Philosophos plurimos sapientiae titulo decoratos, qui tamquam luminaria fulgida splendore scientiae igno­rantiae tenebratos caligine illustrant, acta praeterita protulit et nutrivit. Inter alios autem philosophos peritissimus Aristoteles non parvae nec contemnendae doctrinae praecellit, qui quasi lynceis oculis secretiora naturae rimatus philosophiae naturalis abscondita posteris revelavit.

Et quoniam quidem multi libros eiusdem consati sunt exponere, visum est mihi et multis studiose rogantibus, quid de eius intentione senserim, ad studentium utilitatem conscribere. Nee quisquam, nisi invidus, mihi debet esse molestus, si ea quae probabilia mihi videntur sine invidia communicem; quia animo solummodo investigandi, non pertinacia contendendi nec in alculius iniuriam, ad explanationem eorum quae Aristotelis sunt exquisita laboribus sine temeraria assercione procedam.

Et sicut nonnumquam aliorum opiniones cum omni modestia sine malitia improbabro, ita paratus sum etiam sine impatientia, si aliquid dixero non consensum veritati, reprehendi. Caeveat tamen corrector, ne in malis principiis consuetudo aut favor aut odium de correctore nonnumquam faciat perversorem, et advertat quod non possum me singularum opinionibus, quae se mutuo reprobant, coaptare.

Sane, licet vir iste multa et magna divinitus adiutus invenerit, nonnullos tamen impeditus humanitatis errores immiscuit veritati. Eapropert opiniones recitandas mihi nullus ascribat, cum non, quid iuxta veritatem catholi­

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1 Aristotle's Physica

Past ages have begotten and reared many philosophers distinguished by the title 'sage'. Like shining lights they have illuminated with the splendour of their knowledge those who were plunged in the dark night of ignorance. The most accomplished man to have appeared among them is Aristotle, outstanding as a man of no slight or insignificant learning. With the eyes of a lynx, as it were, he explored the deep secrets of nature and revealed to posterity the hidden truths of natural philosophy.

Since many have tried to explain his books, it seemed to me, and to many earnest enquirers, desirable that I should write down for the benefit of students what I thought to be the mind and intention of Aristotle. None but the envious should object to my desire to communicate ungrudgingly what I regard as probable opinions on this work 1 of the great philosopher. For my aim is investigation pure and simple, and not obstinate quarrelsomeness nor ill will; and without any rash assertions I proceed to an explanation of what Aristotle's labours disclose.

And just as at times, in all modesty and without malice, I shall disprove the opinions of others, so I am patiently ready to be corrected should I ever go against the truth. But let him who corrects me beware lest habitual adherence to bad principles, or bias, or hatred should make him sometimes pervert, instead of correct me. And he should also realise that I cannot accommodate myself to everybody's opinions when one opinion contradicts another.

Indeed, though the Philosopher has made, with God's help, many great discoveries, he has nevertheless, being human, mingled errors with the truth. Therefore, no-one
ockham, sed quid istum Philosophum approbase vel secundum sua principia, ut mihi videtur, approbare debuisse putam, referre proponam. De intentione alcius diversa et adversa, cum ipse scripturae sacrae auctor non fuerit, sine periculo animae licitum est sentire; nec in hoc error contrahit pravitatem. Quin-immo in exercitatione huius unicumque sine periculo liberum reservatur iudicium.

Expositurus itaque naturalem Aristotelis philosophiam a libro Physicorum incipiam, qui primus est.

Sed antequam ad expositionem textus accedam, aliqua praebamula, sicut in principio Logicae feci, praemittam. Et quia forte exposiit super Logicae ad manus aliquorum non deveniet, qui tamen istam forte videbunt, idcirco aliqua ibidem dicta hic replicare addendo aliqua non pigebit.

Est ergo primo videndum, quid est scientia in generali, secundo aliaque distinctiones huius nominis 'scientia' sunt ponendae, tertio ex dicendis sunt aliquae conclusiones elicendae, quarto de scientia naturali in speciali est videndum.

Circa primum dicendum est, quod scientia vel est quaedam qualitas existens subjectively in anima, vel est collectio alciarum talium qualitatum animam infirmantium. Et loquor tantum de scientia hominis.

Hoc probatur: Quia non minus est scientia, quae est habitus, talis qualitas quam actus scientiae; sed actus scientiae est talis qualitas; ergo et scientia, quae est habitus, est talis qualitas. Maior videtur manifesta. Minorem probo: Quia impossibile est contradictoria successivae verificari de aliquo, nisi sit alicubi mutatio, scilicet acquisitio alciatis rei vel deperditio vel productio vel destructio vel motus localis; sed nulla tali mutatione

THE NOTION OF KNOWLEDGE OR SCIENCE

may attribute to me these opinions that I am about to present, since I do not intend to express what I myself hold in accord with the Catholic faith, but only what I think the Philosopher has approved, or ought to have approved in accordance with his own principles. One may safely hold different and opposite opinions regarding the mind of an author, if he is not an author of Holy Scripture. And an error in this case is not a fault. Rather, in such a mental exercise, anybody may without risk retain freedom of judgment.

I am going to expound Aristotle's philosophy of nature, and I shall begin with his Physics, which comes first.

But before starting on an exposition of the text, I shall make a few preliminary remarks—as I have done at the beginning of the Logic. And lest perhaps the exposition of the Logic should not have come into the hands of some who will see the present work, it will not be amiss to repeat in part what was said there, with some additions.

First, then, we have to see what knowledge in general is; secondly, we have to lay down some distinctions concerning the term 'knowledge'; thirdly, we have to draw a few conclusions from what is to be said; and fourthly, we have to consider natural science in particular.

As to the first point, we must say that knowledge is a certain quality which exists in the soul as its subject, or a collection of several such qualities or forms of the soul. I am speaking here only of human knowledge.

This is proved as follows: Knowledge as a habitus ('habitual' knowledge) is no less such a quality than an act of knowledge is; but an act of knowledge is such a quality; therefore knowledge as a habitus is such a quality also. The major premise seems clear. I proceed to the proof of the minor: It is impossible that contradictory statements should successively be made true of something, unless there be some change somewhere, namely the acquisition or loss or production or destruc-

1 Throughout, 'knowledge' and 'science' are both used for 'scientia'.
existe in aliquo ali ab anima rationali potest anima aliquid intelligere, quod non prius intelligebat, per hoc quod vult intelligere aliquid quod non prius intellexit; ergo anima habet aliquid quod prius non habuit. Sed illud non potest dari nisi intellectio vel volitio; ergo volitio vel intellectio est aliqua talis qualitas. Sed qua ratione volitio est talis qualitas, cadem ratione et intellectio. Et per consequens cadem ratione habitus scientiae est talis qualitas, vel aggregans tales qualitates.

Præterea: Potentia quæ nihil habet, quod prius non habuit, non est magis habilis ad actum quam prius; sed maniœste experimur, quod post multas cogitationes est aliquid habilior et pronior ad consimiles cogitationes nunc quam prius; ergo aliquid habet nunc quod prius non habuit. Sed illud non potest poni nisi habitus; ergo habitus est subjective in anima. Sed non potest esse aliquid tale subjective in anima, nisi sit qualitas; ergo habitus est qualitas. Et per consequens, multo fortius, habitus qui est scientia est qualitas animae.

Circa secundum sciendum, quod 'scientia' multipliciter accipitur, et sunt variae distinctiones scientiae et non subordinatae.

Una est, quod 'scientia' uno modo est certa notitia alciüus veri. Et sic scintur aliqua per fidem tantum. Sicut dicimus, nos scire quod Roma est magna civitas, quam tamen non vidimus; et similibiter dico, quod scio istum esse patrem meum et istam esse matrem meam, et sic de aliis quae non sunt evidenter nota; quia tamen etsine omni dubitatione adhaeremus et sunt vera, diciur scire illa.

Aliter accipitur 'scientia' pro evidenti notitia, quando scilicet aliquid dicitur sciri non tantum proper testimonium narrantium, sed si nullus narrat hoc esse, ex

ation of something, or a local motion. But, though there be no change in anything but the rational soul, the soul is able to consider something it did not consider before, merely by willing to consider something it did not consider before. Therefore the soul now has something that it did not have before. But this something cannot be anything but either an act of intellection or a volition; therefore either an act of intellection or a volition is such a quality. However, for the same reason that a volition is such a quality, an act of intellection also is such a quality. And consequently, for the same reason the habitus of knowledge is also such a quality or a collection of such qualities.

Furthermore, a faculty that now has only what it had before and nothing else, is no more ready in its action now than it was before. Yet it is manifestly our experience that after many acts of thought a person is more fit and more inclined to have similar acts of thought than he was before. Therefore he now has something that he did not have before. But this something can be only a habitus. Therefore a habitus exists in the soul as in its subject. But only a quality can be in the soul as in its subject; therefore, a habitus is a quality. Hence a fortiori, the habitus which is knowledge is a quality in the soul.

As to the second point, we must realise that 'knowledge' is taken in many senses. Hence, there are different meanings of 'knowledge', and one is not subordinated to the other.

