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Volume 6, numéro 1, 1950

URI : <https://id.erudit.org/iderudit/1019829ar>

DOI : <https://doi.org/10.7202/1019829ar>

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Éditeur(s)

Laval théologique et philosophique, Université Laval

ISSN

0023-9054 (imprimé)

1703-8804 (numérique)

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Citer cet article

Dolan, S. (1950). Resolution and Composition in Speculative and Practical Discourse. *Laval théologique et philosophique*, 6(1), 9–62.
<https://doi.org/10.7202/1019829ar>

RESOLUTION AND COMPOSITION IN SPECULATIVE AND PRACTICAL DISCOURSE

INTRODUCTION: THE PROBLEM

The most common and simple notions have a way all their own of generating a confusion that propagates itself in a kind of geometrical proportion — as St. Thomas warns us at the beginning of his *De Ente et Essentia*. Because these common notions are supposed to be most knowable for us, we are frequently tempted to presume upon their very simplicity as a guarantee of our understanding of them.

In this category, it seems to us, must be placed the common definitions of the ways in which the human mind proceeds in order to know speculatively or practically. At first glance, it would appear that these modes of knowing are quite well understood. Indeed, who would deny that resolution or analysis, the mode characteristic of the speculative order, is a process from the complex to the simple, from the whole to the parts? Or who would question the fact that the contrary process, from the simple to the complex, from the parts to the whole, defines the compositive mode which is found properly in the practical order?

Certainly, we do not intend to maintain here that these notions are false. But we are going to see that the moment we attempt to account for the various uses of these processes, we find that their common notions are either inadequate to explain all their uses, or, if we insist upon using the common notions without further distinctions, the whole doctrine of resolution and composition collapses.

More precisely still, we shall see presently that if we attempt to apply blindly these common definitions to every process designated resolute or compositive by St. Thomas, we might well be obliged to abandon the common definitions or disagree with St. Thomas's use of them. Our present study is an effort to show that the common notions of resolution and composition are adequate explanations of the doctrine in general; but, in order to understand St. Thomas's application of the general doctrine a number of distinctions must be pointed out.

There are numerous texts wherein St. Thomas defines what we have called the common notions of resolution and composition.¹ In his com-

¹ "Sic ergo patet quod rationalis consideratio ad intellectualem terminatur secundum viam resolutionis, in quantum ratio ex multis colligit unam et simplicem veritatem. Et rursum, intellectualis consideratio est principium rationalis secundum viam compositionis vel inventionis, in quantum intellectus in uno multitudinem comprehendit."—*In Boetium de Trinitate*, q.6, a.1, ad tert. quaest. (ed. P. WYSER, Louvain 1948).

"Ratio enim, ut prius dictum est, procedit quandoque de uno in aliud secundum rem, ut quando est demonstratio per causas vel effectus extrinsecos, componendo

mentary on the First Book of the *Ethics*, however, there occurs a capital text that not only defines these two modes of proceeding, but also designates the realms in which they are to be found.

Et quia secundum artem demonstrativae scientiae, oportet principia esse conformia conclusionibus, amabile est et optabile, de talibus, idest tam variabilibus, tractatum facientes, et ex similibus procedentes ostendere veritatem, *primo* quidem grosse idest applicando universalia principia et simplicia ad singularia et composita, in quibus est actus. Necessarium est enim in qualibet operativa scientia, ut procedatur modo composito. E converso autem in scientia speculativa, necesse est ut procedatur modo resolutorio, resolvendo composita in principia simplicia.¹

Thus, according to St. Thomas, the compositive or synthetic mode moves from the simple to the complex, while the resolutive mode moves contrarily, from the complex to the simple. The former is found in the practical order, while the latter is encountered in the speculative.

However, difficulties arise the moment we formulate the modes of proceeding in the manner just enunciated.

In the first place, demonstration *propter quid* seems to create a difficulty for our common notion of the resolutive mode. Demonstration *propter quid* is the most perfect instrument of speculative science, since science is the effect of demonstration, and, above and beyond all, of demonstration *propter quid*. Now, the most cursory examination of the requirements of a *propter quid* demonstration will reveal that it must proceed a priori.² The principles of a strictly demonstrative syllogism must contain the cause of the effect which is expressed in the conclusion. This is why our science may be defined as a "conclusionum per discursum a causis in effectus."³ The *propter quid* syllogism proceeds from cause to effect, from what is simple to what is complex, and not from some composite to the universal formal principles of that composite. It would seem, then, that the most perfect type of demonstration proceeds compositively, even though it is found exclusively in speculative science. How can the resolutive mode be attributed to speculative science if what is perfectly speculative proceeds compositively?

There remains to be considered a difficulty that seems to call into question the compositive character of practical discourse. We refer to the Aristotelian doctrine of counsel. There can be no dispute about the practical nature of the discourse of counsel; it is certainly, at least, formally practical.⁴ And yet Aristotle, in the Third Book of the *Ethics* shows that counsel proceeds resolutely. St. Thomas, commenting on this passage

quidem cum proceditur a causis ad effectus [quasi resolvendo cum proceditur ab effectibus ad causas], eo quod causae sunt effectibus simpliciores et magis immobiliter et uniformiter permanentes."—*Ibid.*

"...Procedere enim a causis in effectus, est processus compositivus, nam causae sunt simpliciores effectibus. Si autem id quod est prius in cognitione, sit posterius in esse, est processus resolutorius; utpote cum de effectibus manifestis iudicamus, resolvendo in causas simplices."—*Ia IIae*, q.14, a.5, c.

¹ In *I Ethicorum*, lect.3 (ed. MARIETTI), n.35.

² Cf. ARISTOTLE, *Posterior Analytics*, I, chap.2, 71b19ff.

³ *Ia IIae*, q.14, a.1, ad 2.

⁴ Cf. J. DE MONLÉON, "Note sur la division de la connaissance pratique," in *Revue de Philosophie*, Vol. XXXIX, Paris 1939, pp.189-198; HENRI PICHETTE, "Considérations sur quelques principes fondamentaux de la doctrine du spéculatif et du pratique," in *Laval théologique et philosophique*, Québec 1945, Vol.I, n.1, pp.52-70.

and, again, in an article on counsel in the *Prima Secundae*, teaches the same doctrine. In the commentary on the passage in the *Ethics* we read:

Et dicit quod ideo causa, quae prima est in operatione, est ultima in inventione, quia ille qui consiliatur videtur inquirere, sicut dictum est, per modum resolutionis cujusdam. Quemadmodum diagramma, quae est descriptio geometrica, in qua qui vult probare aliquam conclusionem oportet quod resolvat conclusionem in principia quousque pervenit ad principia prima indemonstrabilia. Omne autem consilium est quaestio, idest inquisitio quaedam, etsi non omnis quaestio, idest inquisitio, sit consilium, sicut inquisitio mathematica. Sola enim inquisitio de operabilibus est consilium. Et quia consilians resolutive inquit, necesse est quod ejus inquisitio perducatur usque ad id quod est principium in operatione. Quia id quod est ultimum in resolutione, est primum in generatione sive in operatione.¹

It is, indeed, remarkable that the mode of proceeding in the practical discourse of counsel should be illustrated by mathematical proof — in some ways the speculative science most proportioned to our minds.

In raising the question in the *Prima Secundae*, whether counsel proceeds resolutively or compositively, St. Thomas's reply is, if possible, even more formal.

... In omni inquisitione oportet incipere ab aliquo principio. Quod quidem si, sicut est prius in cognitione, ita etiam sit prius in esse, non est processus resolutorius, sed magis compositivus: procedere enim a causis in effectus, est processus compositivus, nam causae sunt simpliciores effectibus. Si autem id quod est prius in cognitione, sit posterius in esse, est processus resolutorius: utpote cum de effectibus manifestis iudicamus, resolvendo in causas simplices. Principium autem in inquisitione consilii est finis, qui quidem est prior in intentione, posterior tamen in esse. Et secundum hoc, oportet quod inquisitio consilii sit resolutiva, incipiendo scilicet ab eo quod in futuro intenditur quousque perveniatur ad id quod statim agendum est.²

What seems still more serious, the reply to the first objection in this same article seems to deny the compositive mode to all save completely practical knowledge. The objection reads as follows:

Consilium enim est de his quae a nobis aguntur. Sed operationes nostrae non procedunt modo resolutorio, sed magis modo compositivo, scilicet de simplicibus ad composita. Ergo consilium non semper procedit modo resolutorio.

St. Thomas responds:

AD PRIMUM ERGO DICENDUM quod consilium est quidem de operationibus. Sed ratio operationum accipitur ex fine: et ideo ordo ratiocinandi de operationibus, est contrarius ordini operandi.³

Notice that St. Thomas does not deny the minor presented in the objection; rather, he distinguishes the minor by pointing out the difference between the order of reasoning about an operable and the order of operation. The order of reasoning about operables, however, would seem to include the whole order of practical knowing that falls short of the *imperium* of prudence. If, then, there is an opposition between the order of reasoning about operables and the order of operating according as the former proceeds resolutively while the latter proceeds compositively, we are forced to the conclusion that all formally practical knowledge — including counsel — is resolute in mode.

The probability of this conclusion seems to be reinforced from another, and, perhaps, more formal point of view. For, in setting down the criteria

¹ In *III Ethic.*, lect.8, n.476.

² *Ia IIae*, q.14, a.5, c.

³ *Ibid.*, obj.1 and ad 1.

whereby the mode of a given cognitive processus must be determined, St. Thomas says¹ that if the principles of the processus are prior both *in esse* and in knowledge, then the processus will be compositive; whereas, if its principles are prior only in our knowledge, then the processus will be resolute. Now, when, in the Third Book of the *De Anima*, Aristotle is treating of the appetite, he points out that the will or desire is the principle of the practical intellect. But the will or desire of the end is prior in our knowledge only. Commenting on this passage, St. Thomas says:

Et manifestum est, quod omnis appetitus est propter aliquid. Stultum enim est dicere, quod aliquis appetat propter appetere. Nam appetere est quidam motus in aliud tendens. Sed illud cuius est appetitus, scilicet appetibile, est principium intellectus practici. Nam illud, quod est primo appetibile, est finis a quo incipit consideratio intellectus practici. Cum enim volumus aliquid deliberare de agendis, primo supponimus finem, deinde procedimus per ordinem ad inquirendum illa, quae sunt propter finem; sic procedentes semper a posteriori ad prius, usque ad illud, quod nobis imminet primo agendum. Et hoc est quod ultimum de actione intellectus practici, est principium actionis; id est illud, unde debemus actionem incipere...²

The mode described here as characteristic of the practical intellect proceeds, indeed, from what is posterior, and, therefore, from what is complex toward what is prior and more simple. But such a processus, according to the text cited earlier from the First Book of the *Ethics*, is resolute and proper to the speculative intellect.

Thus, even though St. Thomas adheres to the common notions of resolution and composition and attributes them to the speculative and practical orders respectively,³ he does not hesitate to designate certain types of practical discourse as resolute in mode. Further, he subscribes to an explanation of demonstration *propter quid* that seems to be compositive in its mode of proceeding. Are these positions doctrinally inconsistent?

In order to answer this question adequately it will be necessary for us to penetrate more deeply into the modes of proceeding of speculative and practical science. For, it is only in this way that we shall be in a position to define with greater determination the resolute and compositive modes. Now, since these modes are thought to be characteristic of speculative and practical knowledge, it seems reasonable to assume that an inquiry into these two kinds of knowledge must tell us something of their respective modes of proceeding.

To this end, we shall devote the first part of our study to the general doctrine of the speculative and the practical as this is found in some of the well-known texts of St. Thomas. In the second part we shall be concerned with a somewhat detailed analysis of the distinct types of discourse through which the human mind moves in order to know speculatively or practically.

With regard to the general doctrine of speculative and practical knowledge, we must first of all set down the basic distinctions between these two kinds of knowing. Subsequently, reviewing those passages wherein St. Thomas alludes to the modes of proceeding characteristic of the speculative and of the practical, we shall attempt to formulate more precise notions of the resolute and compositive modes.

¹ *Ia IIae*, loc. cit.

² *In III de Anima*, lect.15 (ed. MARIETTI), n.821.

³ *In I Ethic.*, lect.3, n.35.

I. SPECULATIVE AND PRACTICAL KNOWLEDGE

In his commentary on the *De Trinitate* of Boethius, St. Thomas, first noting that the speculative intellect differs from the practical intellect by diverse ends, goes on to distinguish speculative knowledge from practical knowledge according to diverse objects.

...Theoricus sive speculativus intellectus in hoc proprie ab operativo sive practico distinguitur, quod speculativus habet pro fine veritatem quam considerat, practicus vero veritatem consideratam ordinat in operationem tanquam in finem. Et ideo dicit PHILOSOPHUS in *III de Anima*, quod differunt ad invicem fine, et in *II Metaphysicorum* dicitur, quod 'finis speculativae est veritas, sed finis operativae scientiae est actio'. Cum ergo oporteat materiam fini esse proportionatam, oportet practicarum scientiarum materiam esse res illas, quae a nostro opere fieri possunt, ut sic earum cognitio in operationem quasi in finem ordinari possit. Speculativarum vero scientiarum materiam oportet esse res quae a nostro opere non fiunt. Unde earum consideratio in operatione(m) ordinari non potest sicut in finem, et secundum harum rerum distinctionem oportet scientias speculativas distingui.¹

It will be necessary to recall here that the diverse ends which differentiate the speculative and practical intellects are each of them ends in the proper sense. However, truth, end of the speculative intellect, is an end for the will only in so far as it is the perfection of the intellect; whereas the good, end of the practical intellect, is properly the end of the will itself.²

Thus, since the speculative and the practical intellects have different ends, speculative and practical knowledge are specified by diverse objects. Speculative knowledge is specified by a non-operable object, practical knowledge by an operable object. As John of St. Thomas reminds us, this is a diversity of formal objects, because it involves diverse abstraction and diverse immateriality upon which the formal diversity of the sciences rests.³

Now, with respect to the operable objects of practical knowledge, it is possible to have two very different kinds of knowledge. We may, for example, know a house through a definition stating its genus and differentia. Such a knowledge would never help us to build a house. Again, let us suppose that we possessed the kind of knowledge about a house that can direct its building; it is still conceivable that we might have no intention of exercising such knowledge. Thus, even though speculative and practical knowledge are distinguished formally in terms of diverse objects,

¹ *In de Trin.*, q.5, a.1, c.

