thebans. Hence it is evident that B is present with C, and with D; for both are to engage in war against neighbors. And also that A is present with D; for the war against the Phocenses was not advantageous to the Thebans. But that A is present with B will be shown through D. This will also be effected after the same manner, if belief that the middle is in the extreme is produced through many similars. It is evident, therefore, that example is neither as whole to part, nor as part to whole, but as part to part, when both are under the same things but the one is more known than the other. It also differs from induction; because the latter shows from all individuals that the extreme is present with the middle and does not conjoin the syllogism with the extreme; but the former conjoins, and does not demonstrate from all individuals.

Aristotle, Prior Analytics. Book II, Chapter 25

Abduction, however, is, when it is evident that the first is present with the middle; but it is immanifest that the middle is present with the lasts though it is similarly credible, or more credible than the conclusion. Farther still, if the media of the last and middle are few; for it entirely happens that we shall be nearer to science. Thus, for instance, let A be that which may be taught; B, science: and C, justice. That science, therefore, may be taught is evident; but whether justice is science is immanifest. Hence if B C is similarly, or more credible than A C, it is abduction; for we are nearer to scientific knowledge in consequence of adding the proposition B C to the conclusion A C, not possessing science before.

Every science (B) may be taught (A): —Known
All justice (C) is science (B): –Similarly or more credible than the conclusion
∴ All justice (C) may be taught (A). –Unknown

Again, abduction is, if the media of the terms B C should be few; for thus we shall be nearer to knowledge. As if D should be to be squared; E, a rectilinear figure; and F, a circle. Then if of the proposition E F, there is only one middle, for a circle to become equal to a rectilinear figure through lunulas, will be a thing near to knowledge.

Every rectilinear figure (E) may be squared (D): –Known
Every circle (F) may become a rectilinear figure (E): Proved through one middle.
∴ Every circle (F) may be squared (D). This is proved through many media.

But when neither the proposition B C is more credible than the conclusion AC, nor the media are fewer; I do not call this abduction. Nor when the proposition BC is without a middle; for a thing of this kind is science.

Aristotle, Prior Analytics. Book II, Chapter 26

But objection is a proposition contrary to a proposition. It differs, however, from a proposition, because objection may be in part, but a proposition either altogether cannot be in part, or not in universal syllogisms. Objection, however, is urged in a twofold respect, and through two figures. In a twofold respect, indeed, because every objection is either universal or partial. But through two figures; because objections are urged opposite to the propositions, and opposites are only concluded in the first and third figure. For when any one thinks fit to assert that a thing is present with every individual, we object, either that it is present with no individual, or that it is not present with a certain individual. But of these, that a thing is present with no individual is collected from the first figure; and that it is not present with a certain individual is collected from the last figure. Thus, for instance, let A be there is one science; and B, be contraries. When any one, therefore, asserts that there is one science of contraries, it is objected, either that there is not entirely the same science of opposites, but contraries are opposites; so that the first figure is produced.

Proposition

There is one science (A) of contraries (B):

Objection

There is not one science (A) of opposites (C):

Contraries (B) are opposites (C):

∴ There is not one science (A) of contraries (B).

Or it is objected that there is not one science of the known and the unknown. And this is the third figure. For of C, i.e. of the known and the unknown, it is true that they are contraries; but it is false that there is one science of them.

Proposition

There is one science (A) of contraries (B):

Objection

There is not one science (A) of the known/unknown (C):

The known/unknown (C) are contraries (B):

∴ There is not one science (A) of all contraries (B).

The like will also take place in a privative proposition. For if any one thinks fit to assert that there is not one science of contraries; we say either that there is the same science of opposites, or that there is the same science of certain contraries, as of the salubrious and the morbid. That there is one science, therefore, of all things, is objected to from the first figure; but that there is one science of certain things, is objected to from the third figure.

Proposition

There is not one science (A) of contraries (B):

Objection

There is one science (A) of opposites (C):

Contraries (B) are opposites (C):

∴ There is one science (A) of contraries (B).

Proposition

There is not one science (A) of contraries (B):

Objection

There is one science (A) of the salubrious and morbid (C):

The salubrious and morbid (C) are contraries (B):

∴ There is one science (A) of certain contraries (B).

For, in short, in all disputations, it is necessary that he who universally objects, should join the contradiction of the things proposed to that which is universal; as, if some one should think fit to assert that there is not the same science of all contraries, he who objects should say that there is one science of opposites. For thus it is necessary that there should be the first figure; since the middle becomes that which is universal to that which was proposed from the beginning. But it is necessary that he who objects in part, should join contradiction to that to which the subject of the proposition is universal; as, that of the known and the unknown there is not the

same science. For contraries are universal with reference to these; and the third figure is produced. For that which is assumed in part is the middle, as, for instance, the known and the unknown; since from those things from which the contrary may be syllogistically collected, we endeavor to urge objections. Hence from these figures alone we adduce objections; for in these alone opposite syllogisms are constructed; since through the second figure it is not possible to conclude affirmatively. Besides, though it should be possible, yet the objection adduced in the middle figure would require a more extended discussion; as if any one should not grant that A is present with B, because C is not consequent to it. For this is manifest through other propositions. The objection, however, ought not to be converted to other things, but should immediately have the other proposition apparent. Hence there is not a sign from this figure alone. Other objections also are to be considered; such as those which are assumed from the contrary, from the similar, and from that which is according to opinion. It must also be considered whether a partial objection can be assumed from the first figure, or a privative objection from the middle figure.