In one sense, knowledge is certain cognition of something that is true. In this sense, some truths are known only on trust; for instance, when we say we know that Rome is a big city, although we have not seen Rome. In the same way I say I know that this person is my father and this person is my mother. And so with many other things that are not 'evidently' known. And yet because we adhere to these things without a shadow
notitia aliqua incomplexa terminorum aliorum
mediate vel immediate assentiremus ei. Sicut si
nullus narraret mihi, quod paries est albus, ex
hoc ipso quod video albedinem, qua est in
pariete, scirem, quod paries est albus. Et ita
est de alis. Et isto modo scientia non
est tantum necessariorum, immo etiam est aliorum
contingentiarum, sive sint contingens ad utrum libet
sive alia.

Tertio modo dicitur 'scientia' notitia evidens alicuius
necessarii. Et isto modo non sciuntur contingens sed
principia et conclusiones sequentes.

Quarto modo dicitur 'scientia' notitia evidens veri
necessarii nata causari ex notitia evidenti praemissarum
necessariarum applicatarum per discursum syllogisticum.
Et isto modo distinguatur scientia ab intellectu, qui est
habitus principiorum, et etiam a sapientia, sicut docet
Philosophus vi Ethicorum.*

Alia distinctio scientiae est, quod aliquando 'scientia'
accipitur pro notitia evidenti conclusionis, aliquando
pro tota notitia demonstracionis.

Alia distinctio scientiae est, quod 'scientia' aliquando
accipitur pro uno habitu secundum numerum non includentem
plures habitus specie distinctos, aliquando
accipitur pro collectione multorum habituum ordinem
determinatum et certum habentium. Et isto secundo
modo accipitur scientia frequenter a Philosopho. Et
scientia isto modo comprehendit tamquam partes aliquo
modo integrales habitus principiorum et conclusionum,
notitias terminorum, reprobationes falsorum argument.

* cap. iii sqq. (1139 sqq.)

1 Here = 'science' 2 Here = 'science' (emphatic)
metaphysica esse scientia et naturalis philosophia esse scientia, et ita de alis.

Tertio, ex istis eliciendae sunt aliquae conclusiones. Prima est : Quod metaphysica, similiter mathematica et philosophia naturalis, non est una scientia secundum numerum illo modo, quo haec albedo est una numero et iste calor et iste homo et iste asinus. Hanc probo : Quia metaphysica comprehendit multas conclusiones, circa quorum unus potest aliquis errare et ipsum eodem tempore aliam scire ; sicut per certam experientiam patet, quod idem primo addiscit unam conclusionem et postea aliam, et tamen aliquando prius erravit circa utramque. Ex hoc arguo sic : Error circa \( A \) et scientia circa \( A \) formaliter repugnant ; sed error circa \( A \) et scientia circa \( B \) non repugnant formaliter, quia stant simul ; ergo scientia circa \( A \) et scientia circa \( B \) non sunt eiusdem rationis ; quia quando aliqua sunt eiusdem rationis, quidquid formaliter contrariatur uni, contrariatur alteri. Sed si non sunt eiusdem rationis, et manifestum est quod neutrum est materia alterius nec forma, ergo non faciunt unum numero per se : et per consequens comprehendens utrumque illorum non est unum numero per se.

Præterea : Metaphysica comprehendit tam notitiam principiorum quam conclusionum, et similiter philosophia naturalis ; sed habitus principiorum et conclusionum distinguuntur : tum quia secundum Philosophum \( * \) Posteriorum * habitus principiorum est nobilior habitu conclusionum, sed idem non est nobilior se ; tum quia notitia principii est causa notitiae conclusionis ; idem

* cap. ii (71a, 29 sqq.)
autem non est causa suiipsius. Ideo dicendum est, quod metaphysica non est una scientia numero, nec similiter philosophia naturalis. Sed philosophia naturalis est collectio multorum habituum, sicut dicitur. Nec est aliter una nisi sicut civitas dicitur una vel populus dicitur unus vel exercitus comprehendens homines et equos et caetera necessaria dicitur unus, vel sicut regnum dicitur unus, vel sicut universitas dicitur una, vel sicut mundus dicitur unus.

Secunda conclusio sequens est ista : Quod nulla scientia habet nisi duas causas proprie loquendo de causa, quia nullum accidens habet nisi tantum duas causas, scilicet finalem et efficientem : Quia secundum Philosophum, viii. Metaphysicae,* accidens non habet materia ex qua sed in qua ; nunc autem materia in qua non est causa illius cuius est materia in qua, sicut materia non est causa formae sed compositi ; ergo accidens non habet materiam. Sed si non habet causam materialem, non habet causam formalem. Ergo nullum accidens habet nisi tantum duas causas essentiales, scilicet finalem et efficientem. Sed omnis scientia, quae est una numero, est una qualitas numero, sicut dicitur est ; ergo nulla talis scientia habet nisi tantum duas causas. Sed quando aliquid est aggregatum ex multis diversarum rationum, quorum nullum est materia alterius, si nullum illorum habet materiam, nec illud aggregatum habet materiam : ergo scientia, quae est collectio multorum talium habituum, non habet materiam, nec per consequens habet causam formalem.

Ideo dicendum est, quod loquendo de virtute sermonis, nulla scientia habet nisi tantum duas causas essentiales, scilicet efficientem et finalem.

Sed quod dicitur, quod qualelibet scientia habet

* cap. iv (1044, 8 sqq.)
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causam materialem et formalem, si habeat veritatem, est locuto impropria et metaphorica; et tune vocatur 'materia' illud, de quo est scientia. Sed iste est impro­prius modus loquendi; sic enim possem dicere, quod color est materia visionis meae, et quod color est causa materialis apprehensionis et sensationis. Similiter, forma improprie vocatur distinctio partium scientiae; sic enim possem dicere, quod tres lineae sunt causa formalis trianguli, et quod manus et pedes et caput et caetera membra hominis sunt causa formalis hominis, quod non est proprie dictum. Ideo, proprie loquendo, scientia non habet nisi duas causas, quia non habet causam formalem nec materialem: Quia, proprie loquendo, causa materia­lis est de essentia illius cuius est causa; sed subjectum scientiae non est de essentia scientiae, sicut patet manifeste. Similiter, proprie loquendo, causa materialis recipit formam in se; sed subjectum vel objectum non recipit in se scientiam nec aliquam partem scientiae, sed solus intellectus recipit scientiam; ergo objectum vel subjectum non est, proprie loquendo, causa materialis scientiae; et per consequens non habet causam formalem.

Tertia conclusio sequens est: Quod talis scientia una unitate collectionis non habet unum subjectum, sed secundum diversas partes habet subjecta diversa: Quia subjectum scientiae non potest vocari nisi illud de quo scitur aliquid; sed in una scientia tali unitate sunt multa de quibus alia scientur; ergo talis scientia non habet unum subjectum.

Propter quod sciendum, quod 'subjectum scientiae' dupliciter accipitur: Uno modo pro illo, quod recipit an efficient and a final cause. Hence, if the statement that all knowledge has a material and formal cause be true, it is so only in an improper and metaphorical sense. For in this case 'matter' means that which knowledge is concerned. Yet this is an improper mode of speaking; for in this way I could also say that colour is the matter of vision and that the colour is the material cause of perception and sensation. Likewise, it is only in an improper sense that the distinction between the parts of knowledge is called form; for in this sense I could also say that the three lines are the formal cause of a triangle, and that the hands and the feet and the other limbs of man are the formal cause of man, which is not a proper way of speaking. Properly speaking, therefore, knowledge has only two causes, since it lacks a formal and a material cause. For, properly speaking, the material cause belongs to the essence of that of which it is a cause; but the subject of knowledge does not belong to the essence of knowledge as is manifestly apparent. Again, properly speaking, a material cause receives the form in itself; but neither the subject nor the object of knowledge receives in itself knowledge or any part of knowledge, since only the intellect receives knowledge. Therefore, properly speaking, neither the object nor the subject is a material cause of knowledge. Consequently knowledge has no formal cause either.

A third conclusion following from the preceding is this: A science which has only a collective unity has not just one subject; rather it has different subjects according to its different parts. For only that about which something is known can be called a subject of knowledge; yet, in a science that is only collectively one, there are many things about which different things are scientifically known; therefore, such a science has not just one subject.

In order to explain this we must realise that the expression 'subject of knowledge' can be understood in
two different senses. In one sense it means that which receives knowledge and has the knowledge in it as in a subject, just as a body or a surface is the subject of whiteness, and fire the subject of heat. Understood in this sense, the subject of knowledge is the intellect itself, because any such knowledge is an accident of the intellect. Taken in the other sense, 'subject of knowledge' is said to be that about which something is known. It is thus that the Philosopher understands 'subject' in the Posterior Analytics. In this sense the subject of knowledge is the same thing as the subject of a conclusion, and it is called 'subject' only because it is the subject of a conclusion. If, therefore, there are different conclusions with different subjects—'subject' being taken in the sense in which the logician uses it—then that science which is an aggregate of all these scientifically known conclusions has not just some one subject, but the different parts have different subjects. Should all the conclusions, however, have the same subject, then the entire aggregate has but one subject, namely that which is the subject of all these conclusions.