² Cf. HENRI PICHETTE, *op. cit.*, pp.53-54. The present analysis is based upon the studies written by H. PICHETTE and J. DE MONLÉON (cf. *op. cit.*) on this subject.

³ "...Practicum et speculativum important differentias intra genus intelligendi; nam differunt secundum diversam rationem objecti intelligibilis, id est, secundum diversam immaterialitatem seu abstractionem, quae ad rationem formalem et essentialem intra genus intellectivum pertinet. Quod autem sic differant, constat: quia obiectum ut speculabile solum importat et attingit obiectum secundum rationem quidditatis suae, et eorum quae quidditatem consequuntur; ideoque respicit veritatem abstrahendo ab exercitio existendi. At vero practicum respicit obiectum ut stat sub exercitio existendi, et quantum ad ipsam executionem; ergo concernit id quod speculatio relinquit, et a quo abstrahit; ergo diversa est abstractio objecti unius et alterius, et diversa immaterialitas; ergo et diversa intelligibilitas essentialiter, quia essentialis ratio intelligibilitatis ab immaterialitate sumitur."—JOHN OF ST. THOMAS, *Cursus theologicus* (ed. SOLESMES), T.I, disp.2, a.10, n.5, pp.359-396.

an adequate account of them requires that the way in which an object is known and the intention of the knower be considered.

St. Thomas notes the effect of the mode of proceeding and of the intention of the knower in several well-known passages. For the moment, however, the two following texts will prove adequate for our limited purposes. In the *Prima Pars* we read:

...Alia scientia est speculativa tantum, aliqua practica tantum, aliqua vero secundum aliquid speculativa et secundum aliquid practica. Ad cuius evidentiam, sciendum est quod aliqua scientia potest dici speculativa tripliciter. Primo, ex parte rerum scitarum, quae non sunt operabiles a sciente, sicut est scientia hominis de rebus naturalibus vel divinis. Secundo, quantum ad modum sciendi: ut puta si aedificator consideret domum definiendo et dividendo et considerando universalia praedicata ipsius. Hoc siquidem est operabilia modo speculativo considerare, et non secundum quod operabilia sunt. Operabile enim est aliquid per applicationem formae ad materiam, non per resolutionem compositi in principia universalis formalia. Tertio, quantum ad finem; nam 'intellectus practicus differt fine a speculativo', sicut dicitur in III De An. Intellectus enim practicus ordinatur ad finem operationis; finis autem intellectus speculativi est consideratio veritatis. Unde, si quis aedificator consideret qualiter posset fieri aliqua domus, non ordinans ad finem operationis, sed ad cognoscendum tantum, erit quantum ad finem, speculativa consideratio, tamen de re operabili. Scientia igitur quae est speculativa ratione ipsius rei scitae, est speculativa tantum. Quae vero speculativa est secundum modum vel finem, est secundum quid speculativa et secundum quid practica. Cum vero ordinatur ad finem operationis, est simpliciter practica.¹

The text just cited distinguishes the speculative from the practical from the point of view of speculative knowledge. The following passage from the *Quaestiones disputatae de Veritate* makes precisely the same distinctions while adopting the point of view of practical knowledge.

...Sicut dicitur in III de Anima, intellectus practicus differt a speculativo fine; finis enim speculativi est veritas absolute, sed practici est operatio ut dicitur in II Metaphys. Alia vero cognitio practica dicitur ex ordine ad opus: quod contingit dupliciter. Quandoque in actu; quando scilicet ad aliquod opus actu ordinatur, sicut artifex praeconcepit formam proponit illam in materiam inducere; et tunc est actu practica cognitio, et cognitionis forma. Quandoque vero est quidem ordinabilis cognitio ad actum, non autem actu ordinatur; sicut cum artifex excogitat formam artificii, et scit per modum operandi, non tamen operari intendit; et certum est quod est practica habitu vel virtute, non actu. Quando vero nullo modo est ad actum ordinabilis cognitio, tunc est semper speculativa; quod etiam dupliciter contingit. Uno modo quando cognitio est de rebus illis quae non sunt natae produci per scientiam cognoscentis, sicut nos cognoscimus naturalia; quandoque vero res cognita est quidem operabilis per scientiam, tamen non consideratur ut est operabilis; res enim per operationem in esse producit. Sunt autem quaedam quae possunt separari secundum intellectum, quae non sunt separabilia secundum esse. Quando autem consideratur res per intellectum operabilis distinguendo ab invicem ea quae secundum esse distinguuntur non possunt, non est practica cognitio nec actu nec habitu, sed speculativa tantum; sicut si artifex consideret domum investigando passiones ejus, genus et differentias, et huiusmodi, quae secundum esse indistincte inveniuntur in re ipsa. Sed tunc consideratur res ut est operabilis, quando in ipsa considerantur omnia quae ad ejus esse requiruntur simul.²

These texts put us in a position to disengage the distinct kinds of speculative and practical knowledge. With respect to a non-operable, we can have a speculative knowledge only, speculative simpliciter. In such knowledge we contemplate the truth for its own sake. Obviously, its mode is speculative — "per resolutionem compositi in principia universalis"; since the truth about a thing is possessed when its causes are known, and causes

¹ Ia, q.14, a.16, c.

² Q.3, a.3, c.

are always more simple than effects. It is likewise clear that, pursuing such an object speculatively, operation could only be an accidental product at best.¹

There is, however, another kind of speculative knowledge which St. Thomas, in the text cited above from the *Summa*, calls *secundum aliquid* speculative and *secundum aliquid* practical. This knowledge may be of two kinds. First, an operable object may be considered speculatively, "defining, dividing and considering its universal predicates": or, in the words of the text from the *De Veritate*, separating *secundum intellectum* what cannot be distinguished *secundum esse*. To know in this way will be, again in the language of the *De Veritate*, to know an object orderable but not ordered to operation. Here the operable — object of practical knowledge — is considered as though it were not operable at all. It goes without saying that the end of the knower here can only be the truth absolutely, just as it was in the case of knowledge *simpliciter* speculative of an object in no way operable by us. Since in mode and end it is speculative — though it has an operable for object — this type of knowledge remains essentially speculative.

However, it must be pointed out, according to the text from the *Prima Pars*, this essentially speculative knowledge is practical *secundum quid*. Even though its object is not known in a practical way, yet it is knowledge of an operable, and, as such, it is the material, though not the

¹ It is this knowledge that is simply speculative which is further distinguished according to the degrees of formal abstraction (cf. ST. THOMAS, *In de Trin.*, loc. cit.) into the Science of Nature, Mathematics and Metaphysics. Accidentally, however, speculative knowledge in this sense can be practical in so far as from it one might take occasion for practical reflections that might issue in action. St. Thomas, in this connection, remarks that a man might use the doctrine of the immortality of the soul as a remote occasion for operation (cf. *De Ver.*, loc. cit.).

With respect to the Science of Nature as one of the types of simply speculative knowledge it ought to be noticed that its object is a non-operable for us only, not absolutely. "... Tout objet d'intelligence qui s'éloigne de la pure actualité de Dieu, donc tout objet 'moins immatériel' de quelque façon que ce soit, implique déjà un ordre à la subjectivité, c'est-à-dire à la matérialité prise au sens large. Tout objet dont l'existence n'est pas de la raison même de son essence, pourra être objet de connaissance pratique... Donc tout objet qui n'est pas sous tous les rapports absolument nécessaire, c'est-à-dire toute créature, peut être objet de connaissance pratique..."

"On peut donc trouver en toute créature un rapport de matérialité de l'ordre de la quiddité. Et à mesure que nous nous éloignons de l'immatérialité, l'objet devient de plus en plus opérable dans la ligne de la quiddité. Dans les créatures proprement matérielles, la formalité touchera la substance même des êtres..."

"Donc, à mesure que nous nous éloignons de la pure immatérialité où le 'quod quid est' et l'être sont identiques, nous nous trouvons en face d'objets qui sont de plus en plus purement opérables, donc de plus en plus objets de connaissance pratique..."

"C'est pour cette raison qu'une profonde connaissance spéculative des choses naturelles est pour nous impossible. Car ces choses sont d'une part opérables principalement, et d'autre part nous ne pouvons en avoir une connaissance pratique". — HENRI PICHETTE, *op. cit.*, pp. 59-60.

It is for this reason, too, that Aristotle in the *De Partibus Animalium* (I, chap. 1) distinguishes the Science of Nature from the other speculative sciences: "The mode of necessity, however, and the mode of ratiocination are different in natural science from what they are in the theoretical sciences; of which we have spoken elsewhere [cf. *Physics*, I; ST. THOMAS'S comm., lect. 15]. For in the latter the starting-point is that which is; in the former that which is to be. For it is that which is yet to be — health, let us say, or a man — that, owing to its being of such and such characters, necessitates the pre-existence or previous production of this and that antecedent; and not this or that antecedent which, because it exists or has been generated, makes it necessary that health or a man is in, or shall come into, existence."

formal, object of practical knowledge. For this reason, what is here called essentially speculative knowledge may be called radically practical.

Secondly, an operable object may be considered practically — that is, “qualiter posset fieri,” considering all those things that are simultaneously necessary in order that the object exist, without, however, the knower intending the operations that will give the object existence. Thus the object of this kind of knowledge is an operable, known in a mode proper to an operable. Only the end of the knower remains speculative. This is the kind of knowledge that the text from the *De Veritate* calls practical *virtute*.

Thus, because it considers an operable as operable, it is formally practical knowledge. However, according to the text from the *Prima Pars*, this same formally practical knowledge is *secundum quid* speculative: not, this time, because the mode is speculative, but rather because the end of the science itself does not actually engage the intention of the knower; the end of the knower remains speculative, while the end of the science is practical. For, with Cajetan, we must distinguish the end of the science from the end of the knower:

Circa hanc partem, adverte primo quod practicum et speculativum hic sumitur non solum ut sunt conditiones scientiae secundum se, sed etiam ex parte scientis. Et propterea dicitur quod ars domificativa non intendit domificare, est speculativa ex fine, et practica ex modo et objecto: glossandum est enim de fine *ex parte scientis*, et non *ipsius scientiae*. Quoniam si loquimur de fine ipsius scientiae, ipsa est etiam practica ex fine: quoniam finis ejus est domificatio. Et hoc si adverteris, deludes irrisiones adversariorum.¹

Formally or virtually practical knowledge has as object the operable as operable which is defined by the movements and operations that can bring it into existence.² Thus it is that “operabile est aliquid per applicationem formae ad materiam.”³ Even though it may not be intended by the knower, the operable as such can achieve its actuality only in execution. This is why, John of St. Thomas points out, the refusal of the knower to accept the ends of formally practical science renders the latter only *accidentally* speculative.⁴

¹ *In Iam Partem*, q.14, a.16, n.3.

² *De Ver.*, q.3, a.3, ad 9.

³ *Ia*, q.14, a.16, c.

⁴ “[Ad confirmationem respondetur] D. Thomam distinguere practicum et speculativum, quando sunt differentiae essentiales ex parte objecti seu finis intrinseci; at vero speculativum et practicum secundum quid, id est, quantum ad aliquem modum seu condicionem extrinsecam pertinentem ad usum et exercitium scientiae, ita quod non solum scientia ipsa sit practica, sed etiam intentio ususque scientiae practicus sit, et cum applicatione ad opus: ex hac parte distingui potest practicum et speculativum accidentaliter. Itaque quando D. Thomas dicit considerationem aliquam esse speculativam ex fine, et posse esse practicam ex fine, idque docet esse practicum et speculativum secundum quid: loquitur de speculativo et practico ex parte scientis, seu quantum ad intentionem et usum scientis: non ex parte scientiae et secundum specificationem ejus. Cum vero dicit, quod quando ordinatur ad finem operationis, est simpliciter practica, ly *simpliciter* non est idem quod absolute et quantum ad substantiam: hoc enim habet ex fine scientiae, seu ex parte objecti secundum se; sed ly *simpliciter* est idem quod *omnibus modis*, quia tunc, tam ex parte scientiae quam ex parte scientis, practica est.”—JOHN OF ST. THOMAS, *Curs theol.*, T.I, disp.2, a.10, p.399, n.15.

The *secundum quid* speculative character of formally practical knowledge has its counter-part in the purely speculative order: for we have seen (p.15, n.1) that simply speculative knowledge can be the remote occasion for operation. It will be

Finally, there is the type of knowing that is wholly or completely practical — the practical *tantum vel simpliciter* of the text from the *Prima Pars* and the practical *in actu* of the *De Veritate*. Here all three criteria of practical knowledge are satisfied. The object is an operable; it is known *per modum operandi*, and its operative end is actually accepted as his own by the knower.

As John of St. Thomas remarks,¹ to designate completely practical science as *simpliciter* practical is to say that it is something more than essentially or specifically practical. For, as we have seen, formally practical knowledge is also essentially or specifically practical, since it considers an operable as operable. In the expression *practical simpliciter*, *simpliciter* must be understood not merely as signifying 'essentially' or 'specifically'; but, rather, it must be taken as the equivalent of 'in every way'. Thus understood, *simpliciter* indicates the primary characteristic of completely practical knowledge when the latter is compared with what is only formally practical, that is, it fulfills all three requirements for perfectly practical knowledge.²

We are now in a position to examine more closely the distinct modes of proceeding attributed to speculative and practical knowledge in the texts cited above.

It should be noted at once, however, that specifically diverse modes of proceeding in knowledge constitute essential, or, rather, are reduced to essential, differences: "nam modus cuiusque actionis consequitur formam quae est actionis principium."³ Thus, John of St. Thomas shows that the mode of proceeding in a science is reduced to the formal principles of its object.