Aristotle, Prior Analytics. Book II, Chapter 27

The consentaneous, however, and a sign, are not the same. But the consentaneous, indeed, is a probable proposition. For that which is known to be for the most part thus generated, or not generated, or to be, or not to be; this is consentaneous; as, for instance, that the envious hate, or that love is love. But a sign seems to be nothing else than a demonstrative proposition, either necessary, or probable. For that which when it exists, a thing is, or which when it is generated, a thing is first or last generated; this is a sign, that a thing is generated, or is. But an enthymeme is a syllogism from things consentaneous, or from signs. A sign, however, is triply assumed, in as many ways as the middle in the figures of syllogisms. For it is assumed either as in the first figure, or as in the middle, or as in the third. Thus to show that a woman is pregnant, because she has milk in her breasts is from the first figure; for the middle is, to have milk. Let A be to be pregnant; B, to have milk; C, a woman.

Whatever woman has milk (B) is pregnant (A):
This woman (C) has milk (B):
∴ This woman (C) is pregnant (A).

But that wise are worthy men; for Pittacus is a worthy man, is concluded through the last figure. Let A be worthy; B, wise men; C, Pittacus. It is true, therefore, that A and B are predicated of C; except that they do not assert the one, because they know it; but they assume the other.

A Paralogism

Pittacus (C) is a worthy man (A):

Pittacus (C) is a wise man (B):

∴ Wise (B) are worthy men (A).

But that a woman is pregnant because she is pale, is to be concluded through the middle figure. For since paleness is a consequence of pregnancy, and it is also an attendant on this woman, they fancy that this woman is pregnant. Let paleness be A; to be pregnant B; a woman C.

Whatever woman is pregnant (B) is pale (A):

This woman (C) is pale (A):

∴ This woman (C) is pregnant (B).

If, therefore, one proposition should be enunciated, a sign only will be produced; but if the other proposition is also assumed, a syllogism will be produced; as, for instance, that Pittacus is liberal; for the ambitious are liberal; and Pittacus is ambitions. Or again, that wise are good men; for Pittacus is a good man, and also a wise man. Thus, therefore, syllogisms are produced. Except, indeed, that the syllogism which is constructed in the first figure is insoluble, if it is true; for it is universal. But the syllogism which is constructed through the last figure may be solved, though the conclusion should be true; because the syllogism is not universal, nor is the thing proposed concluded. For it is not necessary if Pittacus is a worthy man, that on this account other wise men also should be worthy. But the syllogism which is constructed through the middle

figure may always and entirely be solved. For a syllogism will never be produced when the terms thus subsist. For it is not necessary, if the woman who is pregnant is pale, and this woman is pale, that this woman is pregnant. That which is true, therefore, will be inherent in all the figures; but they will have the before-mentioned differences. Either, therefore, a sign must be thus divided; but from these the argument ought to be assumed, which is the middle. For the argument they say is that which produces knowledge; but the middle is especially a thing of this kind. Or those things which are assumed from the extremes, are to be called signs; but that which is from the middle is to be called an argument. For that is most probable and especially true which proves through the first figure. But it is possible to form a judgment of the natural disposition of any one by his bodily frame if it is granted that such passions as are natural change at one and the same time the body and the soul. For some one perhaps learning music suffers some change in his soul; but this passion is not among the number of those which are natural to us; angers and desires which pertain to natural motions rather belonging to this class. If, therefore, this should be granted, and that one thing is the sign of one passion, and we are able to assume the proper passion and sign of each genus; we may be able to form a judgment of the natural disposition by the bodily frame. For if a proper passion is inherent in a certain individual genus, as, for instance, fortitude in lions, it is also necessary that there should be a certain sign; (for it is supposed that the body and soul sympathize with each other) and let this be the possession of great extremities; which also happens to be present with other not whole genera. For the sign is thus proper (or peculiar) because the passion is the peculiarity of the whole genus, and is not the peculiarity of it alone, as we are accustomed to say. The same sign, therefore, will also be inherent in another genus, and man will be brave, and some other animal. It will, therefore, possess that sign; for there was one sign of one passion. If therefore, these things are true, and we are able to collect

such signs, in these animals, which have one peculiar passion alone; (but each passion has its own sign, since it is necessary that it should have one sign) we may be able to form a judgment of the natural disposition by the bodily frame. But if the whole genus has two peculiarities; as a lion has fortitude and liberality, how shall we know which of those signs that are properly consequent is the sign of either passion? Shall we say that we may know this, if both are inherent in something else, but not wholly, and that in those things in which each is not inherent wholly, when one is possessed, the other is not? For if an animal is brave, indeed, but not liberal, but it has this from two signs; it is evident that in a lion also, this is the sign of fortitude. But to form a judgment of the natural disposition by the bodily frame, is in the first figure, because the middle reciprocates with the first extreme, but surpasses the third, and does not reciprocate with it. Thus, for instance, let fortitude be A; great extremities, B; and a lion, C. Hence B is present with every individual of that with which C is present, and it is also present with other things. But A is present with every individual of that with which it is present, and not with more individuals, but is converted. For if it were not, there would not be one sign of one passion.

Whatever has great extremities is brave:

Every lion has great extremities:

∴ Every lion is brave.

Whatever has great extremities is brave:

Some man has great extremities:

∴ Some man is brave.

THE END