We must also realise that there is a difference between the object and the subject of knowledge. For the object of knowledge is the whole proposition that is known; the subject, however, is only a part of this proposition, namely the subject-term. For instance, the object of my knowledge that every man is educable is the entire proposition; its subject, however, is the term 'man'.

From this it becomes clear that it is no part of the concept of 'a subject' that it should 'virtually' contain the whole knowledge of the conclusions, or be something which comes first, and to which everything else is referred. And the same holds good for many other such supposed implications of the concept 'subject'. For the subject no more 'virtually' contains a habitus than the predicate does, nor are all these things attributed more to the subject than to something else. And if this sometimes happens, it is only by accident.
Ex istis etiam patet, quod quaerere: Quid est subiectum logicae vel philosophiae naturalis vel metaphysicae vel mathematicae vel scientiae moralis? nihil est quaerere, quia talis quaestio supponit, quod aliquid sit subiectum logicae et similiter philosophiae naturalis, quod est manifeste falsum; quia nihil unum est subiectum totius, sed diversarum partium diversa sunt subjecta. Unde quaerere 'Quid est subiectum philosophiae naturalis?' est simile quaestioni, qua quaeretur 'Quis est rex mundi?' Quia sicut nullus est rex mundi, sed unus est rex unius regni et alter alterius, sic est de subjectis diversarum partium scientiae tali; nec plus scientia, quae est talis collectio, habet unum subiectum, quam mundus habet unum regem vel quam unum regnum habet unum comitem.

Tamen pro dictis aliquorum auctorum, qui videntur assignare unum subiectum talium scientiarum, est sciendum, quod non intendunt, quod aliquid sit proprium subiectum primum totius, sed intendunt dicere, quod inter omnia subiecta diversarum partium est aliquid unum primum aliqua primitate, et aliquando unum est primum una primitate et aliud, alia primitate. Sicut in metaphysica primum inter omnia subiecta primitate praedicationis est ens, sed primum primitate perfectionis est Deus; similiter in philosophia naturali primum subiectum primitate praedicationis est substantia naturalis vel aliquid tale, et primum primitate perfectionis est homo vel corpus caeleste vel aliquid tale. Et hoc intendunt auctores per talia verba, et nihil aliud.

Quarto videndum est de scientia naturali magis in speciali, et videndum est, de quibus considerabit, quomodo ab aliis scientiis distinguatur, sub qua parte philosophiae

From this it is clear that it is meaningless to ask 'What is the subject of logic or of the philosophy of nature, or of metaphysics, or of mathematics, or of ethics?' For such a question presupposes that something is the subject of logic, and likewise that something is the subject of the philosophy of nature. But that is manifestly false, because there is no one subject of the entire science, but the different parts have different subjects. Hence to ask 'What is the subject of the philosophy of nature?' is like asking 'Who is the king of the world?' Just as there is no one who is the king of the world, but one man is king of one kingdom and another of another kingdom, so also with the subjects of the various parts of such a science. There is no more reason for a science, which is such a collection, to have one subject than for the world to have one king, or for one kingdom to have one count.

But since certain authors seem to assign one subject to such sciences, we must, in order to understand what they say, bear it in mind that they do not mean that something is properly speaking the first subject of the whole science. What they wish to say is that amongst all the subjects of the various parts there is one which is the first because of some priority. Sometimes one subject is first as regards one sort of priority, while another is first as regards another sort of priority. For instance, in metaphysics 'being' [ens] is the first subject of all as regards priority of predication, whereas the first subject as regards priority of perfection is 'God'. Likewise in the philosophy of nature the first subject as regards priority of predication is 'natural substance' or something of that kind, but the first as regards priority of perfection is 'man' or 'heavenly body' or something like that. This is what authors have in mind when they use such expressions, and nothing else.

In the fourth place, we must consider the science of nature more in detail. We have to see what it deals with, how it is distinguished from other sciences, under which
Circa primum dicendum est, quod philosophia naturalis considerat de substantiis sensibilibus et compositis ex materia et forma principaliter, secundario de aliquibus substantiis separatis.

Ad cuius intellectum est scientiam, quod omnis scientia est respectu complexi vel complexorum. Et sicut complexa scientia per scientiam in complexa, ex quibus complexa componuntur, sunt illa de quibus illa scientia considerat. Nunc autem ita est, quod complexa, quae scientiam non complexa per scientiam naturalem, non componuntur ex rebus sensibilibus nec ex substantiis, sed componuntur ex intentionibus seu conceptibus animae communibus talibus rebus. Et ideo, proprie loquendo, scientia naturalis est de intentionibus animae communibus talibus rebus et supponentibus praecise pro talibus rebus in multis propositionibus, quamvis in aliquibus propositionibus, sicut in prossequente patet, supponant tales conceptus pro seipsis.

Ped, proprie loquendo, scientia naturalis est de intentionibus animae communibus talibus rebus et supponentibus praecise pro talibus rebus in multis propositionibus, quamvis in aliquibus propositionibus, sicut in prossequente patet, supponant tales conceptus pro seipsis.

Et hoc est quod dixit Philosophus, quod scientia non est de singularibus sed est de universalibus supponentibus pro ipsius singularibus. Tamen, metaphorice et improprie loquendo, dicitur scientia naturalis esse de corruptibilibus et de mobilibus, quia est de illis terminis qui pro talibus supponunt.

Et quod sic sit, ostendo: Nam accipio hanc propositionem: "Omnis substantia sensibilis componitur ex materia et forma". Aut hoc subictur res extra animam, aut tantum intentio in anima, aut vox. Si res, et non res communis, quia nulla talis est, sicut ostendetur et part of philosophy it is contained; and then we have to consider the Physics in particular.

Concerning the first point, we must say that the philosophy of nature deals primarily with sensible substances composed of matter and form, and in the second place with certain separate substances.

In order to understand this, we must know that all knowledge has to do with a proposition or propositions. And just as the propositions (complexa) are known by means of a science, so also the non-complex terms of which they are composed are that subject matter which is considered by a science. Now the fact is that the propositions known by natural science are composed not of sensible things or substances, but of mental contents or concepts that are common to such things. Hence, properly speaking, the science of nature is not about corruptible and generable things nor about natural substances nor about movable things, for none of these things is subject or predicate in any conclusion known by natural science. Properly speaking, the science of nature is about mental contents which are common to such things, and which stand precisely for such things in many propositions, though in some propositions these concepts stand for themselves, as our further exposition will show. This is what the Philosopher means when he says that knowledge is not about singular things, but about universals which stand for the individual things themselves. Nevertheless, metaphorically and improperly speaking, the science of nature is said to be about corruptible and movable things, since it is about the terms that stand for these things.

I now prove this. For instance, I take the proposition "Every sensible substance is composed of matter and form". The subject here is either a thing outside the mind or a mental content or a word. If the subject is a thing, it is certainly not a common thing, since such a common thing does not exist, as will be shown later.
alibi frequenter est ostensum, ergo subiicitur aliqua res singularis; et non magis una quam alia; ergo vel quaelibet subiicitur vel nulla; et non quaelibet, quia multae sunt quae non intelliguntur a sciente talem propositionem, quia multae sunt de quibus numquam cogitavit; ergo nulla talis res subiicitur. Ergo subiicitur intention vel vox, et habetur proposition.

Et si dicatur, quod scientia realis est de rebus, ergo cum Philosophia sit scientia realis, oportet quod sit de rebus, et per consequens non est de intentionibus animae.

Similiter, per hoc distinguuntur logica ab aliis scientiis, quia logica est de intentionibus animae, aliae scientiae non.

Ad primum istorum dicendum est, quod scientia realis non est de rebus, sed est de intentionibus supponentibus pro rebus, quia termini propositionum sitarum supponunt pro rebus. Unde in ista propositione seita, 'Omnis ignis est calefactivus', subiicitur una intention communis omni igni et pro omni igne supponit, ideo dicitur 'notitia realis'.

Per idem ad secundum, quod logica per hoc distinguuntur a scientiis realibus, quia scientiae realis sunt de intentionibus, quia de universalibus supponentibus pro rebus; quia termini scientiarum realium, quamvis sint intentiones, tamen supponunt pro rebus. Sed logica est de intentionibus supponentibus pro intentionibus. Sic et in ista propositione, 'Species praedicitur de pluribus differentibus numero', subiicitur una intentionet non supponit nisi pro intentionibus, et non pro rebus extra,

and as has been frequently shown elsewhere. Consequently, it is a singular thing. But there is no more reason why it should be this one singular thing than another. Therefore either every single thing is the subject or none of them are. But not every one of them is the subject, because there are many things unknown to him who knows such a proposition, since there are many things of which he has never thought. Consequently, none of these things is subject in the proposition. Therefore the subject [of such a proposition] is a mental content or a word; which is our intended conclusion.

To this it could be objected: A real science is about things. Since philosophy, then, is a real science, it must be about real things. Consequently, it is not about mental contents.

Likewise, logic is distinguished from other sciences by the fact that logic is about mental contents; whereas the other sciences are not.