Nec solum differunt [i.e., practicum et speculativum] penes diversos modos, scilicet una modo resolutivo, altera modo compositivo; nam isti modi necessario reducuntur ad diversam immaterialitatem et abstractionem objecti... et consequenter ad diversam intelligibilitatem: ex hoc autem sumitur, non solum modalis, sed etiam essentialis et formalis differentia in genere intelligibili.⁴

recalled that we named this accidentally practical knowledge. For this reason we might be permitted to call formally practical knowledge, in so far as it retains something of the speculative, accidentally speculative knowledge.

¹ Cf. n.4, p.16.

² The kinds of speculative and practical knowledge and their inter-relations may be presented more clearly in the following schematization.

SPECULATIVE	CRITERIA	PRACTICAL
I. <i>Simpliciter</i> (not orderable to work)	a) Non-operable object b) Speculative mode c) End: truth <i>absolute</i> <i>Accidentaliter</i>
II. <i>Essentialiter</i>	a) Operable object b) Speculative mode c) End: truth <i>absolute</i> I <i>Radicaliter</i>
III. <i>Accidentaliter</i>	a) Operable object b) Practical mode c) End: truth <i>absolute</i> II <i>Formaliter</i> (<i>in habitu</i>)
	a) Operable object b) Practical mode c) End: operation III <i>Simpliciter</i> (<i>in actu</i>)

³ Ia, q.85, a.4, c.

⁴ JOHN OF ST. THOMAS, *op. cit.*, T.I, p.395, n.5. John of St. Thomas makes use of this same doctrine in his introductory treatise on the nature of logic where he shows that logic is a speculative science because it proceeds according to resolute principles. (Cf. his *Cursus philosophicus*, Vol.I, Logic, P.II, a.1).

According to our analysis of the types of speculative and practical knowledge, we find that the knowledge we have called simply speculative and essentially speculative proceeds "by the resolution of a composite into its universal formal principles." It considers its object by "defining and dividing it and by considering its universal predicates." Knowledge which is speculative in this way is neither ordered nor orderable to work — except as a remote principle, as we have seen. Simply speculative knowledge cannot be ordered to operation because its object is in no way operable by us. Essentially speculative (i.e., radically practical) knowledge, however, is not ordered to work because, even though its object is an operable, those things are distinguished in it by the intellect which, *secundum esse*, cannot exist separately. In a word, the object is not considered as operable. Hence, it is not considered as a good which is defined by the movements and operations that can bring it into existence. In this essentially speculative knowledge, it is as if "an artist [were to] consider a house by investigating its proper passions, its genus, differentia, etc."; for these are found in the existing thing in an unseparated state. Here, the artist is considering a good speculatively¹; he is considering the truth of a good, the manifestation of its nature through definition, division and demonstration.

The knowledge which we here call formally and completely practical is represented as proceeding in a direction opposed to that of the two types of speculative knowledge. Practical knowledge does not consider separately what are required inseparably *secundum esse*. On the contrary, practical knowledge must concern itself with all those things that are simultaneously necessary in order that its object exist.² To know an object practically is to know it as an operable: "de operabilibus perfecta scientia non habetur, nisi sciantur in quantum operabilia sunt."³ But the existence of the operable (with which practical knowledge is either actually or potentially concerned) depends upon some kind of movement; for the operable exists by reason of an application of form to matter.⁴ This is why to know practically is to know "qualiter posset fieri."⁵ Because the end of speculative knowledge is the truth, it suffices for it to understand the cause of a given effect; but, beyond this, practical science must discover the motions and operations whereby this or that effect is produced by this or that cause.⁶ Hence it is that St. Thomas tells us that since politics is a practical science, "manifestat insuper quomodo singula perfici possunt: quod est necessarium in omni practica scientia." Again, we have seen that practical knowledge has for object the good as good and, therefore, the good considered as an end of movement and operation.⁷ From this point of view, such an object will be known formally only when the movements and operations which

¹ *De Ver.*, q.3, a.3, ad 9.

² *Ibid.*, c.

³ *Ia*, q.14, a.16, ad 5 *in contra*.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *In II Ethic.*, lect.2.

⁷ *De Ver.*, q.3, a.3, ad 9.

effect its existence are known. Formally practical knowledge will, then, consist in the knowledge of movements and operations that *can be* applied to work; while completely practical knowledge will be of those movements and operations that one actually intends to apply.¹

It would seem, then, that according to the general doctrine of the distinction of speculative and practical knowledge, the resolute or analytic process abstracts the universal formal principles of objects — whether operable or non-operable. It proceeds by defining its object according to genus and differentia, dividing its object and demonstrating its proper passions. To proceed compositively or synthetically, on the other hand, is to proceed in the direction of the physical existence of an operable object, toward constructing it by the application of form to matter.

We see immediately that these more explicit determinations of resolution and composition remain well within the common notions of them described at the outset of this essay. To proceed toward the formal principles of an object is indeed to proceed in the direction of what is more simple; while the process toward the physical existence of an object is certainly a movement toward what is more complex.

We are now in a better position to understand the importance of John of St. Thomas's statement to the effect that the modes of proceeding are dictated by the formal objects of the sciences. For we have seen that an operable object as such is defined by the operations that can bring it into existence: "*operabile est aliquid per applicationem formae ad materiam.*" A non-operable, on the other hand, is defined by the principles that constitute its essence and from which flow certain necessary attributes. A formal knowledge of an operable will, then, proceed by way of principles that direct its execution; whereas a formal knowledge of a non-operable will proceed according to principles that state the nature of the thing only, abstracting entirely from actual existence.

But we have seen that to know something "*per modum operandi*" or "*qualiter posset fieri*," to know all that is simultaneously necessary for the existence of an object is to know in a compositive mode. Therefore, to know an operable as operable is to know it compositively. This is why an operable, known as operable, has its own end (*finis scientiae*) exclusive of the end of the knower (*finis scientis*). The end of the principles of an operable as such is the positing of the operable object in existence. No doubt, knowledge that is only formally practical does not suffice for the existence of the operable object; but formally practical knowledge has the condition that it *can be* posited in existence; it is orderable to existence, if the appetite were so disposed.

We have seen, too, that to know something according to those things that can be separated *secundum intellectum* only is to know in a resolute mode. But the definition stating the essential principles of a thing is

¹ There are other formulations of the same doctrine. Both types of practical knowledge consider their object "*per modum operandi*" (*De Ver.*, q.3, a.3); they are a "*proximate rule of a work*" (*De Ver.*, q.14, a.4); they teach "*the modes of operation*" and "*the principles by which a man is directed in his operations*" (*In de Trin.*, q.5, a.1).

separable only *secundum intellectum*. Hence, the formal object of essentially speculative knowledge dictates the resolute mode.

It follows, then, that the distinct modes of proceeding attributed to speculative and practical knowledge are founded upon the diverse objects that occupy the mind when it seeks to know speculatively or practically. Since speculation is concerned with an object that we cannot produce or with knowledge that is not productive, the mind rests when it is in possession of the causes of that object. Because practical consideration, on the other hand, bears upon an object that is operable by us, practical knowledge is concerned with the application of causes in order to produce or construct that object.

What we have seen thus far is an adequate indication of the resolute or analytic character of speculative knowledge, and of the compositive or synthetic character of practical knowledge. However, it is not yet clear how Aristotle and St. Thomas can, on the one hand, designate certain types of speculative discourse as compositive in mode, while, on the other hand, they insist upon the resolute character of counsel and of the *ordo ratiocinandi* in practical discourse.

In order to reconcile these apparently conflicting aspects of the doctrine of the speculative and the practical, we shall be obliged to consider in detail the distinct types of discourse proper to these two areas of knowing.

II. SPECULATIVE AND PRACTICAL DISCOURSE

Introduction

In order to answer the difficulties raised toward the end of the first part of this essay, we shall be required to clarify further our notions of the resolute and compositive modes. Our analysis of the general doctrine of speculative and practical knowledge has, indeed, added some precision to the common or nominal notions investigated at the outset of this work. We must now penetrate more deeply into the modes of proceeding that are characteristic of speculative and practical knowledge.

How, precisely, do speculative and practical knowledge proceed in order to achieve their objects? An adequate answer to this question demands an investigation at close range into the kind of discourse proper to these distinct types of knowing.

We have observed that demonstration *propter quid* is the highest perfection of human speculative knowledge; while the perfection of practical knowing is to be found in what is completely practical, that is to say, in art and prudence. If, then, we mean to define clearly the differences in the modes of proceeding in speculative and practical knowledge, doubtless, these differences will be seen to best advantage where we find the perfection of these orders. Thus, when St. Thomas wants to distinguish the speculative from the practical in the full rigor of that distinction he frequently refers to the speculative as "in demonstrativis" or "in necessariis,"

while he designates the practical as "in iis quae fiant propter aliquid," or "in practicis," or "in operativis."¹

What follows may be conveniently divided into three sections. First, we shall consider some aspects of discourse that are common to both the speculative and practical orders. In two succeeding sections we shall attempt a detailed account of the discourse proper to the distinct areas of speculative and practical knowing.

1. Common Notions

When, in the *Summa Contra Gentiles*, St. Thomas considers whether separated substances know singulars, he compares our mode of proceeding in acquiring knowledge with that of the angels:

Species rerum intelligibiles contrario ordine perveniunt ad intellectum nostrum, et ad intellectum substantiae separatae. Ad intellectum enim nostrum perveniunt per viam resolutionis, per abstractionem a conditionibus materialibus et individuantibus: unde per eas singularia cognosci non possunt a nobis. Ad intellectum autem substantiae separatae perveniunt species intelligibiles quasi per viam compositionis: habet enim species intelligibiles ex assimilatione sui ad primam intelligibilem speciem intellectus divini, quae quidem non est a rebus abstracta, sed rerum factiva.²

It would be well to dwell for a moment upon the salient features of the doctrine of the natural knowledge of the angels. We shall thereby see the full impact of the contrast between the human resolute mode and the angelic compositive mode suggested by the text just cited.

The angelic intellect is not obliged to compose and divide, to form affirmative or negative propositions about the objects that it knows naturally.³ Neither is it required for the angelic intellect to proceed from one thing to another discursively.⁴ The immediate reason for these two characteristics of angelic knowledge is that the intellect of the separated substance is not in potency with respect to what it knows naturally.⁵ Composition and division imply that an intellect does not at once comprehend everything involved in a given quiddity or nature. Discourse implies that the mind is in potency with respect to the comprehension of propositions. Because the angelic intellect is not in potency to what it knows naturally, because "in prima apprehensione potest inspicere quidquid in eo virtute continetur,"⁶ the angelic mind neither composes nor divides, nor does it make discourse.

What is the reason for this actuality of separated substances in face of objects known to them naturally? We find the answer to this question in the text given above from the *Summa Contra Gentiles*⁷: angels do not receive intelligible species from things; rather, they receive them by infusion from God simultaneously with the reception of their intellectual natures.

¹ In *II Physicorum*, lect.15; *Contra Gentiles*, III, c.97, n.12; *Ila IIae*, q.49, a.4, ad 1.

² *Contra Gent.*, II, c.100.

³ *Ia*, q.58, a.4, c.

⁴ *Ibid.*, a.3, c.

⁵ *Ibid.*, a.1, c.

⁶ *Ibid.*, a.4, c.

⁷ The same doctrine may be found in the *Prima Pars*, q.55, a.2, c. and ad 1.

These species, *a Deo inditas*,¹ participate the very ideas, the *rationes factivae*, by which God creates natural things. Consequently, the intelligible species that are connatural to the angelic mind are prior to natural things. This is why St. Thomas, following St. Augustine, can say that what exists from all eternity in the Divine Word flows out upon creatures in a twofold way.

...Ea quae in Verbo Dei ab aeterno praeexisterunt, dupliciter ab eo fluxerunt: uno modo, in intellectum angelicum; alio modo ut subsisterent in propriis naturis. In intellectum autem angelicum processerunt per hoc quod Deus menti angelicae impressit rerum similitudines, quas in esse naturali produxit...²

The human intellect in relation to material things finds itself in precisely the opposite position to that of the angels: it is posterior to things; it must submit itself to things as to a measure; it must accept its intelligible species from them.³ Whence it is that, in contrast to the angelic mode of knowing, it is natural for us to proceed "ex sensibus ad intelligibilia, ex effectibus in causas, ex posterioribus in priora."⁴ And, because of its posteriority to things, the human mind is potential with respect to the determination, the actuality, of things. Because the human mind does not possess from the beginning, as angels do, the species of material things, human intellective cognition must begin with an act wholly unknown to the natural mode of knowing found in separated substances. The human intellect must abstract intelligible species from material things as these are represented in the imagination and sense. Thus what the angels know by infused species we must strive to acquire by abstraction.

...Si angelus acciperet cognitionem rerum materialium ab ipsis rebus materialibus, oporteret quod faceret eas intelligibiles actu, abstrahendo eas. Non autem accipit cognitionem earum a rebus materialibus; sed per species actu intelligibiles rerum sibi connaturales, rerum materialium notitiam habet; sicut intellectus noster secundum species quas intelligibiles facit abstrahendo.⁵

In the text quoted above from the *Summa Contra Gentiles*, St. Thomas characterizes this effort of the human intellect to arrive at intelligible species as proceeding "per viam resolutionis, per abstractionem a conditionibus materialibus et individuantibus."⁶ Let us consider, then, for a moment St. Thomas's account of abstraction.

¹ *Ibid.*, q.57, a.2, c.

² *Ibid.*, q.56, a.2, c; q.55, a.2, ad 1.

³ *De Ver.*, q.1, a.4, c.; q.2, a.1, c; a.8, c. and ad 1.