To the first of these objections we have to say: A real science is not about things, but about mental contents standing for things; for the terms of scientifically known propositions stand for things. Hence in the following scientifically known proposition, 'All fire is warming', the subject is a mental content common to every fire, and stands for every fire. This is the reason why the proposition is called real knowledge [that is, knowledge concerning real things].

The same answer applies to the second objection. Logic is distinguished from the real sciences in the following manner. The real sciences are about mental contents, since they are about contents which stand for things; for even though they are mental contents, they still stand for things. Logic, on the other hand, is about mental contents that stand for mental contents. For instance, in this proposition, 'A species is predicated of numerically distinct things', the subject is a mental content which stands for mental contents only and not for
quia nulla res extra praedicatur de pluribus nisi forte vox vel scriptum ad placitum instituentium. Est tamen sciemendum, quod logica non negatur esse scientia realis, quasi non sit una res; nam ita vera res est logica sicut scientia naturalis. Sed ideo negatur esse scientia realis, quia non est de intentionibus supponentibus pro rebus. Unde breviter, omnes auctoritates dicentes talem scientiam esse de talibus vel talibus rebus debent sic glossari: ‘Hoc est de terminis supponentibus pro talibus rebus’; sicut quod aliqua scientia dicitur esse de rebus generabilibus et corruptibilibus, hoc est, de terminis supponentibus in propositionibus scitis pro talibus rebus generabilibus et corruptibilibus.

Ex praedictis patet, quomodo de corruptibilibus et mobilibus potest esse una scientia. Nam talibus est unum commune, de quo necessario praedicantur propriae passiones. Sicut hoc commune ‘corpus corruptibile’ est commune omni rei corruptibili et de isto communi praedicantur necessario multa. Sic etiam de impossibilibus potest esse scientia; nam hoc commune ‘impossible’ est commune omnibus impossibilibus, et de isto communi pro impossibilibus aliquid vere praedicatur; nam haec est vera: ‘Omne impossibile repugnat necessario’. Et ita de hoc communi ‘impossible’ aliquid necessario praedicatur et vere scitur. Et sic est de alis. Nam de hoc communi ‘ens per accidentem’ aliquid vere et necessario praedicatur, et ideo de hoc communi potest esse scientia. Et tamen de illo, de quo praedicatur hoc commune, non potest esse scientia, proprie loquendo, sed tantum loquendo improprae, quomodo dixi iam, quod de rebus generabilibus est scientia.

things outside the mind, for nothing outside the mind is predicated of many things, except, by convention, a spoken or written sign.

We should realise, however, that the reason why we deny logic to be a real science is not that it is not a thing, for logic is just as truly a thing as the science of nature is. We deny it to be a real science because it is not about mental contents that stand for real things. Briefly, then, all authorities stating that such a science is about such and such a thing, ought to be glossed in the following manner: ‘This science is about terms which stand for such things’. For instance, to say that a science is about things that can be generated or corrupted means that it is about terms standing for such things in scientifically known propositions.

It is also clear from what has been said how a science of movable and corruptible things is possible. For there is one term common to such things, and of this term proper attributes [passiones] are necessarily predicated. The common term ‘corruptible body’, for instance, is a term common to every corruptible thing, and many attributes are necessarily predicated of it. In like manner there is also a science of impossibilities. For this common term ‘impossibility’ is common to all impossibilities, and of this common term there is something truly predicated, which holds for all impossibilities. For this is true: ‘Any impossibility goes against a necessity’. Thus of this common term ‘impossibility’ something is necessarily predicated and genuinely known. And so it is with other terms. For of the common term ‘accidental being’ something is truly and necessarily predicated. Therefore a science about this common term is possible. And yet, properly speaking, there can be no science about the thing of which this common term is predicated. Only in an improper sense is a science of such a thing possible, as I have already explained when I said that there is a science of ‘generable’ things.
For this reason many distinctions are not valid, for instance that mobile or mutable things can be considered either in this or that way, and that they are mutable considered in one way but immutable in another, and that they are contingent in one way but necessary in another. For with the same case I could say that a man considered in one way is an ass, considered in another way he is an ox, and considered in a third way he is a she-goat.

Therefore, we must understand that it does not depend on your consideration or mine whether a thing is mutable or immutable, contingent or necessary and incorruptible, any more than it does whether you are white or black, or whether you are inside or outside the house. On the other hand, it does certainly depend on the different suppositio of the terms whether a predicate is truly predicated or truly denied of a term. Hence, in order that this proposition be true: “The mutable thing is the subject or is that about which there is a science”, what is important is not the consideration of the thing outside the mind but the suppositio of the term “mutable thing”. For if it has simple suppositio, i.e. if it stands for itself, then our proposition is true: “Mutable thing” (i.e. this common term “mutable thing”) is that about which something is scientifically known. If, however, it has personal suppositio, then it is false, because every singular proposition of this kind is false. Hence, it is the different suppositio of the same term that causes something to be truly denied and truly affirmed of this term. For if, in the proposition ‘Man is a species’, ‘man’ has simple suppositio, the proposition is true; and if, in the proposition ‘Man is not a species’, the same term has personal suppositio, then this proposition likewise is true. However, to say that a thing outside the mind is mutable according to one viewpoint and that it is immutable according to another, is simply false and asinine talk. Thus I could say for instance that Socrates is white from
est albus et propter aliam est niger. Tamen, si vellemen 
uti isto termino acquevoce, puta pro uno homine nigro 
et pro uno alio homine albo, tune ista, 'Sortes est albus', 
est vera, si hoc nomen 'Sortes' accipiatur pro illo homine 
albo, et haec, 'Sortes est niger', est vera, si accipiatur 
pro alio homine nigro. Sicut est de ista, 'Omnis canis 
est animal'; quod si 'canis' stet pro animali latrabili 
tantum, tune est vera, si iste terminus 'canis' stet pro 
celesti sidere tantum, tune est falsa.

Et sic distinguere propositiones est ars tradita a 
Philosopho; non autem dicere, quod eadem res secun-
dum unam considerationem est asinus et eadem secun-
dum aliam considerationem est capra. Nec umquam 
talis modus loquendi a Philosopho inventur; et est 
talis modus loquendi occasio multorum errorum in 
similibus et inexpertis.

Circa secundum dicendum, quod ista scientia distin-
guitur ab aliis vel penes subiecta sua vel penes prae-
dicata; quia hic tam distinctio subietorum quam 
predicatorum conclusionum de subiectis sufficit ad 
distinctionem scientiarum. Tamen, quilter hic sit in-
telligentum, magis forte super Metaphysicam ostendetur. 
Verumtamen sciendum est, quod aliqua eadem veritas 
potest pertinent ad distinctas scientias, sicut alibi est 
ostensum.

Circa tertium dicendum est, quod scientia pro maiori 
parte est speculativa, quia illa scientia quae non est de 
operibus nostris, est speculativa. Sed ista scientia est 
huiusmodi, sicut manifeste patet; ergo ista notitia est 
speculativa. Verumtamen, si sit aliqua pars philosophiae 
naturalis, quae sit de operibus nostris, circa quae eli-
cienda potest notitia illa dirigere, illa pars Scientiae 
Naturalis crit practica, et non speculativa.

one viewpoint, but black from another. Of course, I 
could use the same term (i.e. 'Socrates') in an equivocal 
manner, and I could mean in the first case a white man 
and in the other another man who is black. In this 
case, of course, the proposition 'Socrates is white' is true, 
if this name 'Socrates' refers to the white man; and the 
proposition 'Socrates is black' is also true, if it refers to 
the black man. As it is the same in the proposition 
'E;ery dog is an animal'; if 'dog' stands only for an 
animal which can bark, the proposition is true; but 
if the term 'dog' stands only for a star in the heavens, 
it is false.

The method handed down by the Philosopher is to 
make distinctions concerning propositions in this way, 
and not to say that the same thing from one point of 
view is a donkey, and from another a she-goat. No-
where do we find the Philosopher using such a manner 
of speech. It is just such a way of speaking that occasions 
many errors in the simple and 
uninitiated'.

Concerning the second point, we must recognise that 
this science [philosophy of nature] is distinguished from 
other sciences either by its subjects or by its predicates. 
For here a distinction based either on the subjects 
or on the predicates of conclusions about the subjects 
suffices to distinguish sciences. Just how this has to be 
understood will be better explained, perhaps, when we 
shall deal with the exposition of the Metaphysics. In any 
case, we must recognise that the same truth may pertain 
to different sciences, as we have shown elsewhere.

Concerning the third point, we note that this is a 
thecomical science for the most part. For a science that 
does not treat of what we do is speculative. But this 
science is the kind that is not about what we do; there-
fore it is speculative. But should there be some part 
of the philosophy of nature that provides a directive 
knowledge for the performance of actions, this part 
would be practical, not theoretical.
Circa quartum: Dicitur iste liber *Liber physicorum*, hoc est, liber naturalium secundum modum praexpositum; vel dicitur liber *De physico auditu*, quia forte auditores istum librum audientes solam reportationem scripserrunt. Sed de hoc non est magna cura.