⁴ In *I Sententiarum*, dist.17, q.1, a.4, sol.: "...Ea quae per esse suum non sunt in materia, quantum in se est, sunt maxime nota; sed quoad nos sunt difficillima ad cognoscendum; propter quod dicit Phil. (II *Meta.*) quod intellectus noster se habet ad manifestissimam naturam, sicut oculus verspertilionis ad lucem solis. Cujus ratio est quia cum intellectus noster potentialis sit in potentia ad omnia intelligibilia, et ante intelligere non sit in actu aliquod eorum: ad hoc quod intelligat actu, oportet quod reducat in actum per species acceptas a sensibus illustratas lumine intellectus agentis; quia, sicut Phil. (III *de Anima*) dicit, sicut se habent colores ad visum, ita se habent phantasmata ad intellectum potentialem. Unde cum naturale sit nobis procedere ex sensibus ad intelligibilia, ex effectibus in causas, ex posterioribus in priora, secundum statum viae... etc."

⁵ *Ia*, q.57, a.1, ad 3.

⁶ For other passages describing abstraction as a resolute process, cf. *Ia*, q.12, a.15, ad 3; *De Ver.*, q.3, a.3; *Comp. Theol.*, cc.61, 62.

Formally, to know is to be other (*esse aliud*) as other.¹ But as we have seen, this 'other' precedes our minds; the principles by which it can be known are in it and can be had only through it. The task of the human mind is to discover its order — not to make it,² as God does, nor to know that order before the thing itself exists, as the angels do.

Now since things are antecedent to our minds, we are completely dependent upon them for our knowledge. Further, our first contact with things comes to us by way of sense experience whose objects are composed with matter and individuating material conditions. But matter and its conditions are principles of unintelligibility. "*Materia propter debilitatem sui esse, quia est ens in potentia tantum, non potest esse principium agendi.*"³ As a consequence, sense knowledge, from which our intellectual knowledge takes its origin, is only potentially intelligible. In order to become actually intelligible the objects of sense knowledge must be lifted, so to speak, out of matter and out of the material conditions that surround them.⁴ The act whereby the intellect achieves the immaterial species of things is called abstraction. "*Cognoscere vero id quod est in materia individuali, non prout est in tali materia, est abstrahere formam a materia individuali, quam repraesentant phantasmata.*"⁵

With respect to the abstraction proper to the first operation of the mind,⁶ i.e., "*per modum simplicis et absolutae considerationis,*"⁷ St. Thomas distinguishes a twofold abstraction: "...Una quidem secundum quod universale abstrahitur a particulari, ut animal ab homine. Alia vero secundum quod forma abstrahitur a materia: sicut forma circuli abstrahitur per intellectum ab omni materia sensibili."⁸

These two abstractions represent the ways in which the mind acts in face of the twofold composition found in things: for we cannot speak of abstraction in the proper sense unless the things abstracted *secundum intellectum* are found composed *secundum rem*.⁹ But in things we find that forms are composed with matter and wholes are composed with their parts. The abstraction of form from matter corresponds to the composi-

¹ *Ia*, q.14, a.1. For human knowledge, however, the definition is put more properly when it is stated as a "becoming other" (cf. *Ia*, q.80, a.1).

² *In I Ethic.*, lect.1, n.1.

³ *De Ver.*, q.2, a.5, c.

⁴ *Ia*, q.14, a.1.

⁵ *Ibid.*, q.85, a.1, c.

⁶ Strictly speaking both the first and second operations of the mind use a certain abstraction in their respective ways of proceeding (cf. *Ibid.*, ad 1; *In de Trin.*, q.5, a.3). But because the second operation is concerned with the *esse* of a thing, the very definition of truth prevents the second operation from abstracting what are required for the *esse rei*. For abstraction in this operation implies that a predicate exists separately from a given subject. Thus according to the second operation of the mind, abstraction or separation can be made only in those things that exist separately *in re*.

The first operation of the intellect is concerned with the *quid est* only, the nature of the thing, its intelligible species or form. It states nothing with respect to the actual existence of its objects. It proceeds to disengage formalities that can be understood or defined without reference to other formalities. Abstraction in this latter sense is the sole object of the investigation that we are here undertaking.

⁷ *Ia*, q.85, a.1, ad 1.

⁸ *Ia*, q.40, a.3, c; cf. also *In de Trin.*, loc. cit.

⁹ *Ibid.*

tion of matter and form in things and is called Formal Abstraction. The abstraction of the universal from the particular corresponds to the composition of a whole with its parts and is called Total Abstraction.

Not only because these two abstractions are characterized by a resolute mode, but also because of their capital position in human discourse, it is essential to our problem that we understand clearly what they are.

The proper object of the human intellect is the quiddity of sensible things in an assimilation to which our intellects are said to know them.¹ But between the intellect and sensible things as they are represented in the imagination there is an initial disproportion.

The human intellect is actually immaterial and as a consequence intellectual.² At the same time it is potential with respect to any determinate assimilation to the nature of this or that sensible thing. On the other hand, the imagination actually possesses the natures of material things but in such a way that they still remain surrounded by their material conditions in material organs. Hence, they are only potentially intelligible.

Thus, while the imagination possesses actually determinate likenesses of things, these same likenesses are possessed of only a potential intelligibility. The mind, on the contrary, while potential with respect to the determinate similitudes of sensible natures is characterized by an actual immateriality.

Ultimately, this disproportion is resolved by the mind itself whose agent intellect, acting upon the likenesses present in the imagination, makes them actually intelligible by abstraction.³

Thus the agent intellect by the act of formal abstraction seizes what is intelligible in sensible things. In so doing it must neglect nothing that constitutes the object as a nature, quiddity or definition: "Definitio enim notificat essentiam rei, quae non potest sciri nisi sciantur principia."⁴

¹ In *III de Anima*, lect.8; *De Div. Nom.*, c.7, lect.2 (ed. MANDONNET, p.525; *De Ver.*, q.15, a.2, ad 3; *Ia*, q.85, a.1, c; a.8, c.

² *Contra Gent.*, II, c.68.

³ "...Habet enim anima intellectiva aliquid in actu ad quod phantasma est in potentia: et ad aliquid est in potentia quod in phantasmatis actu invenitur. Habet enim substantia animae humanae immaterialitatem, et, sicut ex dictis (cap.68) patet, ex hoc habet naturam intellectualem: quia omnis substantia immaterialis est huiusmodi. Ex hoc autem nondum habet quod assimiletur huic vel illi rei determinate, quod requiritur ad hoc quod anima nostra hanc vel illam rem determinate cognoscat: omnis enim cognitio fit secundum similitudinem cogniti in cognoscente. Remanet igitur ipsa anima intellectiva in potentia ad determinatas similitudines rerum cognoscibilium a nobis, quae sunt naturae rerum sensibilium. Et has quidem determinatas naturas rerum sensibilium praesentant nobis phantasmata. Quae tamen nondum pervenerunt ad esse intelligibile: cum sint similitudines rerum sensibilium etiam secundum conditiones materiales, quae sunt proprietates individuales, et sunt etiam in organis materialibus. Non igitur sunt intelligibilia actu. Et tamen, quia in hoc homine cuius similitudinem repraesentant phantasmata, est accipere naturam universalem denudatam ab omnibus conditionibus individuantes, sunt intelligibilia in potentia. Sic igitur habent intelligibilitatem in potentia, determinationem autem similitudinis rerum in actu. E contrario autem erat in anima intellectiva. Est igitur in anima intellectiva virtus activa in phantasmata, faciens ea intelligibilia actu: et haec potentia animae vocatur *intellectus agens*. Est etiam in ea virtus quae est in potentia ad determinatas similitudines rerum sensibilium: et haec est potentia *intellectus possibilis*."—*Contra Gent.*, II, c.77.

⁴ In *I de Anima*, lect.1, n.10.

Formal abstraction issues in objects that are actual and intelligible, because formal abstraction separates form from matter which is potential and, therefore, an obstacle to our science. With formal abstraction our science — as distinguished from our simple knowledge — begins¹; for it is according to the diverse degrees of formal abstraction that the speculative sciences are distinguished:

Sicut Phil. dicit in tertio *de An.*, sicut separabiles sunt res a materia, sic et quae circa intellectum sunt. Unumquodque enim intantum est intelligibile inquantum est a materia separabile. Unde ea quae sunt secundum naturam a materia separata, sunt secundum seipsa intelligibilia actu; quae vero a nobis a materialibus conditionibus abstracta, fiunt intelligibilia actu per lumen nostri intellectus agentis. Et, quia habitus alicujus potentiae distinguuntur specie secundum differentiam ejus quod est per se objectum potentiae, necesse est quod habitus scientiarum quibus intellectus perficitur, etiam distinguantur secundum differentiam separationis a materia; et ideo Philosophus in sexto *Metaphysicorum* distinguit genera scientiarum secundum diversum modum separationis a materia. Nam ea, quae sunt separata a materia secundum esse et rationem, pertinent ad *Metaphysicum*; quae autem sunt separata secundum rationem et non secundum esse pertinent ad *Mathematicum*; quae autem in sui ratione concernunt materiam sensibilem, pertinent ad *Naturalem*.²

And because the definition states the intelligible species of a thing, and definitions are principles of science,³ we can say that as definitions express different relations to matter they specify diverse sciences. Thus our scientific knowledge may be said to take its beginning from species or quiddities or definitions formally abstracted from matter and from material conditions. And as species, quiddities or definitions may be diversely related to matter, we recognize a diversity of sciences.

Because of the critical part played by the product of formal abstraction in demonstrative science we shall be obliged to return to it again at length when we discuss the type of discourse proper to demonstration.⁴ For the moment, however, we would do well to devote our attention to some aspects of total abstraction.

Total abstraction occurs when the mind considers a universal whole as separated from particulars, singulars or subjective parts. In total abstraction the mind is attentive to something that does, indeed, belong to the very nature of the parts or singulars without at the same time attending to everything that falls under their definitions as singulars or subjective parts. Thus, for instance, when we consider 'man', abstracting from 'Socrates', 'Plato', etc., or when we consider 'animal', abstracting from 'man' and 'brute', we are abstracting totally. In the latter example, 'animal' is abstracted totally because it considers something that belongs

¹ In *I Posteriorum Analyticorum*, lect.4, n.16; In *I Phys.*, lect.1, n.8.

² In *de Sensu et Sensato*, lect.1, n.1.

³ "Sciendum est igitur quod, cum omnis scientia sit in intellectu, per hoc autem aliquid fit intelligibile in actu, quod aliquantulum abstrahitur a materia; secundum quod aliqua diversimode se habent ad materiam, ad diversas scientias pertinent. Rursus, cum omnis scientia per demonstrationem habeatur, demonstrationis autem medium sit definitio; necesse est secundum diversum definitionis modum scientias diversificari."—In *I Phys.*, lect.1, n.1.

"Et notandum quod tota ratio divisionis philosophiae sumitur secundum definitionem et modum definiendi. Cujus ratio est, quia definitio est principium demonstrationis rerum, res autem definiuntur per essentialia. Unde diversae definitiones rerum diversa principia essentialia demonstrant, ex quibus una scientia differt ab alia."—In *I de Anima*, lect.2, n.29.

⁴ Cf. Part II, sect.2, p.31.

commonly or universally to man and to brute — i.e., sensibility — while it sets aside from its consideration something else that is proper to 'man', i.e., rationality.

Since the inferior or subjective parts from which total abstraction prescind cannot be understood unless the whole is posited in their definition, total abstraction produces only one complete concept, viz., the whole that is abstracted. In this respect total abstraction differs radically from formal abstraction which gives rise to two concepts, since the formally abstracted and that from which formal abstraction is made are understandable without each other. The example given by St. Thomas is that of "circle" abstracted from "bronze."¹

And because total abstraction prescind from the differences that things require in order to be, the single concept which is the product of total abstraction has only a logical unity.²

Again, total abstraction occurs when the mind separates from its object those things that actually specify it. Thus, the more these latter are abstracted the more *potential* the object abstracted becomes, and, therefore, the less intelligible *in se*. Formal abstraction, on the other hand, is ordered to the separation of everything that belongs to the nature or definition of its object from whatever is material in it; hence, it tends to separate all that is actual and intelligible from what is potential and material.

Because of these diverse tendencies of the two abstractions we can say that what is abstracted formally is actual, distinct and intelligible, while total abstraction makes for potentiality, confusion and unintelligibility. Further, the more abstract an object is according to formal abstraction the more knowable it is *in se*: but what is more abstract according to total abstraction is only more knowable *quoad nos*.³

Potential, confused and common, the product of total abstraction is a universal-in-predication only; for the more abstract an object is by total abstraction, the more predicable it is, since the number of its inferiors increases in direct proportion to its universality.⁴ Formal abstraction is ordered to what is actual, clear, proper and universal-in-causation.⁵

In the text cited from the *Summa Contra Gentiles*, with which the present section of our essay began, St. Thomas designates formal abstraction as resolute in mode. In the light of what we have seen of the nature of formal abstraction and of the common notion of resolution, St. Thomas's expression ought not to surprise us.⁶ But it does seem disconcerting that

¹ *Ia*, q.40, a.1.

² CHARLES DE KONINCK, *Introduction à l'étude de l'âme in Précis de Psychologie thomiste* by S. CANTIN, Québec 1948, p.xxxiii.

³ *In I Phys.*, lect.1.

⁴ The potentiality in terms of which the totally abstracted whole is defined is a potentiality of predication; its whole actuality is to be predicated. Cf. CHARLES DE KONINCK, *loc. cit.*

⁵ Objects formally abstracted contain their definitive parts actually. *Ibid.*

⁶ "Sed intellectus noster potest in abstractione considerare quod in concretionem cognoscit. Et si enim cognoscat res habentes formam in materia, tamen resolvit compositum in utrumque et considerat ipsam formam per se."—*Ia*, q.12, a.4, ad 3.

In *Quaestiones Quodlibetales* (q.8, a.4), St. Thomas makes the same point by comparing the resolute process of demonstrative discourse with the resolute

St. Thomas should also characterize total abstraction as a resolute process: "Est enim duplex resolutio quae fit per intellectum. Una secundum abstractionem formae a materia... Alia vero resolutio est secundum abstractionem universalis a particulari..."¹

In order to reply adequately to this difficulty it will be necessary to recall that total abstraction is a condition that attaches itself to *our imperfect way of knowing*. The singulars, the subjective parts that are known to sense and from which abstraction is made totally are *in se* more intelligible because they have more of being.² We know, for instance, that intelligences more perfect than our own can have a direct intellectual knowledge of them.³ It is only *quoad nos* and with respect to our intellectual knowledge that these parts are unintelligible. Total abstraction, prescinding from the specific differences of things, prescinds at the same time from their *in se* intelligibility in order to achieve a universality where they become more intelligible *quoad nos*. It is for this reason that, abstracting from specific differences that connote greater being, total abstraction issues in a potential whole — a whole that contains its subjective parts only virtually or potentially. This is why it is called a 'confused' whole rather than a 'composite' whole⁴; for a composite contains its parts actually. Thus, also, the object abstracted totally is like a genus; for, the latter does not contain its species except potentially: "prius quoad nos est scire animal quam hominem."⁵

Hence it is that when we speak of what is more intelligible or less intelligible in relation to total abstraction, we are speaking not of intelligibility *secundum se*, as in the case of formal abstraction, but of intelligibility *quoad nos*. From this point of view, total abstraction falls under the common notion of the resolute mode in so far as it passes from subjective parts and singulars which are complex and less intelligible *for us*, to a universal *in praedicando* which is simple and more intelligible *for us*.

From the point of view of what is more simple and more intelligible *in se*, we are actually moving from what is more knowable, more determined

process involved in the acquisition of our intelligible species. After showing that conclusions resolve to first indemonstrable principles, he goes on to say: "Et similiter in intellectu insunt nobis etiam naturaliter quaedam conceptiones omnibus notae, ut entis, unius, boni, et huiusmodi, a quibus eodem modo procedit intellectus ad cognoscendum quidditatem uniuscujusque rei, per quem procedit a principiis per se notis ad cognoscendas conclusiones; et hoc vel per ea quae quis sensu percipit; sicut cum per sensibiles proprietates alicujus rei concipio illius rei quidditatem; vel per ea quae ab aliis quis audit, ut cum laicus qui nescit quid sit musica, cum audit aliquam artem esse per quam discit canere vel psallere, concipit quidditatem musicae, cum ipse praesciat quid sit ars, et quid sit canere; aut etiam per ea quae ex revelatione habentur, ut est in his quae fidei sunt. Cum enim credimus aliquid esse in nobis divinitus datum, quo affectus noster Deo unitur, concipimus caritatis quidditatem, intelligentes caritatem esse donum Dei, quo affectus Deo unitur; praecognoscentes tamen quid sit donum et quid affectus, et quid unio. De quibus etiam quid sint, scire non possumus, nisi resolvendo in aliqua prius nota; et sic quousque perveniamus usque ad primas conceptiones humani intellectus, quae sunt omnibus naturaliter notae." Cf. also *De Ver.*, q.2, a.1, c.

¹ *Comp. Theol.*, c.62.

² *In I Phys.*, lect.1, n.7.

³ *Contra Gent.*, II, c.100.

⁴ *In I Phys.*, lect.1, n.8.

⁵ *Ibid.*, n.7.

to what is less knowable and more potential. From this latter point of view, total abstraction is rather compositive in mode, since our universals are posterior to things.¹ They are constructions, so to speak, that are absolutely necessary conditions of our way of knowing.²

Nevertheless, total abstraction is defined by relation to our way of knowing — in contrast to formal abstraction which is defined by relation to what is more intelligible *secundum se*. Thus understood formally, total abstraction is a passage from the less to the more intelligible *quoad nos*, from what is complex to what is simple for our intellectual knowledge. As a consequence, it is an instance of a processus that falls under the common notion of the resolute mode.

Total abstraction accompanies and conditions our every attempt to know in whatever way. Whether it be speculative or practical, intellectual or according to sense, our knowledge is affected by the fact that it must always proceed from potency to act. Thus when we abstract formally we are obliged at the same time and in the same act to abstract totally.

... Tanto enim unumquodque perfectius cognoscimus, quanto differentias eius ad alia plenius intuemur: habet enim res unaquaeque in seipsa esse proprium ab omnibus aliis rebus distinctum. Unde et in rebus quarum definitiones cognoscimus, primo eas in genere collocamus, per quod scimus in communi quid est; et postmodum differentias addimus, quibus a rebus aliis distinguatur; et sic perficitur substantiae rei completa notitia.³

The intelligible species that we are able to abstract formally are always *in communi*, general, unpenetrated with respect to the subjective parts that are only virtually contained in them. We must prescind from the specific characteristics of things in order to grasp their nature in a degree of universality that is proportionate to the potentiality of our way of knowing.⁴

It is because of the influence of total abstraction that our science must begin, for the most part, with universals that are vague, common principles.⁵ Our practical knowledge is initiated in principles so general that they are almost powerless for directing action. Even sense knowledge is characterized in its beginnings by this same confusion and vagueness.⁶

The fact that our formal abstraction is accompanied by total abstraction gives rise to a kind of discourse that is wholly confined to human

¹ "... Universale dupliciter potest considerari. Uno modo secundum quod natura universalis consideratur simul cum intentione universalitatis. Et cum intentio universalitatis (ut scilicet unum et idem habeat habitudinem ad multa) proveniat ex abstractione intellectus, oportet quod secundum hunc modum universale sit posterius. Unde in I De An. (I-402b7) dicitur quod 'animal universale aut nihil est, aut posterius est.' Sed secundum Platonem, qui posuit universalis subsistentia, secundum hanc considerationem universale esset prius quam particularia, quae secundum eum non sunt nisi per participationem universalium subsistentium, quae dicuntur ideae." — *Ia*, q.85, a.3, ad 1.

² "... Universale secundum quod accipitur cum intentione universalitatis, est quidem quodammodo principium cognoscendi, prout intentio universalitatis consequitur modum intelligendi, qui est per abstractionem. Non autem est necesse quod omne quod est principium cognoscendi, sit principium essendi... etc." — *Ibid*, ad. 4.

³ *Contra Gent.*, I, c.14.

⁴ It should be observed that this imperfection in our mode of knowing is not the result of formal abstraction — which of itself is ordered to more perfect intelligibility — but rather of the total abstraction which accompanies all our efforts to know.

⁵ *In I Phys.*, lect.1.

⁶ *Ibid*.

knowledge. For even though our science begins with universal, common principles, it is perfected only when, descending through a process of discovery and demonstration, it knows what is proper to each individual species¹:

Scientia autem quae habetur de re tantum in universali, non est scientia completa secundum ultimum actum, sed est medio modo se habens inter puram potentiam et ultimum actum. Nam aliquis sciens aliquid in universali, scit quidem aliquid eorum actu quae sunt in propria ratione eius: alia vero sciens in universali non scit actu, sed solum in potentia. Puta, qui cognoscit hominem solum secundum quod est animal, solum scit sic partem definitionis hominis in actu, scilicet genus eius: differentias autem constitutivas speciei nondum scit actu, sed potentia tantum. Unde manifestum est quod complementum scientiae requirit quod non sistatur in communibus, sed procedatur usque ad species: individua enim non cadunt sub consideratione artis: non enim eorum est intellectus, sed sensus.²

This processus from vague, common, universal principles toward the proper knowledge of *species specialissimae* St. Thomas calls the *ordo determinandi* — as distinct from the *ordo demonstrandi* — of a science.³ This is the order of considering the different matters that fall under the contemplation of a particular science.

The reason for this order is sometimes presented as one of economy, i.e., in order to avoid the repetition of general principles when the knowledge of more specific matters is being sought in the order of concretion.⁴ However, if we ask ourselves why, for each species in the order of concretion, it is necessary to know the common or general principles, we shall see that the reason from economy hides a more profound truth.

In knowing we must begin with what is more known to us; but what is more known to us is the confused, the common, the universal. Therefore, it will be necessary for us to begin from the universal as from a confused whole and proceed toward the singular species as toward the subjective parts of the whole. For there is an opposition between what is more known to us and what is more knowable in itself, as well as between what is more certain for us and what is more certain in itself. What is more knowable in itself is what is more knowable naturally; and because a thing is more known naturally in so far as it has more of being, that will be more known naturally which is more in act, v.g., separated substances. But since we know by passing from potency to act, what will be first known to us will be what is at the other extremity from separated substances, i.e., what is potential. Thus material sensibles, intelligible only in potency, are first known to us absolutely. Separated substances, however, as we shall see, are known only at the end of all our scientific processes.

To know something potentially — to know a thing in such a way that there remains something unpenetrated and unexplained — is to know that indistinctly and in a certain confusion. Those propositions are known confusedly "which contain in themselves something in potency and in-

¹ *Ia*, q.85, a.3, c.

² *In I Meteorologicorum*, lect.1, n.1; cf. also *De Ver.*, q.2, a.4, c; q.12, a.1, ad 1 in contra.

³ *In I Phys.*, lect.1, n.5; cf. also, *Ia*, q.85, a.3; *In II de Anima*, lect.1, n.211; CAJETAN, *In de Ente et Essentia*, Prooemium; JOHN OF ST. THOMAS, *Curs. phil.*, T.II, P.I. q.1, a.3; CHARLES DE KONINCK, *op. cit.*, pp.xxviiff.

⁴ *In I Phys.*, lect.1.

distinct." Now universals are confused in this way, because, as we have seen, "universalia continent in se suas species in potentia, et qui scit aliquid in universali scit illud indistincte."¹

Within the order of determination, however, and at each level of its diminishing universality as it progresses from common principles known confusedly to distinct knowledge of individual species, there is another order in our speculative science, the order of demonstration. This latter discourse, as we shall see, differs radically from the discourse of the order of determination. For, while the order of determination proceeds from the confused to the distinct, from the universal in predication to the subjective parts, and from what is common to what is proper to individual species, demonstrative discourse proceeds from principles that are prior *in esse*, distinct and proper; the whole of its discourse is contained within the limits of distinct knowledge.²

Before passing on to the discourse of demonstrative science, it would be well here to face a difficulty that arises with respect to the mode of proceeding in the order of determination. St. Thomas speaks of the 'application' of the common principles of the eight books of the *Physics* to the more concrete considerations of the heavenly bodies, generation and corruption, etc.³ Cajetan speaks of universal wholes 'composed' and 'not composed' with their subjective parts.⁴ Does the *ordo determinandi*, the order toward concretion of a science, proceed compositively? In order to reply to this question we must distinguish by re-introducing the notions that assisted us in solving an analogous difficulty when we were determining the mode of total abstraction.

From the point of view of what is more known, or more intelligible *in se*, the order of determination goes from a confused, potential whole to a knowledge of the individual species. It goes from what is *in se* least intelligible, the universal *in praedicando*, to what, in the order of nature, is most intelligible, the *species specialissimae*.⁵ Viewed in this way, the order of determination is resolute in mode, proceeding as it does from something complex, something whole toward what is simple — the individual species themselves. Thus, from this point of view, the order of determination fulfills the *common or general notion* of resolution.⁶

¹ "...Tunc autem distinguitur eius cognitio, quando unumquodque eorum quae continentur potentia in universali actu cognoscitur: qui enim scit animal, non scit rationale nisi in potentia. Prius autem est scire aliquid in potentia quam in actu: secundum igitur hunc ordinem addiscendi quo procedimus de potentia in actum, prius quoad nos est scire animal quam hominem."—*In I Phys.*, lect.1, n.7.

² JOHN OF ST. THOMAS, *Curs. phil.*, T.II (ed. REISER), p.27, reply to the first difficulty.

³ *In de Caelo et Mundo*, Prooemium, n.3.

⁴ *In de Ente et Essentia*, Prooemium.

⁵ «Bien que les choses naturelles soient en elles-mêmes peu intelligibles comparées aux êtres séparés de la matière, elles restent en elles-mêmes plus intelligibles qu'elles ne le sont d'abord pour nous. Quand nous les disions plus intelligibles en soi, nous les disions telles par rapport à la connaissance indéterminée que nous en avons à l'origine».—CHARLES DE KONINCK, *Méthodologie scientifique*, IIe Partie, *Les Sciences physico-mathématiques*, sect. 2.

⁶ As we shall see in the next section, there is a more strict notion of resolution found in demonstrative discourse. The two should not be confused.

However, we do not consider the order of determination properly until we see it in relation to *our mode* of knowing. For, as we have seen, this order is demanded by the potentiality of our intellect. From this latter point of view, the order of determination proceeds from what is more simple *quoad nos* toward what is, in itself and naturally, more knowable — even though less knowable for us. Thus, formally, the order of determination is compositive in mode in the *common or general* sense of that mode of proceeding.¹

2. Demonstrative Discourse

Once the intelligible species or the quiddity has been abstracted we are far from being in the position of angelic minds who, from their creation, contemplate the *rationes factivae*. On the contrary, as we have already noticed, abstraction of the species or definition of a thing marks only the beginning of our scientific knowledge of it; for, the ability "to recognize definitions" must be distinguished from scientific knowledge.² Potentiality is not merely a characteristic of the initial stages of our way of knowing; it is something that besets our knowledge at every stage.

We have seen that the angels, without composition and division and without discourse, know, in the intelligible species that are connatural to them, everything that can be attributed to those species and everything that follows from such attribution. But human intelligible species, those that we acquire by abstraction, are possessed in a certain potentiality. We are not referring now to the potentiality that belongs to our species because they are affected by total abstraction. Rather, we are referring to the fact that our intelligible species, once abstracted, must be put into propositions and discourse in order to be adequately understood. St. Thomas summarizes this doctrine in the following passage from the *Summa*:
 ... Intellectus humanus necesse habet intelligere componendo et dividendo. Cum enim intellectus humanus exeat de potentia in actum, similitudinem quandam habet cum rebus generabilibus, quae non statim perfectionem suam habent, sed eam successive acquirunt. Et similiter intellectus humanus non statim in prima apprehensione capit perfectam rei cognitionem; sed primo apprehendit aliquid de ipsa, puta quidditatem ipsius rei, quae est primum et proprium objectum intellectus; et deinde intelligit proprietates et accidentia et habitudines circumstantes rei essentiam. Et secundum hoc necesse habet unum apprehensum alii componere et dividere; et ex una compositione et divisione ad aliam procedere, quod est ratiocinari.³

In other words, the intelligible species resulting from our abstraction are, as has been already seen, quiddities, natures or causes whose statements

¹ In the two succeeding sections we shall have an opportunity to discuss a stricter notion of composition which begins from principles prior *in esse* rather than from principles that are prior in our knowledge only, as is found here in the order of determination.