Concerning the fourth point, this book is called the *Physics*, in other words, 'the book concerning the things of nature', in the sense explained above. It is also called the *Lectures on Physics*, perhaps because the audience listening to this book only took notes on it. This, however, is not of much consequence.
II

EPISTEMOLOGICAL PROBLEMS

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I. First I intend to show that our intellect, even in this life, can have two specifically distinct kinds of non-complex knowledge even when it is concerned with the same object under the same aspect. The one may be called intuitive, the other abstractive cognition. . . .

In order to explain this first conclusion, I shall present a few preliminary distinctions and conclusions; after that I shall prove the conclusion which is principally intended.

The first distinction is between two acts of the intellect. The first act is an act of apprehension and relates to everything that can be the term of an act of the intellectual power, whether this be something complex or non-complex. For we apprehend not only that which is non-complex, but also propositions and demonstrations, and impossibilities and necessities, and, in general, anything within the scope of the intellectual power. The second act may be called an act of judgment, by which the intellect not only apprehends its object, but also gives its assent or dissent to it. This act has to do with a proposition [complexum] only. For our intellect does not assent to anything unless we believe it to be true, nor does it dissent from anything unless we believe it to be false. It is clear, therefore, that in reference to a proposition, a twofold act is possible, namely an act of apprehension and an act of judgment.

Proof: It is possible that someone apprehends a proposition, but nevertheless gives neither assent nor dissent to it; this is clearly true, for instance, of indifferent propositions, to which the intellect gives neither assent nor dissent, because otherwise they would not be indifferent for it.

Likewise, a layman who does not know Latin may
multas propositiones in Latino, quibus nec assentit nec dissentit, et certum est, quod intellectus potest assentire aliqui propositioni et dissentire alteri; ergo etc.

Secunda distinctio est: Quod, sicut respectu complexi est duplex actus, sic respectu complexi est duplex habitus correspondens, scilicet unus inclinans ad actum apprehensivum et alius inclinans ad actum iudicativum.

Ista distinctio patet: Quia aliquis post multas apprehensiones alicuius propositionis, quae est neutra, magis sentit se inclinatum ad apprehendendum et cogitandum de illa propositione quam prius; ergo habet habitum inclinatem ad actum apprehensivum. Quod autem sit habitus inclinans ad actus iudicativos, patet per Philosophum vi Ethicorum, ubi ponit intellectum, scientiam etc.

Prima conclusio praeambula est ista: Quod actus iudicativus respectu alicuius complexi praesupponit actum apprehensivum respectu eundem . . .

Ex istis sequitur secunda conclusio: Quod omnis actus iudicativus praesupponit in eadem potentia notitiam incomplexam terminorum: quia praesupponit actum apprehensivum, et actus apprehensivus respectu alicuius complexi praesupponit notitiam incomplexam terminorum . . .

Tertia conclusio est: Quod nullus actus partis sensitivae est causa immediata et proxima, nec partialis nec totalis, alicuius actus iudicativi ipsius intellectus.

Haec conclusio potest persuaderi: Quia qua ratione ad alicuam actum iudicativum sufficiunt illa quae sunt in intellectu tamquam causae proximae et immediatae, et ad omnem actum iudicativum; sed respectu alicuius actus iudicativi sufficiunt ea quae sunt in intellectu, hear many propositions in this language to which he gives neither assent nor dissent. On the other hand, it is certain that the intellect can give its assent to one proposition and its dissent to another proposition. Therefore, apprehension and judgment are distinct.

The second distinction is, that just as in regard to a proposition there can be a twofold act, so also there can be two corresponding habitus: the one inclines the intellect towards an act of apprehension; the other towards an act of judgment.

This distinction is manifest. For after someone has frequently apprehended an indifferent proposition, he finds himself more inclined to apprehend and think about this proposition than he was before. Therefore he has now a habitus inclining him towards acts of apprehension. The fact that there is also a habitus inclining one towards acts of judgment is clear from the statement of the Philosopher in the sixth book of the Ethics, where he affirms the existence of several habitus of understanding, knowledge, etc.

First preliminary conclusion: The act of judgment in reference to a proposition (complexum) presupposes an act of apprehending the same proposition . . .

Second conclusion, following from the preceding discussion [here omitted]. Every act of judgment presupposes in the same faculty a non-complex cognition of the terms; for it presupposes an act of apprehension, and the act of apprehending a proposition presupposes non-complex cognition of the terms. . . .

Third conclusion: No act of the sensitive part of the soul is either partially or totally the immediate and proximate cause of the intellect’s own act of judgment.

A persuasive argument can be adduced for this conclusion. If we assume that contents of the intellect suffice as proximate and immediate causes to produce some act of judgment, then they suffice to produce every such act. Now contents of the intellect suffice for some
Praeterea : Ex quo causae quae sunt in parte intellectiva sufficere possunt, frustra ponuntur aliae causae. 

His praemissis probo primo primam conclusionem sic : Omnis notitia incomplexa aliquorum terminorum, quae potest esse causa notitiae evidentis respectu propositionis compositae ex illis terminis, distinguetur secundum speciem a notitia incomplexa illorum quae, quantumcumque intendatur, non potest esse causa notitiae evidentis respectu propositionis eiusdem. Hoc patet : Quia illa quae sunt eiusmod rationis et aeque perfecta possunt in eodem passo aequaliter dispositive eiusmod rationis, vii. Topicon vom *; sed certum est, quod intellectus potest habere notitiam incompleam, tam de Sorte quam de albediae, cuius virtute non potest evidenter cognoscere, an sit albus vel non, sicut per experimentiam patet ; et praeter istam potest habere notitiam incompleam, virtute cuius potest evidenter cognoscere, quod Sortes est albus, si est albus. Ergo de istis potest habere duas notitias incomplexas, quarum una potest esse causa notitiae evidentis illius propositionis contingentis, et alia, quantumcumque intendatur, non ; ergo specie distinguentur . . . 

Secundo arguo principaliter sic : Omne intelligibile, quod est a solo intellectu apprehensibile et nullo modo sensibile, cuius aliqua notitia incomplea sufficit ad notitiam evidentem alciuius veritatis contingentis de eo, et aliqua notitia incomplea eiusdem non sufficit, potest cognosci ab intellectu duabus cognitionibus specie dis-

* cap. i (152a, 2 sq.)
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tinctis; sed intellectiones, affectiones, delictationes, tristitiae et hujusmodi sunt intelligibiles et nullo modo sensibiles, et aliqua notitia incomplexa earum sufficit ad notitiam evidentem, utrum sint vel non sint, et utrum sint in tali subiecto vel non, et aliqua notitia earuneam non sufficit; ergo etc. Minor, quantum ad primam partem, patet: Quia quilibet experitur in se quod intelligit, diligit, delectatur, tristatur; et ista notitia, cum sit respektu contingentis, non potest accipi ex propositionibus necessariis; ergo oportet quod accipiatur vel a notitia incomplexa terminorum vel rerum importatarum, vel ab aliqua contingente quae accipitur a notitia incomplexa terminorum vel rerum, vel erit processus in infinitum in talibus contingentibus. Tertium est impossibile, quia est ponere statum in talibus. Si detur secundum, vel ergo illa contingens habet aliquem terminum, qui potest accipi ab aliquo sensibili, vel nolum. Primum non potest datur, quia nulla est propositio de aliquo sensibili, ex qua sequatur necessario dilectionem esse in voluntate, ut alii intersit; et per consequens nulla est talis propositio contingens, virtute cuius potest evidenter cognosci, quod hae diligit. Si detur secundum, habetur propositum, quod sola notitia incomplexa terminorum mere intellegibilium sufficit ad notitiam evidentem talis veritatis contingentis. Si detur primum, habetur propositum. Secunda pars illius minoris patet: Quia non est inconvenientis, quod aliquis de aliquo intelligibili ignoreret, utrum sit vel non sit, et tamen quod habeat notitiam incomplexam de illo non plus quam de aliquo sensibili. Unde si intellectus primo videret dilectionem emotions, pleasures, griefs and the like, can be apprehended only by the intellect and not by the sense-faculty. Now some non-complex knowledge of them suffices for evident knowledge of whether they exist or not, and whether or not they exist in such and such a subject. Yet not all non-complex knowledge of them suffices for this; therefore, etc. The first part of the minor premise is shown thus: Everyone experiences in himself that he understands, loves, is pleased, is sad. Since such knowledge concerns contingent facts, it cannot be obtained from necessary propositions. Therefore, either (1) it must be obtained from a non-complex knowledge of the terms, or the things for which the terms stand, or (2) from a contingent proposition obtained from non-complex cognition of the terms or things, or (3) we can go on in infinitum with such contingent propositions. The third case is impossible, since there must be an end in the series of such propositions. If the second case is assumed, then the contingent proposition either contains some term which can be obtained from a sensible object, or it does not. The first alternative cannot be admitted; for there is no proposition about a sensible thing from which it would necessarily follow that love is occurring in the will, as will be made clear elsewhere, and consequently there is no contingent proposition in virtue of which it is evidently knowable that this man loves. If the second alternative is conceded, we have the result we wanted: that a non-complex knowledge of purely intelligible terms is sufficient for evident knowledge of such a contingent truth. The second part of the minor premise is shown thus: There is no inconsistency in the supposition that someone does not know whether a certain intelligible thing exists or does not exist, and has nevertheless a non-complex cognition of it; this is no more inconsistent than the corresponding supposition about a certain sensible thing. If, therefore, someone's intellect should directly perceive another person's love
alterius et esset ita certus de dilectione alterius sicut de
dilectione propria, non esset inconveniens quin post
dilectionem eandem intellectum et tamen ignoraret
ipsam esse, quamvis esset, sicut est de alio sensibili
primo viso et post intellecto.
Ista secunda ratio probat, quod intellectui est possibilis
talis duplex cognitioni, et hoc respectu mere intelligibilis.
Prima autem ratio probat, quod de facto pro statu isto
intellectus habet talem duplicem cognitionem, eam
respectu sensitibilium. . . .
Dico igitur, quantum ad istum articulum, quod
respectu incomplexi potest esse duplex notitia, quare
una potest vocari 'abstractiva' et alia 'intuitiva'. Utrum
autem aliis velint vocare talem notitiam incomplexam
intuitivam, non curo, quia hoc solum intendo prin-
paliter probare, quod de eadem re potest intellectus
habere duplicem notitiam incomplexam specie distinctam.
Scienendum tamen, quod 'notitia abstractiva' potest
accipi dupliciter: Uno modo quia est respectu alicuius
abstractiva multis singularibus, et sic cognitioni abstractiva
non est alius quam cognitione alicuius universalis abstrahibi-
is a multis, de quod dictur post. Et si universale sit vera
qualitas existens subjectiva in anima, sicut potest teneri
probabiliter, concedendum esset, quod illud universale
potest intuitivae videri, et quod eadem notitia est intuitiva
et abstractiva, isto modo accipiendi 'notitiam abstracti-
vam'; et sic non distinguuntur ex opposito. Aliter
accipitur 'cognitione abstractiva', secundum quod abstractit
ab existentia et non existentia et ab aliis conditionibus
quae contingenter accidunt rei vel praedicantur de re.