However, we are in a position to point out how badly founded is the view of those who see in the *ordo determinandi* of Aristotelian physics an example of a purely deductive science of nature. The composition and resolution which, as we shall see, are absolutely necessary for science in the strict Aristotelian sense are quite distinct from the resolution and composition found in the order of determination.

² "... Besides scientific knowledge there is its originitive source which enables us to recognize definitions."—ARISTOTLE, *Post. Anal.*, I, 72b25 (MURE transl.).

³ *Ia*, q.85, a.5, c.

constitute definitions. But causes are not known as causes unless they are known in relation to their effects. To know scientifically (*scire simpliciter*) requires that the object be known *in seipso*, i.e., in what it itself has of being and of truth. It is in this way that we distinguish scientific knowledge from sophistry which is *scire in alio* or *per accidens* and *secundum quid*.¹ In order to avoid sophistry, St. Thomas says, science *simpliciter* demands that we *apply* the causes of things to their effects: otherwise our knowledge remains potential and preserves a certain *per accidens* character.

...*Scire aliquid est perfecte cognoscere ipsum, hoc autem est perfecte apprehendere veritatem ipsius: eadem enim sunt principia esse rei et veritatis ipsius, ut patet ex II Metaphysicae. Oportet igitur scientem, si est perfecte cognoscens, quod cognoscat causam rei scitae. Si autem cognosceret causam tantum, nondum cognosceret effectum in actu, quod est scire simpliciter, sed virtute tantum, quod est scire secundum quid et quasi per accidens. Et ideo oportet scientem simpliciter cognoscere etiam applicationem causae ad effectum.*²

The application of causes or definitions stating the *quod quid est* of a thing cannot take place apart from a discourse wherein we pass from the knowledge of the definition to a knowledge of something else: — a conclusion in which a property is attributed to a subject. Now this application of quiddities or causes is compositive in mode, since it begins with what is simple and concludes to what is complex.

However, as St. Thomas points out, the conclusion can be known in two ways:

...*Discursus talis est procedentis de noto ad ignotum. Unde manifestum est quod, quando cognoscitur primum, adhuc ignoratur secundum. Et sic secundum non cognoscitur in primo, sed ex primo. Terminus vero discursus est, quando secundum videtur in primo, resolutis effectibus in causas: et tunc cessat discursus.*³

For, once the mind arrives at a proposition that follows from the principles there still remains the task of judging that proposition.⁴ The intellect cannot adhere to a proposition with certitude apart from a judgment of it. Now in all completely human sciences judgment depends upon evidence.⁵ For it is evidence that determines the intellect to accept one part of a contradiction with certitude.⁶ As a consequence the mind will be able to attach itself to the conclusion of a discourse on the condition that there

¹ For the sophist insists that, because he knows a definition or cause he thereby knows everything that happens to the definition or cause. Thus, since he knows Coriscus, and knows also that Coriscus is approaching, he therefore knows 'approaching'.—*In I Post. Anal.*, lect.4, n.4.

² *Ibid.*, n.5.

³ *Ia*, q.14, a.7, c.

⁴ *In I Post. Anal.*, lect.1.

⁵ "Illa autem videri dicuntur quae per seipsa movent intellectum nostrum vel sensum ad sui cognitionem" (*Ila Ilae*, q.1, a.4, c). It may be of two kinds: i) "ab ipso objecto quod est per seipsum cognitum sicut patet in principiis primis, quorum est intellectus; ii) per aliud cognitum sicut patet de conclusionibus, quarum est scientia."—*Ibid.*

We are said to have evidence *per seipsa* of those things which of themselves move the intellect or senses to a knowledge of themselves. But apart from the simple objects that of themselves move the intellect, and of which the intellect has immediate evidence (first principles), we are said to have mediate evidence of the conclusions of a discourse in science. Cf. *ibid.*

⁶ *In III Sent.*, dist.23, q.2, a.3, sol. iii.

is evidence for the connection of the subject and predicate. Let us see now how this kind of evidence is attained.

... Certitudo nihil aliud est quam determinatio intellectus ad unum. Tanto autem major est certitudo, quanto est fortius quod determinationem causat.

Determinatur autem intellectus ad unum tripliciter, ut dictum est. In intellectu enim principiorum causatur determinatio ex hoc quod aliquid per lumen intellectus sufficienter inspicitur per ipsum potest. — In scientia vero conclusionum causatur determinatio ex hoc quod conclusio secundum actum rationis in principia per se visa resolvitur.¹

Thus, in *demonstrativis*, that is to say in science understood properly, certain judgment is had through evidence (*visio*); but science, as distinct from *intellectus principiorum*,² demands that this evidence be procured through a resolution of the conclusion into the principles.³ "Ea quae in ista principia resolvere possumus per rationem dicuntur videri, sicut ea quae scimus demonstrative probata."⁴ It is in this resolution that, as St. Thomas tells us in the text cited above, the conclusion is seen in the principles and in it discourse rests. For when the speculative intellect succeeds in manifesting that the conclusion is involved in the very notion of the principles, evidence for certain judgment is achieved and the speculative intellect rests in its end which is the truth *simpliciter*.⁵

But in order thus to rest in the truth the intellect must examine the conclusion, its subject and predicate, and their relation one to the other

¹ In *III Sent.*, dist. 23, q. 2, a. 2, sol. iii. The passage cited in the text above is a summary of the same doctrine that St. Thomas has explained in greater detail earlier in the same article in the *Sentences*: "Cum autem ab assentiendo *sententia* dicatur, quae ut dicit Isaac, est determinata acceptio alterius partis contradictionis, oportet quod qui assentit, intellectum ad alteram partem contradictionis determinet. Quod quidem contingit tripliciter, secundum triplicem intellectus nostri considerationem.

Potest enim uno modo considerari intellectus noster secundum se. Et sic determinatur ex praesentia intelligibilis, sicut materia determinatur ex praesentia formae. Et hoc quidem contingit in his quae statim lumine intellectus agentis intelligibilia fiunt, sicut sunt prima principia quorum est intellectus; et similiter determinatur iudicium sensitivae partis ex hoc quod sensibile subjacet sensui quorum principalior et certior est visus. Et ideo praedicta cognitio intellectus vocatur *visio*.

Alio modo potest considerari intellectus noster secundum ordinem ad rationem quae ad intellectum terminatur, dum resolvendo conclusiones in principia per se nota, earum certitudinem efficit. Et hic est assensus scientiae..." — *Ibid.*, a. 2, sol. i.

² For the intellect has judgment also, but without resolution: the intellect grasps the truth of a proposition in the terms themselves. But scientific judgment, i.e., the judgment that terminates a demonstrative discourse, requires resolution to principles. "Iudicare non est proprium rationis, per quod ab intellectu distingui possit, quia etiam intellectus iudicat hoc esse verum, illud falsum. Sed pro tanto iudicium rationi attribuitur, et comprehensio intelligentiae quia iudicium in nobis ut communiter fit per resolutionem in principia, simplex autem comprehensio per intellectum." — *De Ver.*, q. 15, a. 1, ad 4.

³ It is for this reason that the art of judging is called '*analytica*' or '*resolutoria*'; "eo quod iudicium est cum certitudine scientiae. Et quia iudicium certum de effectibus haberi non potest nisi resolvendo in prima principia, ideo pars haec [id est, *iudicativa* quae deservit processui necessitatem inducenti] *Analytica* vocatur, id est *resolutoria*." — In *I Post. Anal.*, lect. 1, n. 6). And because the certitude of judgment possessed through resolution may be either according to the form of the syllogism or according to its matter (i.e., necessary and *per se* propositions), the art of judging or judicative logic is a science perfecting the mind both with respect to resolution to the formal principles of the sign — the syllogism — in the *Prior Analytics*; and with respect to resolution to the formal principles of the thing signified in the *Posterior Analytics*.

⁴ In *III Sent.*, dist. 24, a. 2, sol. i.

⁵ *Ia*, q. 14, a. 7, c.

in the light of the principles or causes enunciated in the premises.¹ When the examination shows that the predicate belongs necessarily to the subject because the definitive species expressed in the premises are such that they necessarily require the relation stated in the conclusion, we say that the latter has been proved. In this process of the reason the intelligible connection of subject and predicate in the conclusion is shown to derive from the intelligibility of its causes; the effect, as stated in the conclusion, is measured² by the only adequate rule or law an effect possesses, i.e., its cause. Hence it is that

Certitudo scientiae tota oritur ex certitudine principiorum: tunc enim conclusiones per certitudinem sciuntur, quando resolvuntur in principia... ex quo tamen nos certitudinem scientiae non acciperemus, nisi inesset nobis certitudo principiorum in quae conclusiones resolvuntur.³

It is only as a result of the resolution of the conclusion to the principles that a scientific *habitus* attains its object. The object of science is the complex conclusion in so far as it is manifested, illated or proved. The conclusion understood only as a proposition wherein an attribute is predicated of a subject is merely the material object of a science; its formal object is the proposition as illuminated by and seen in the principles.

...Cuiuslibet cognoscitivi habitus obiectum duo habet, scilicet id quod materialiter cognoscitur, quod est sicut materiale obiectum; et id per quod cognoscitur, quod est formalis ratio obiecti. Sicut in scientia geometriae materialiter scita sunt conclusiones; formalis vero ratio sciendi sunt media demonstrationis, per quae conclusiones cognoscuntur.⁴

It is for this reason that Cajetan is justified when he states that the ratio of science taken absolutely is "conclusiones scibiles in alio, id est in principiis."⁵

We shall, perhaps, be in a better position to judge of the nature and importance of the resolution of which we are now speaking, after we have devoted our attention to a brief consideration of those types of discourse in which the above resolution does not take place.

In the first place, resolution to causes is one of the principal differences that distinguishes science from faith; for, as we have seen, it is in this resolution that the conclusions of science participate in the *self-evidence* of first principles. "Quaecumque autem sciuntur, proprie accepta scientia, cognoscuntur per resolutionem in prima principia, quae per se praesto sunt intellectui; et sic omnis scientia in visione rei praesentis perficitur. Unde impossibile est quod de eodem sit fides et scientia."⁶

¹ And since the definition is the middle term and principle of *propter quid* demonstration, it may also be said that judgment is had when a conclusion is resolved to the definition. Further, since the definition is a statement of the quiddity, something may be said to be known scientifically when reduction is made to the quiddity. This "happens in demonstration in which there is no error."—*Ia*, q.17, a.3, ad 1.

² *Ia*, q.79, a.8; *De Ver.*, q.15, a.1; *In III Sent.*, dist.35, q.2, a.2, sol.i.

³ *De Ver.*, q.11, a.1, ad 13.

⁴ *IIa IIae*, q.1, a.1, c; cf. also: *In III Sent.*, dist.24, q.1, a.1, qu.1; *De Ver.*, q.14, a.8; *Quaestio disputata de Spe*, q.un., a.1.

⁵ *In Iam Partem*, q.1, a.2, n.3.

⁶ *De Ver.*, q.14, a.9, c.

Again, when St. Thomas wants to distinguish the gift of prophesy from scientific knowledge he points to the fact that prophesy does not resolve to the principles of what it knows.

In intellectu igitur humano lumen quoddam est quasi qualitas vel forma permanens, scilicet lumen essenziale intellectus agentis, ex quo anima nostra intellectualis dicitur. Sic autem lumen propheticum in propheta esse non potest. Quicumque enim aliqua cognoscit intellectuali lumine, quod est ei effectum quasi connaturale ut forma in eo consistens, oportet quod de eis fixam cognitionem habeat; quod esse non potest, nisi ea inspiciat in principio in quo possunt cognosci: *quamdium enim non fit resolutio cognitionum in sua principia, cognitio non firmatur in uno, sed apprehendit ea quae cognoscit secundum probabilitatem quamdam utpote ab aliis dicta*: unde necesse habet de singulis acceptionem ab aliis habere. Sicut si aliquis nesciret geometriae conclusiones ex principiis deducere, habitum geometriae non haberet; sed quaecumque de conclusionibus geometriae sciret, apprehenderet quasi credens docenti, et sic indigeret ut de singulis instrueretur; non posset enim ex quibusdam in alia pervenire firmiter, non facta resolutione in prima principia.¹

Finally, in a passage in the *De Veritate*,² St. Thomas shows how resolution to principles distinguishes a scientific *habitus* from the *habitus* of dialectic which he here calls the ratiocinative. Because the following text insists upon the function of the quiddity in the resolute mode, it provides an excellent résumé of the second and third stages of the process — i.e., the application of the *quod quid est* and the resolution of conclusions to principles — that are required for scientific knowledge.