and he were thus as certain of this other person's love
as of his own love, then there would not be any difficulty
about supposing that later on he could still think of this
love and nevertheless not know whether it continued to
exist, even though it did still exist; just as may happen
with some sensible thing which is first seen and then
thought of.
This second argument proves that it is possible for the
intellect to have this twofold cognition and to have it
about purely intelligible facts, whereas the first proves
that our intellect actually has this twofold cognition in
the present life, and has it even as regards sensible
facts. . . .
I maintain, therefore, . . . that there are two ways
of knowing something non-complex. The one can be
called 'abstractive cognition', the other 'intuitive cogni-
tion'. But I am not concerned whether others wish to
call this non-complex cognition 'intuitive cognition' or
not. For what I intended to prove in the first instance
was just that our intellect can have two specifically
different non-complex cognitions of the same thing.
We must realise, however, that the term 'abstractive
cognition' can be taken in two senses. In one sense it
means cognition that relates to something abstracted
from many singulars; and in this sense abstractive
cognition is nothing else but cognition of a universal
which can be abstracted from many things. We shall
speak about this later. If such a universal is a true
quality existing in the mind as its subject—which is a
probable opinion—then it must be conceded that such
a universal can be intuitively known and that the same
knowledge is intuitive and also abstractive, according
to this first meaning of 'abstractive'. And in this sense
'intuitive' and 'abstractive' are not contrasted.
Abstractive cognition in the second sense abstracts
from existence and non-existence and from all the other
conditions which contingently belong to or are predi-
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Non quod aliquid cognoscatur per notitiam intuitivam, quod non cognoscitur per notitiam abstractivam, sed idem totaliter et sub omni eadem ratione cognoscitur per utramque notitiam. Sed distinguuntur per istum modum: Quia notitia intuitiva rei est talis notitia, virtute cuius potest sciri, utrum sit vel non, ita quod, si res sit, statim intellectus judicat eam esse et evidentiter cognoscit eam esse, nisi forte impediatur propter imperfectionem illius notitiae. Et eodem modo, si esse perfecta talis notitia, per potentiam divinam conservata de re non existente, virtute illius notitiae incomplexae evidenter cognosceret illam rem non esse.

Similiter notitia intuitiva est talis, quod quando aliquae res cognoscuntur, quarum una inhaeret alteri, vel una distat loco ab altera, vel alio modo se habet ad alteram, statim virtute illius notitiae incomplexae illarum rerum scitur, si res inhaeret vel non inhaeret, si distat vel non distat, et sic de aliis veritatis contingensibus, nisi illa notitia sit nimis remissa vel sit aliquod aliud impedimentum. Sicut si Sortes in rei veritate sit albus, illa notitia Sortis et albedinis, virtute cuius potest evidenter cognoscit quod Sortes est albus, dicitur notitia intuitiva. Et universaliter, omnis notitia incomplexa termini vel terminorum seu rei vel rerum, virtute cuius potest evidenter cognosci aliqua veritas contingens, maxime de praesenti, est notitia intuitiva.

Notitia autem abstractiva est illa, virtute cuius de re contingente non potest sciri evidenter, utrum sit vel non sit. Et per istum modum notitia abstractiva abstrahit ab existentia et non-existentia, quia nec per ipsam potest...
evidenter aci\i de re existente quod existit, nee de non existente quod non existit, per oppositum ad notitiam intuitivam.

Similiter, per notitiam abstractivam nulla veritas contingens, maxime de praesenti, potest evidenter cognoscii, sicut de facto patet, quod quando cognosceretur Socrates et albede sua in absens, virtute illius notitiae incomplexae nec potest sciiri, quod Socrates est vel non est, vel quod est albus vel non est albus, vel quod sitat a tali loco vel non, et sic de alia veritate contingens. Et tamen certum est, quod istae veritates possunt evidenter cognoscii. Et omnis notitiae complexae terminorum vel rerum significatorum ultimate reducitur ad notitiam incomplexam terminorum. Ergo isti termini vel rei non alia notitiae possunt cognoscii quam illi, virtute eorum non possunt cognoscii tales veritates contingentes. Et illa sit intuitiva. Et ista est notitiae, a qua incipit notitiae experimentalis: quia universalis illi, qui potest accipere experimentum de aliqua veritate contingente et mediante illa de veritate necessaria, habet aliam notitiam incomplexam de aliquo termino vel re, quam non habet illius, qui non potest sic experiri. Et ideo, sicut secundum Philosophum \( i^{e} \) Metaphysicarum \( i^{e} \) et \( ii^{e} \) Posteriorum \( ii^{e} \), scientia istorum sensibilium quae accipitur per experientiam, de qua ipsa loquuntur, incipit a sensu, id est a notitiae intuitiva sensitiva istorum sensibilium, ita universaliter notitiae scientificae istorum purpure intelligibilium accepta per experientiam incipit a notitiae intuitiva intellectiva istorum intelligibilium.

Est tamen advertendum, quod aliquando propter imperfectio\( e \)m notitiae intuitivae, quia scilicet est valde cognition, it does not enable us to know the existence of what does exist or the non-existence of what does not exist.

Likewise, through abstractive cognition no contingent truth, in particular none relating to the present, can be evidently known. This is clear from the fact that when Socrates and his whiteness are known in his absence, this non-complex knowledge does not enable us to know whether Socrates exists or does not exist, or whether he is white or is not white, and the same for other contingent truths. But yet it is certain that these truths can be evidently known. And any complex knowledge of terms, or of things signified by terms, is ultimately reduced to non-complex knowledge of terms. Hence these terms or things can be known by a cognition which is different from that which cannot give us knowledge of such contingent truths; and this will be intuitive cognition. And it is from this that empirical knowledge begins; for, generally speaking, he who is enabled by observation to know a contingent truth and, by means of this, a necessary truth, has non-complex knowledge of some term or thing which another who is unable to make this observation cannot have. And therefore, just as the knowledge of sensible facts that is obtained from experience (as the Philosopher says in the first book of the Metaphysics and in the second book of the Posterior Analytics) begins with the senses, i.e. from a sense-intuition of these sensible facts, so in general the scientific knowledge of these purely intelligible facts of experience begins with an intellective intuition of these intelligible facts.

Still, it is to be noted that at times it may happen that no contingent truths, or only a few, can be known about a thing that we know intuitively, owing to the imperfe-

\( ^{*} \) cap. i (980, 29 sq.) \( ^{\dagger} \) cap. xix (100, 4 sqq.)
imperfecta et obscura vel propter aliqua impedimenta, quod vel nullae vel paucae veritates contingentes de re sic intuitive cognita possunt cognoscere.

2. *Utrum cognitio intuitiva possit esse de obiecto non-existente?*

   *Quod non*: Quia contradictio est, quod visio sit et nihil videatur; ergo contradictio est, quod visio sit et objectum visum non sit.

   *Contra*: Visio est qualitas absoluta distincta ab obiecto; ergo potest sine contradictione fieri sine objecto.

   *In ista quaestione ponum duas conclusiones. Prima est*, quod cognitio intuitiva potest esse per potentiam divinam de obiecto non existente. *Quod probo primo per articulum fidei 'Credo in Deum Patrem omnipotentem' quem sic intelligo*: quod quidlibet est divinae potentiae attribuendum quod non includit manifestam contradictionem; sed istud fieri a Deo non includit contradictionem; ergo etc.

   *Praeterea*: In illo articulo fundatur illa propositione famosa theologorum: 'Quidquid Deus producit mediante causis secundis potest immediate sine illis producere et conservare'. *Ex ista propositione arguo sic*: Omnem effectum quem potest Deus mediante causa secunda potest immediate per se; sed in notitiam intuitivam corporalem potest mediante obiecto; ergo

   *Praeterea*: In illo articulo fundatur illa propositione famosa theologorum: 'Quidquid Deus producit mediante causis secundis potest immediate sine illis producere et conservare'. *Ex ista propositione arguo sic*: Omnem effectum quem potest Deus mediante causae secunda potest immediate per se; sed in notitiam intuitivam corporalem potest mediante obiecto; ergo

   *Epistemological Problems*

   2. *Intuitive cognition of non-existing things*

   2. *Whether intuitive cognition can be had of an object that does not exist?*

   *It cannot*: For it is a contradiction that there should be an act of seeing and nothing be seen; therefore it is a contradiction that there should be an act of seeing but the seen object not exist.

   *On the contrary*: Vision is a non-relative quality distinct from the object; without contradiction, therefore, it can occur without an object.

   *On this question I lay down two conclusions. First*: Intuitive cognition of a non-existent object is possible by the divine power. *I prove this first by the article of faith 'I believe in God the Father almighty', which I understand in the following sense*: Anything is to be attributed to the divine power, when it does not contain a manifest contradiction. But that this (i.e. cognition of a non-existent object) should be produced by the power of God, does not contain a contradiction; therefore, etc.

   *Again, on this article is based the famous maxim of the theologians*: 'Whatever God can produce by means of secondary causes, He can directly produce and preserve without them'. *From this maxim I argue thus*: Every effect which God can produce by means of a secondary cause He can produce directly on His own account. God can produce intuitive sense cognition by means
of an object; hence He can produce it directly on His own account.

Furthermore, every non-relative reality that differs in its place and its subject [of inherence] from another non-relative reality can still exist by virtue of the divine power when the other non-relative reality is destroyed. But seeing a star in the sky, whether by sense or by intellect, is such a reality; therefore, etc.

You may object that according to this argument it follows that there could be an intuitive and beatific vision of God without His actual presence as an object actually present to the intellect; which is false and erroneous. I answer that there is no logical connexion in the following way of arguing: ‘Because God can make such an act of seeing without a created object (on which this act depends only as a secondary cause), therefore, there can be an intuitive and beatific vision of God without His actual presence as an object actually present to the intellect (an object on which this is dependent as its first cause)’. For though, according to the Doctors, God can make the proper effects of secondary causes without these secondary causes, nevertheless He cannot make any effect without its first cause. For this reason, just as it is not possible that a colour should, as efficient cause, cause itself to be seen in the eye unless it is actually present, so in like manner it is not possible that God should cause an act of seeing Him in the intellect unless His actual presence is given.

Second conclusion: So far as natural causes are in question, an intuitive cognition cannot be caused or preserved if the object does not exist. The reason is this. A real effect cannot be caused, or brought from nothing into being, by that which is nothing. Hence, if we are speaking of the natural mode of causation, it requires for its existence both a productive and a preservative cause.

You may object: ‘If someone sees the sun and then
locum, appareat sibi quod vident sollem in eodem situ et eadem magnitudine; ergo visio solis remanet ipso absente; et eadem ratione remaneret ipso non existente: Respondeo: non manet visio solis, sed manet aliqua qualitas, puta lux impressa occulo, et illa qualitas videtur. Et si intellectus formet talam propositionem, 'Lux videtur in eodem situ, etc.', et sibi assentiat, decipitur propter illam qualitatem impressam visam.

Ad argumentum principale dico, quod contradictio est, quod visio sit et quod illud quod videtur non sit in effectu nec esse possit. Ideo contradictio est, quod chimaera videatur intuitive. Sed non est contradictio, quod illud quod videtur nihil sit in actu extra suam causam, dummodo possit esse in effectu, vel aliquando fuit in rerum natura. Et sic est in proposito. Unde Deus ab aeterno vidit omnes res factibles, et tamen tunc nihil fuerunt.

3. Utrum primum cognitum ab intellectu primitio generationis sit singularis?

Quod non: Quia universale est primum et proprium objectum intellectus; ergo primo cognoscitur primitate generationis.

Contra: Idem omnino est objectum sensus et intellectus; sed singularis est primum objectum sensus tali primitate; ergo etc.

Hic primo dandum est intellectus quaestionis, secundo ad quaestionem.

3. Whether the singular is the first thing known, as regards the origin of cognition?

It is not the first thing known: for the universal is the first and proper object of the intellect; and is, therefore, the first thing known, as regards the origin of cognition.

On the contrary: Both intellect and sense have the very same object; but if we are speaking of the origin of cognition, a singular thing is the first object of the sense faculty; therefore, etc.

Answer: We must first clarify the meaning of the question, and then answer it.
Concerning the first point we have to realise that here ‘singular thing’ does not mean everything that is numerically one; for, in this sense, everything is singular. Instead we take ‘singular thing’ here for a thing which not only is numerically one, but in addition is not a natural or conventional sign belonging in common to many things signified. In this sense neither a written expression nor a concept nor a significant oral utterance, but only a thing which is not a common sign, is a singular thing.

Secondly, we should know that our question does not refer indiscriminately to any cognition of a singular thing. For in a sense every universal cognition is a cognition of a singular thing, since such a universal cognition gives us knowledge only of a singular thing or singular things. Our question rather refers to a proper and simple cognition of a singular thing.

On the second point: Granted that the question is taken to be about proper cognition of a singular thing, I maintain in the first place that a singular thing, taken in the above sense, is what is first known, in a cognition that is simple and proper to this singular thing.

This conclusion is proved in the following manner: What is first known by such cognition is an extra-mental thing which is not a sign; but everything outside the mind is singular; therefore, etc.

Furthermore, the object precedes the act which is proper to it and that comes first in order of origination; but only a singular thing precedes such an act; therefore, etc.

Secondly, I maintain that this cognition which is simple, proper to a singular thing, and the first to be acquired, is an intuitive cognition. That such a cognition is first, is clear; for abstractive cognition of a singular thing presupposes an intuitive cognition of the same object, and not vice versa. The fact that it is proper to one singular thing is likewise clear; for it is
stanti vel nata est causar, et non est nata causar ab alia re singulari, etiam eiusdem speciei; ergo etc.

Tertio dico: Quod cognitio prima abstractiva primitate generationis et simplex non est cognitio propria singulari, sed est cognitio communis aliquando, item semper. Primum patet: quia non habetur cognitio propria simplic de aliquo singulari pro tempore pro quo non potest haber cognitio eius specifica; sed quandoque ita est, sicut patet de veniente a remotis, quod causat talem sensationem, virtute cuius possum tantum judicare, quod illud vidi est esse. Manifestum est, quod in illo caso cognitio abstractiva, quam habeo primo primitate generationis, est cognitio entis et nullius inferioris, et per consequens non est conceptus specificus nec est conceptus proprius singularis. Secundum patet: quia nulla cognitio abstractiva simplex est plus similitudo unius rei singularis quam alterius respectu simillimi, nec causatur a re nec nata est causar; ergo nulla talis est proprius singulari, sed quaelibet est universalis. Sed hic sunt aliqua dubia. Primum est, quia videtur quod cognitio intuitiva non sit propria, quia quaecumque intuitiva demonstratur, aequaliter assimilatur unius singulari sicut alteri simillimi, et aequaliter representat unum sicur alterum; ergo non plus videtur esse cognitio unius quam alterius. Secundum dubium est, quia si cognitio prima abstractiva sit aliando cognitio et conceptus entis, sicut dies de veniente a remotis, ergo cedem modo prima intuitiva in eodem caso erit cognitio communis entis, quia impossibile est, quod eiusdem rei sint plures conceptus immediately caused, or is of such a nature as to be so caused, by this singular thing; it cannot naturally be caused by another singular thing, even of the same species.

Thirdly, I maintain that the abstractive cognition which is simple and comes first in order of origination is not proper to a singular thing, but is sometimes, indeed always, a cognition common to many. The first part of this thesis is shown thus: We have no proper and simple cognition of a singular thing, as long as we can get no specific knowledge of it. Now this is sometimes the ease, for instance, when somebody, approaching from a distance, causes in me a sense-perception with the help of which I can judge only that what I see is an existent. In this case it is clear that my first abstractive cognition (first, that is, in order of origination) is the cognition of existence, and of nothing less general; consequently it is not a specific concept nor a concept proper to a singular thing. The second part of the thesis is likewise clear. For no simple abstractive cognition is more a likeness of one singular thing than of another thing very similar to this thing, nor is such cognition caused by a thing or of such nature as to be caused by a thing; therefore no such cognition is proper to a singular thing, but every such cognition is universal.
simplices proprii; sed de uno veniente a remotis possum habere unam visionem, per quam tantum iudico illud esse ens, aliarm, per quam iudico illud esse animal, tertiam, per quam iudico illud esse hominem, quartam, per quam iudico illud esse Sortem; sed illae visiones sunt alterius rationis; ergo omnes illae non possunt esse cognitiones propriae illius singularis visi.