Scientificum autem et ratiocinativum diversae quidem potentiae sunt, *quia quantum ad ipsam rationem intelligibilis distinguuntur*. Cum enim actus alicujus potentiae se non extendat ultra virtutem sui objecti, omnis operatio quae non potest reduci in eandem rationem objecti, oportet quod sit alterius potentiae, quae habeat aliam objecti rationem. Objectum autem intellectus est quod quid est, ut dicitur in III de Anima; et propter hoc, actio intellectus extenditur quantum potest extendi virtus ejus ad quod quid est: per hanc autem primo ipsa principia cognita fiunt, ex quibus cognitio ulterius ratiocinando pervenitur in conclusionum notitiam: *et hanc potentiam quae ipsas conclusiones in quod quid est nata est resolvere, Philosophus scientificum appellat*. Sunt autem quaedam in quibus non est possibile talem resolutionem facere ut perveniatur usque ad quod quid est, et hoc propter incertitudinem sui esse; sicut est in contingentibus in quantum contingentia sunt: unde talia non cognoscuntur per quod quid est, quod erat proprium objectum intellectus, sed per alium modum, scilicet per quamdam conjecturam de rebus illis de quibus plena certitudo haberi non potest. Unde ad hoc alia potentia requiritur. Et quia haec potentia non potest reducere rationis inquisitionem usque ad suum terminum quasi ad quietem, sed consistit in ipsa inquisitione quasi in motu, opinionem solummodo inducens de his quae inquirunt; ideo quasi a termino suae operationis haec potentia ratiocinativum vel opiniativum nominatur.³

The success or failure of the mind to resolve the conclusion of its discourse into the principles founds the distinction between demonstrative science and opinion or dialectic. But since demonstrative science achieves certain judgment, resolution to principles is the basis for the distinction between

¹ *Ibid.*, q.12, a.1, c.

² Q.15, a.2, ad 3.

³ *De Ver.*, q.15, a.2, ad 3. "Alio modo dicitur processus rationalis ex termino, in quo sistitur procedendo. *Ultimus enim terminus, ad quem rationis inquisitio perducere debet, est intellectus principiorum, in quae resolvendo iudicamus; quod quidem quando fit, non dicitur processus vel probatio rationabilis, sed demonstratio*. Quando autem inquisitio rationis non potest usque ad ultimum terminum perducere, sed sistitur in ipsa inquisitione, quando scilicet inquirenti adhuc manet via ad utrumlibet; et hoc contingit, quando per probabiles rationes proceditur, quae natae sunt facere opinionem vel fidem, non scientiam, et sic rationabilis processus dividitur contra demonstrativum. Et hoc modo rationabiliter procedi potest in qualibet scientia, ut ex probabilibus paretur via ad necessarias probationes. . . — *In de Trin.*, q.6, a.1.

certain and merely opinative or probable discourse. Again, because the discourse that remains "in ipsa inquisitione quasi in motu" is dialectical, the success or failure of our resolution to principles distinguishes the dialectical *habitus* from the *habitus* of science.¹

We shall have recognized in the considerations thus far made what St. Thomas so frequently describes as the "circle" in our mode of knowing. The abstraction of quiddities, their application to effects and the resolution of conclusions to quiddities describes the movement² of the human intellect in its effort to acquire scientific knowledge. It is this movement in our mode of knowing which St. Thomas compares to the movement of generable and corruptible things.³

In explaining the circular mode of human knowledge St. Thomas adopts, according to circumstances, two different points of view. Sometimes he speaks of the circle that begins in sense knowledge; at other times he views the circle of our knowing in the perspective of purely intellectual knowledge.

In order to understand these two ways of speaking about the "circle" we shall have to recall a distinction already alluded to earlier in this essay: knowledge *simpliciter* or absolutely begins in sense, while our science begins in the universal propositions and concepts of the intellect.⁴ Knowledge *simpliciter* is found in the order of the singular to the universal; science is in the universal only.⁵

¹ *De Ver.*, q.15, a.2, ad 3.

² Of course, this is not movement in the strict sense, since it is an *actus perfecti*, rather than the *actus imperfecti* by which movement in the strict sense is defined (*In III de Anima*, lect.12: *Ia*, q.58, a.1, ad 1).

³ *De Ver.*, q.15, a.1, c.

⁴ *In I Phys.*, lect.1; *Ia*, q.85, a.3, c.

⁵ "Sed dicendum est quod hic loquitur de ordine singularis ad universale simpliciter, quorum ordinem oportet accipere secundum ordinem cognitionis sensitivae et intellectivae in nobis. Cognitionis autem sensitivae est in nobis prior intellectiva, quia intellectualis cognitio ex sensu procedit in nobis. Unde et singulare est prius et notius quoad nos quam universale. In *I autem Physic.* non ponitur ordo universalis ad singulare simpliciter, sed magis universalis ad minus universale, ut puta, animalis ad hominem et sic oportet quod quoad nos universalis sit prius et magis notum."—*In I Post. Anal.*, lect.4, n.16.

Thus, simple knowledge, or the order of the singular to the universal, has its origin in sense knowledge; and every complete explanation of human knowing will have to account for the contribution made by sense. Science, however, begins in the universal; it assumes the whole order of the singular to the universal.

From these two different points of view we can speak of diverse termini in the resolution of conclusions known scientifically. This is why sometimes St. Thomas says that all our knowledge resolves to sense: "...Iudicium non dependet tantum a receptione speciei, sed ex hoc quod ea de quibus iudicatur, examinantur ad aliquod principium cognitionis, sicut de conclusionibus iudicamus eas in principia resolvendo..." Sed quia primum principium nostrae cognitionis est sensus, oportet ad sensum quodammodo resolvere omnia de quibus iudicamus: unde Phil. dicit in *III Coel.* et *Mundi*, quod complementum artis et naturae est res sensibilis visibilis, ex qua debemus de aliis iudicare; et similiter dicit in *VI Ethic.* (cap. viii, in fin.) quod sensus sunt extremi sicut intellectus principiorum; extrema appellans illa in quae fit resolutio iudicantis."—*De Ver.*, q.12, a.3, ad 2; *ibid.*, ad 3.

Here obviously St. Thomas is speaking of the whole order of human knowing—from sense knowledge, through the universal knowledge of the intellect, and back again to sense.

Sometimes, however, St. Thomas says that our science resolves variously, depending upon the formal principles of the particular science in question. In this perspective, Philosophy of Nature resolves to sense; Mathematics to the imagination and Metaphysics to the intellect. Here he speaks only of the order of purely intel-

In the realm of purely intellectual knowledge the description of the circle in our mode of knowing prescind from the act of abstraction; the latter is set aside because it has its origin, as we have seen, in sense knowledge. From this point of view the circle in human knowledge is a kind of movement from the quiddity to the conclusions that are implied in the definition which states the quiddity. The circle is completed by the movement that resolves the conclusions into their definitive principles. It is in this way that the circle in our mode of knowing is said to go from intellect to intellect:

...Ratiocinatio hominis, cum sit quidam motus, ab intellectu progreditur aliquorum, scilicet naturaliter notorum absque investigatione rationis, sicut a quodam principio immobili; et ad intellectum etiam terminatur, in quantum iudicamus per principia per se naturaliter nota, de his quae ratiocinando inveniuntur.¹

Again, within the order of intellectual knowledge St. Thomas refers to the movement from principles to conclusions as a *via inventionis vel inquisitionis*, while the resolution of the conclusion into the principles is called, appropriately, a *via iudicii*.

...Et quia motus semper ab immobili procedit, et ad aliquid quietum terminatur, inde est quod ratiocinatio humana secundum viam inquisitionis vel inventionis procedit a quibusdam simpliciter intellectis, quae sunt prima principia; et rursus in via iudicii resolvendo redit ad prima principia, ad quae inventa examinat.²

In the text just cited we find that judgment is described as proceeding resolutely. Discovery, on the other hand, is compositive in mode. "...Intellectualis consideratio est principium rationalis secundum viam compositionis, vel inventionis, in quantum intellectus in uno multitudinem comprehendit."³

Hence, within the limits of purely intellectual knowledge there is what might be termed a twofold act: the first has for end the discovery of conclusions. This is the discourse which we saw above involves application of principles or quiddities and proceeds compositively. The other has for end the manifestation of the judgment of the conclusion: it is in this latter act that the mind resolves conclusions into their causes.

However, when St. Thomas does not limit himself to intellectual knowledge only, when he wants to include in his description of our circular mode of knowing not only what belongs to the intellect alone, but also what it derives from the senses, he introduces into his account the act of abstraction, and immediately 'invention' and 'judgment' take on new meanings. For, from this point of view, abstraction becomes an *inventio* in the sense of discovering principles; and what we have called the application of principles in order to discover conclusions becomes a *judicium*. Judgment,

lectual knowledge, or science, which depends upon principles variously related to matter (cf. *In de Trin.*, q.6, a.2, c.). Fundamentally, however, resolution to sense is primary.

¹ *Ia*, q.79, a.12, c; cf. *ibid.*, a.9; *De Ver.*, q.15, a.1, c.

² *Ia*, q.79, a.8, c; cf. also: *Ibid.*, a.12, c; *De Ver.*, q.14, a.1, c; q.15, a.1, c; q.17, a.1, c; q.20, a.1, c; q.10, a.8, ad 10; *In I Post. Anal.*, lect.1; JOHN OF ST. THOMAS, *Curs. theol.* (ed. VIVES), Vol. VI, p.640, nn.21ss.

³ *In de Trin.*, q.6, a.1, ad ter. quaest. It is this *inventio* which, in his commentary on the *Posterior Analytics* (I, lect.1), St. Thomas compares to those operations of nature which succeed "ut in pluribus." And since *inventio* does not achieve certitude always with necessity, the discovered conclusion must be judged by resolution to first principles.

in this latter sense, as we shall see presently, includes both the act whereby the mind applies principles and the act whereby it resolves conclusions into their principles. In other words, *judicium* in this sense is nothing less than the "circle" found in purely intellectual knowledge. This is to say, it is demonstration.

Est autem considerandum quod in nobis est duplex compositio intellectus. Una quidem quae pertinet ad inventionem veritatis; alia vero quae pertinet ad iudicium. Inveniendū quidem quasi congregantes, ex multis ad unum procedimus, sive multa dicantur diversa sensibilia, per quorum experimentum universalem cognitionem accipimus, sive multa dicantur diversa signa, ex quibus ratiocinando ad talem veritatem pervenimus... In iudicio vero procedimus ab aliquo communi principio ad praedicta multa et divisibilia, sive particularia sive effectus et signa.¹

Thus, when we view the whole scope of the process of knowing, we see that it proceeds from sense, and, by abstraction, to quiddities or definitions, and from these latter to conclusions that are, finally, resolved into the definitive principles. Then abstraction must be viewed as a way toward discovering principles and causes; the other two movements, that of the application of the causes in order to know conclusions and of the resolution of the latter into their principles, are grouped together under the simple designation, judgment. Here, obviously, judgment stands for the two acts that earlier in this section of our essay we found necessary for every demonstration.

In the fourth article of the Sixth Question in his commentary on Boethius's *De Trinitate*, St. Thomas indicates still another way of considering the entire movement of speculative discourse from sense to judgment.

... In scientiis speculativis semper ex aliquo prius noto proceditur, tam in demonstrationibus propositionum quam etiam in inventionibus definitionum. Sicut enim ex propositionibus praecognitis aliquis devenit in cognitionem conclusionis, ita ex conceptione generis et differentiae et causarum rei aliquis devenit in cognitionem speciei. Hic autem non est possibile in infinitum procedere, quia sic omnis scientia periret et quantum ad demonstrationes et quantum ad definitiones, cum infinita non sit pertransire. Unde omnis consideratio scientiarum speculativarum reducitur in aliqua prima, quae quidem homo non habet necesse addiscere aut invenire, ne oporteat in infinitum procedere, sed eorum notitiam naturaliter habet. Et huiusmodi sunt principia demonstrationum indemonstrabilia... in quae omnes demonstrationes scientiarum reducuntur, et etiam primae conceptiones intellectus, ut entis, unius, et huiusmodi, in quae oportet reducere omnes definitiones scientiarum praedictarum.

Ex quo patet quod nihil potest sciri in scientiis speculativis neque per viam demonstrationis, neque per viam definitionis nisi ea tantummodo, ad quae praedicta naturaliter cognita se extendunt.²

¹ *De Divinis Nominibus*, c.7, lect.2, in *Opera Omnia* (ed. MANDONNET), T.II, pp.523-524. "Veritas enim existentium radicaliter consistit in apprehensione quidditatis rerum, quam quidditatem rationales animae non statim apprehendere possunt per seipsam, sed diffundunt se per proprietates et effectus qui circumstant rei essentiam, ut ex his ad propriam veritatem ingrediantur. Haec autem circulo quodam efficiunt, dum ex proprietatibus et effectibus causas inveniunt, et ex causis de effectibus iudicant. Et quia mentes angelicae secundum unitam et simplicem considerationem veritatem inspiciunt, deficiunt ab eis animae in quantum per divisionem et multitudinem variarum rerum diffunduntur ad veritatis cognitionem. Sed tamen in hoc ipso quod multa in unum convolvere possunt, sicut cum ex multis effectibus et proprietatibus perveniunt ad cognoscendam rei essentiam, tantum dignae habentur animae ut homines habeant intellectus quodammodo angelis aequales, scilicet secundum proprietatem et possibilitatem animarum. Inquisitio enim rationis ad simplicem intelligentiam veritatis terminatur, sicut incipit a simplici intelligentia veritatis, quae consideratur in primis principiis."—*Ibid.*, pp.525-526.

² *In de Trin.*, q.6, a.4, c.

What St. Thomas here calls the *via definitionis*, the discovery of definitions or intelligible species, is equivalent to the movement whereby, from many sensibles or signs we acquire a universal knowledge of the truth.¹ Again, it is the discourse that proceeds resolutely from the properties and effects of things toward their essences.² For "the end of someone defining is the resolution of the defined into its principles."³ What in the present text is termed a *via demonstrationis* finds its counterpart in the *judicium* of the texts from the *De Divinis Nominibus*.

Finally, in at least two other places, St. Thomas has summarized the steps in our acquisition of scientific knowledge. These passages are of particular interest for us because they employ, in their description of the whole movement of human knowing, the terms whose definitions we are seeking in this essay. The first of these texts is to be found in St. Thomas's commentary on the First Book of the *Politics*.