Tertium est, quia videtur quod prima abstractiva sit propria, maxime quando obiectum est debito modo approximatum: quia priam abstractivam possum recordari de cadem re prius visa, quod non posset fieri nisi haberem abstractivam proprian.

Quartum dubium est, quia videtur secedundum iam dicta, quod conceptus generis potest abstrahii ab uno individuo, puta conceptus 'animalis', sicut potest de veniente a remotis, quando habeo talem visionem, per quam iudico illud visum esse animal.

Ad primum istorum dico, quod intuitiva est propria cognition singularis, non propter maiorem assimilacionem uni quam alteri, sed quia naturaliter ab uno et non ab altero causatur nec potest ab altero causari.

Si dics 'Potest causari a solo Deo', verum est. Sed semper nata est talis visio causari ab uno objecto creato et non ab alo. Et si causatur naturaliter, causatur ab uno et non ab alo, nec potest causari. Unde propter similitudinem non plus dicitur intuitiva propria cognition singularis quam abstractiva prima, sed solum propter causalitatem, nec alia causa potest assignari.

Ad secundum dubium dico, quod aliquando illae visiones sunt eiusdem speciei et solum different sicut several simple concepts of the same thing. Nevertheless, in the case of one coming from afar, I can have one look from which I judge that this is an existent, another from which I judge that this is an animal, a third one from which I judge that this is a man, and a fourth one from which I judge that this is Socrates. Yet these various looks are different in kind; therefore, it is not possible that all of them are proper to the singular thing seen.

Third doubt: It seems that the first abstractive cognition is a proper one, especially when the object is sufficiently close, because by the first abstractive cognition I can recall the same thing as I saw before. But this could not happen, unless my abstractive cognition were proper to the thing.

Fourth doubt: According to what has been said it seems possible that the concept of a genus could be abstracted from one individual, let us say, the concept 'animal'; as is clear from the case of one coming from a distance, when I see enough to judge that what I am seeing is an animal.

To the first doubt, I say that we have a cognition proper to one singular thing, not on account of a greater likeness to one than to another, but because this intuitive cognition is naturally caused only by the one and not by the other, and cannot be caused by the other.

If you say that it may be caused by God alone, I admit that this is true. Nevertheless, where created things are concerned, it is always of the nature of such a look to be caused by one object and not by another; and if it is naturally caused, it can be caused only by the one object and not by the other. Therefore the reason why intuitive cognition, rather than the first abstractive cognition, is said to be proper to the singular thing, is not similarity, but only causality; no other reason can be assigned.

To the second doubt, I say that sometimes such looks are of the same species and differ only as the more or
magis perfectum et minus perfectum in eadem specie, puta si videatur aliquid ex partibus eiusdem rationis, in quo non essent plura accidentia sensibilia, a visu, tunc per approximationem illius visibilis, puta albi, intenditur visio et fit clarius; et secundum hoc potest causari diversum et diversum judicium, quod tale visum est ens vel corpus vel color vel albedo etc.

Si dicies: 'Illa different specie quae non possunt causare effectum eiusdem speciei; sed visio clara et obscura sunt huiusmodi; igitur etc.' Respondeo et dico, quod quantumcumque causae auctae et intensae, si non possunt causare effectum eiusdem speciei, different specie, et aliter non. Nunc autem illa visio aucta et intensa potest in eadem effectum in quem potest visio clara, et per consequens sunt eiusdem speciei. Aliquando tamen visio clara et obscura sunt alterius speciei, puta quando diversa objecta videntur, puta si videatur scutum diversis coloribus coloratum secundum minorum et maiorem approximationem; sed illae visiones non sunt eiusdem objecti sed diversorum.

Ad tertium dico, quod videndo aliquid habeo aliquam cognitionem abstractam propriam; sed illa non erit simplex, sed composita ex simplicibus. Et ista notitia composita est principium recordationis, quia per hoc recordor de Sorte, quia vidi eum sic figuratum, coloratum, talis longitudinis et talis latitudinis et in tali loco, et per illud compositum recordor me vidisse Sortem. Sed circumscribas omnes conceptus simplices praepter unum, non plus recordaris de Sorte per illum quam de alio homine sibi similiumi; bene possim recordari me vidisse, sed utrum sit Sortes vel Plato, nescio. Et ideo cognitione abstracta simplex non est propria singulari: sed composita bene potest esse propria.

Ad quatum dico, quod conceptus generis numquam

less perfect differ within the same species. For instance, if we saw something composed only of homogeneous parts, where no more than one accident is present, let us say whiteness, is visible, then as this thing approaches, our vision becomes stronger and clearer, and accordingly different judgments are possible, viz. that what we see is an existent, or a body, or a color, or whiteness, etc.

You object, perhaps: 'Things which cannot cause the same specific effect differ specifically. But clear and obscure vision cannot; therefore, etc.' I answer: 'If certain causes, no matter how much they are intensified and increased, cannot cause an effect specifically the same, then they are specifically different; otherwise not. But this vision, if increased and intensified, can produce every effect that clear vision can. Consequently obscure and clear vision are of the same kind.' Sometimes, however, clear and obscure vision are specifically different: for instance, if different objects are seen, as when something like a many-coloured shield is viewed from a greater or lesser distance. But these views are not of the same object but of different objects.

To the third doubt, I say that when I see something, I do have a proper abstractive cognition; only it will not be a simple cognition, but one composed of simple cognitions. This composite knowledge is the basis of recollection; for I recall Socrates because I have seen him with such a figure, colour, height and width, and in such a place, and by putting these together I recall having once seen Socrates. But if you leave out all simple concepts except one, you cannot by means of this have memory relating to Socrates rather than any other man who is very similar to him; I can well recall having seen someone, but whether it was Socrates or Plato, I do not know. Therefore a simple abstractive cognition is not proper to a singular thing: however, a composite cognition may well be proper to one.

To the fourth doubt I answer: 'The concept of a
abstrahitur ab uno individuo. Et ad illud de veniente
a remotis dico, quod judico illud esse animal, quia prius
habeo conceptum animalis, qui conceptus est genus, et
ideo per illum conceptum ducor in notitiam recorda-
тирован. Unde si prius non haberem conceptum generis
animalis, nihil indicarem nisi quod illud viderem est
aliquid.

Et si quaeras: Quae notitia abstractiva primo habe-
tur mediante intuitiva? Respondeo: 'Aliquando con-
ceptus entis tantum, aliquando conceptus generis, ali-
quando conceptus speciei specialissimae, secundum quod
objectum est magis vel minus remotum'. Semper tamen
imprimitur conceptus entis, quia quando obiectum est
debito modo approximatum, simul causatur a re extra
singulari conceptus specificus et conceptus entis.

Ad principale dico, quod universale est objectum
primum primitae adaequationis, non autem primitate
generationis.

De universali

4. Cum non sufficiat logico tam generalis notitia ter-
minorum, sed oportet cognoscere magis in speciali terminos,
ideo postquam de divisionibus generalibus terminorum
tractatum est, de quibusdam contentis sub aliquibus
illarum divisionum prosequendum est.

Est autem primo tractandum de terminis secundae
intentionis, secundo de terminis primae intentionis.
Dictum est autem, quod termini secundae intentionis
sunt tales 'universale', 'genus', 'species', etc. Ideo de
illis, quae ponuntur quinque universalia, est modo
dicendum. Primo tamen dicendum est de hoc communis

1 See Introduction above, p. xxxiii

genius is never abstracted from only one individual'.
Concerning the instance of a man coming from a distance,
I say that I judge him to be an animal, since I am
already in the possession of the concept 'animal', a con-
cept that is a genus; and therefore, by means of this
concept I am led to recognition. Hence, if I did not
already possess the concept of the genus 'animal', I
would judge only that this which is seen is something.

If you ask, which abstractive cognition is first obtained
by the help of intuitive cognition, I answer: 'Sometimes
only the concept 'existent', sometimes the concept of a
genus, sometimes the concept of the ultimate species
but it all depends on whether the object is more or less
remote'. However, we always get an impression of the
concept 'existent', because if the object is sufficiently
close, a concept of the species and the concept 'existent'
are simultaneously caused by the extra-mental singular
thing.

To the principal objection I answer: A universal is
the first object in the order of adequacy [i.e. of ade-
quacy as object of the intellect], but not in the order
of origin of cognition.

The problem of universals

4. A general knowledge of terms is not sufficient for the
logician; he must also know terms more in detail.
Therefore, having dealt with the general divisions of
terms [in the previous chapters of the Summa logicae]
we must turn to some of the things that come under
members of this division.

First we have to treat terms of second intention 1;
secondly, terms of first intention. It has been said that
terms of second intention are those like 'universal',
'genus', 'species', etc. Hence we must say something
about those which are set up as the five predicables.
But first we must speak of the general term 'universal,'