Modus autem hujus artis est talis: Quod sicut in aliis rebus ad cognitionem totius necesse est dividere compositum usque ad incompressa, idest usque ad indivisibilia quae sunt minimae partes totius (puta ad cognoscendum orationem, necesse est dividere usque ad litteras, et ad cognoscendum corpus naturale mixtum, necesse est dividere usque ad elementa): sic, si consideremus ex quibus civitas componatur, magis poterimus videre de praemissis regiminibus quid unumquodque sit secundum se et quid differant ad invicem, et utrum aliquid secundum unumquodque eorum possit artificialiter considerari. In omnibus enim ita videmus quod si quis inspicat res secundum quod oriuntur ex suo principio, optime poterit in eis contemplari veritatem. Et hoc sicut est verum in aliis rebus, ita etiam est verum in his de quibus intendimus. *In his autem verbis Philosophi considerandum est quod ad cognitionem compositorum primo opus est via resolutionis, ut scilicet dividamus compositum usque ad individua. Postmodum vero necessaria est via compositionis, ut ex principiis indivisibilibus jam notis dijudicemus de rebus quae ex principiis causantur.*⁴

The other passage which describes in almost identical terms the movement of our speculative discourse is taken from St. Thomas's commentary on the *Metaphysics*. The text is of special importance because it is followed by an explanation wherein St. Thomas gives the reason for the twofold *via* in the process of human knowledge.⁵ In that explanation it will be seen immediately that our peculiar mode of knowing demands a certain resolution completed by a kind of composition and ultimate resolution. Because we are the lowest in the order of intellectual beings, because we are in potentiality with respect to what is most knowable, we must begin to know by abstraction,⁶ and, since potentiality affects all of our cognitive acts, there follows the necessity of composing arguments the conclusions of which must be resolvable into their principles.

¹ *De Div. Nom.*, pp.523-524.

² *Ibid.*, pp.525-526.

³ *In VII Metaph.*, lect.15, n.1615.

⁴ *In I Politicorum*, lect.1, n.5. We might add here also the following short passage from St. THOMAS's prologue to the commentary on the *Politics*. While it does not designate the procedures as resolute or compositive, there can be no doubt that St. Thomas is here describing the same mode of knowing that he considers later in the First Book of the *Politics*: "Sicut enim scientiae speculativae quae de aliquo toto considerant, ex consideratione partium et principiorum notitiam de toto perficiunt, passiones et operationes totius manifestando; sic et haec scientia principia et partes civitatis considerans de ipsa notitiam tradit, partes et passiones et operationes ejus manifestans: et quia practica est, manifestat insuper quomodo singula perfici possunt: quod est necessarium in omni practica scientia."

⁵ *In II Metaph.*, lect.1, nn.279-289.

⁶ *Ibid.*, n.285.

..Hoc ostendit difficultatem quae est in consideratione veritatis, quia non possumus habere circa veritatem totum et partem. Ad cuius evidentiam considerandum est, quod hoc dixit omnibus esse notum, per quod in alia introitur. Est autem duplex via procedendi ad cognitionem veritatis. Una quidem per modum resolutionis, secundum quam procedimus a compositis ad simplicia, et a toto ad partem, sicut dicitur in primo Physicorum, quod confusa sunt prius nobis nota. Et in hac via perficitur cognitio veritatis, quando pervenitur ad singulas partes distincte cognoscendas. — Alia est via compositionis, per quam procedimus a simplicibus ad composita, qua perficitur cognitio veritatis cum pervenitur ad totum. Sic igitur hoc ipsum, quod homo non potest in rebus perfecte totum et partem cognoscere, ostendit difficultatem considerandae veritatis secundum utramque viam.¹

Let us note, in the first place, that these passages are descriptive of the whole process of our speculative knowledge as it begins in sense and rests ultimately in the actual knowledge of causes. What St. Thomas here calls the *via resolutionis* is clearly the work of abstraction that we have dwelt upon in an earlier section of the present essay: it is, again, the *via inventionis* of the definition, of principles and causes that we saw to be identifiable with the same act of abstraction. The *via compositionis* mentioned in the texts now under consideration is the *via iudicii* which follows the *via inventionis* when the latter signifies the discovery of principles, i.e., when it refers to the act of formal abstraction. We have seen, however, that judgment in this latter sense involves the application of principles in order to find conclusions, and the resolution of conclusions to their principles in order to judge conclusions. As a consequence these two acts of the mind are included in the *via compositionis* of the texts from the *Politics* and the *Metaphysics*.

These two modes or *viae* represent what the intellect must strive to do when faced with knowing whatever thing speculatively: it must discover the *quid est*, the nature or substance of the thing in so far as is possible; it must then demonstrate the proper passions of the object under investigation.² We arrive at the *quid est* through a consideration of the accidents that surround the object. In its turn the *quid est* must enable us to come to a scientific knowledge of the proper passions of the subject of our study. The attribution of properties to a subject must be made and understood in the light of the definitions previously known. And if the *quid est* or definition should fail to illuminate that attribution, it is a remote and dialectical, but not a real, definition which must always be "ex propriis et ex essentialibus."³

If, now, we revert to the text from the *De Trinitate* wherein the process of scientific knowledge is divided into a *via definitionis* and a *via demonstra-*

¹ *Ibid.*, n.278.

² *In I de Anima*, lect.1, n.15.

³ *Ibid.* Hence the conditions that every definition is required to fulfill: "Et dicit quod in definiendo locum, intentio nostra debet ad quatuor attendere, quae quidem necessaria sunt ad definitionem perfectam. Primo quidem, ut ostendatur quid sit locus: nam definitio est oratio indicans quid est res. Secundo, ut solvantur quaecumque opposita sunt circa locum: nam cognitio veritatis est solutio dubitatorum. Tertium est, quod ex definitione data manifestentur proprietates loci, quae insunt ei: quia definitio est medium in demonstratione, qua propria accidentia demonstrantur de subiectis. Quartum est, quod ex definitione loci erit manifesta causa, quare aliqui discordaverunt circa locum; et omnium quae sunt opposita circa ipsum. Et sic pulcherrime definitur unumquodque."—*In IV Phys.*, lect.5, n.3; cf. *In I de Anima*, lect.9, n.137.

tionis, we shall see that the former corresponds to the resolute process described in the texts given immediately above. The mode or *via* of demonstration will, on the other hand, be the equivalent of the compositive process described in the texts from the *Politics* and the *Metaphysics*. Consequently, resolution will consist in the search for principles and causes, while composition will involve all those movements which we found to be necessary for demonstration in our science.

It is possible at this point that someone might object to designating the *inventio* or discovery of definitions as resolute in mode. For, when we were discussing the "circle" in our mode of knowing as this is found within the limits of purely intellectual knowledge, *inventio* proceeded from principles or causes to conclusions or effects. It was, therefore, a compositive process.

St. Thomas shows us how to face this problem in an article in the *Prima Secundae* wherein he points out that an inquisition or discovery can be taken in two ways depending upon the kind of principles with which the inquisition begins.

Dicendum quod in omni inquisitione oportet incipere ab aliquo principio. Quod quidem si, sicut est prius in cognitione, ita etiam sit prius in esse, non est processus resolutorius, sed magis compositivus; procedere enim a causis in effectus, est processus compositivus, nam causae sunt simpliciores effectibus. Si autem id quod est prius in cognitione, sit posterius in esse, est processus resolutorius; utpote cum de effectibus manifestis iudicamus, resolvendo in causas simplices.¹

Now, since the discovery of the intelligible species, or definitions, begins from sense knowledge and consists precisely in an effort to discover causes, this process cannot have as principle something that is prior *in esse*. Hence, we may be permitted to designate the search for definitions as a kind of resolute inquisition — provided, of course, that the inquisition is regarded as merely preparatory to the act whereby the quiddity is recognized by the mind. For definitions, once their terms are recognized, are *per se* known. However, an inquisition is frequently necessary *quoad nos* in order that the meaning of the terms be grasped.

But only the discovery that begins with causes is properly designated as compositive in mode. This, however, is not a discovery of species or quiddities, but, rather, as we have seen, it is a discovery of conclusions. Further, when St. Thomas, speaking of the whole movement of our knowledge, calls abstraction an *inventio* and the two succeeding acts taken together a *judicium*,² he must necessarily understand the discovery of conclusions to be compositive in mode. For unless the discovery of conclusions begins with a cause that is prior *in esse*, there can be no subsequent resolution into causes and consequently no certain judgment.

We may, therefore, distinguish in the *via resolutionis* and the *via compositionis* of the texts from the *Politics* and the *Metaphysics* the following three acts. There is first of all a resolution of some confused whole, of effects, of objects present to sense and imagination from which the simple quiddities or causes are abstracted. These latter are then composed

¹ *Ia IIae*, q.14, a.5, c.

² Cf. the texts cited above from St. THOMAS'S commentary on the *De Div. Nom.*

with, or applied to, effects: — an operation wherein we attach a predicate to a subject in order to form a conclusion. Finally, the conclusion is shown to resolve into its causes or principles.

Considering these three acts separately, we see that the two that are denominated by the resolutive mode — the first and third — actually fulfill the common notion of resolution described in the introduction to this essay. For, since they both move toward causes, to that extent they both move in the direction of something simple. Similarly, each of them proceeds from what is complex in comparison to the causes to which they are ordered. The resolution of abstraction proceeds from the complex of sense knowledge and from effects and accidents, while the resolution that is ordered to judgment begins from complex conclusions.¹

The composition involved in this demonstrative discourse fulfills the common notion of the compositive mode: it proceeds from causes to effects, from something simple to what is complex. However, it does not fulfill the more determinate notion of composition which we disengaged in the first part of this essay. It is not ordered to the physical existence of things. It is rather an instrument of, and ordered to, the resolution which follows it. For we compose propositions in a discourse with a view to resolving the conclusions of the discourse into their causes.

We are now in a position to reply to the objection raised concerning the "compositive" character of demonstration *propter quid*. In the introduction to the present study it was objected that, while demonstration *propter quid* belongs uniquely to speculative science, it seems to proceed compositively, a priori, from causes to effects. We now know that the whole efficacy of a *propter quid* demonstration or a priori proof lies in the fact that its conclusion can be resolved into its principles. In other words, a *propter quid* demonstration involves an inquisition that proceeds compositively, i.e., from principles that are prior *in esse*, from the causes of the connection of the subject and predicate in the conclusion. In this way the resolution of the conclusion into its causes is guaranteed in advance.

However, it is especially by taking the above three acts as a single process that we best see the strictly resolutive character of demonstrative discourse. It will be remembered that in our outline of the stages of demonstrative knowledge we pointed out that discourse belonged to the human mode of knowing exclusively. We saw that because of the potentiality of our minds we are unable in the first grasp of the quiddity of things to penetrate all that belongs to them. As a consequence, we are obliged to use the quiddities or definitions of things as principles in a discourse in order to see what is further implied in them by way of conclusion. The resolution of the conclusion into the principles is required in order to guarantee the certitude of the discovered conclusion. In this latter resolution the conclusion is seen to share in the immateriality, the intelligibility and the certitude of the principles. Hence, we see that the composition and resolution that follow upon the abstraction of the quiddity are in function of this latter. Nevertheless, because of the essentially potential cha-

¹ *Ia IIae*, q.14, a.5, c.

racter of the quiddities formally abstracted, demonstrative discourse is denominated resolute in mode on account of the resolution of conclusions to principles. For here discourse ceases and the end of speculation is attained.

We are able to understand now how exactly St. Thomas's formulae — "definiendo et dividendo et considerando universalialia praedicata" or the resolution of a composite "in principia universalialia formalia" — define the resolute mode.¹ These formulae state nothing more nor less than the *via resolutionis* and the *via compositionis* of the texts quoted above from the *Politics* and the *Metaphysics*. Thus also to consider an object speculatively amounts to a resolute treatment of it: a speculative consideration of whatever object obliges the mind to define it and to show its nature.² This, as we have seen, is precisely what the resolute mode sets itself to achieve. Finally, we see that resolution is exactly defined as an order to causes. Science is perfected in the scientific judgment which requires that conclusions be seen in their causes: "Certum iudicium de re aliqua maxime datur ex sua causa."³

That this resolution requires a kind of compositive process in the common or broad sense in no way detracts from the essentially resolute character of demonstrative discourse.

* * *

In what has preceded we sought to observe the resolute and compositive modes at work in the discourse of determination and the discourse of demonstration. It will be observed that these considerations have been confined to the cognitive processes within a single science. They say nothing of the relation of one demonstrative science to another.

However, we noted briefly above that the speculative sciences are distinguished according to diverse abstractibility, or, what comes to the same thing, according to diverse immateriality or modes of definition. We saw that as objects may be related in three distinct ways to matter, there are three distinct modes of definition, and therefore the distinct sciences of Philosophy of Nature, Mathematics and Metaphysics. St. Thomas speaks of resolution and of composition in relation to the order of these sciences one to the other. Perhaps his most explicit statement of this order is to be found in the commentary on the *De Trinitate* of Boethius⁴ where St. Thomas shows that it is characteristic of Metaphysics to proceed according to an intellectual, as distinguished from a rational, mode.⁵

St. Thomas first defines the rational and intellectual processes, and then attributes the one to the human intellect, the other to God pre-eminently, but also to the angels secondarily. To proceed rationally is to proceed toward the truth diffusively, progressing from many accidents

¹ Ia, q.14, a.16, c.

² De Ver., q.3, a.3, ad 9.

³ IIa IIae, q.9, a.2, c.

⁴ In de Trin., q.6, a.1, ad tert. quaest.

⁵ For these two modes, cf. De Ver., q.15, a.1, c.

and signs to the possession of some simple truth. It is because man must thus be concerned with the many that, in comparison with God and the angels, his mode of knowing is defective. The angels, as we have seen, understand all that the angelic mind is capable of knowing in the intelligible species given to them. The human mode of knowing, however, becomes assimilated to the angelic mode in so far as our minds are able to grasp some one simple truth — even though this has been achieved by passing through the many. Hence, St. Thomas concludes:

Sic ergo patet quod rationalis consideratio ad intellectualem terminatur secundum viam resolutionis, in quantum ratio ex multis colligit unam et simplicem veritatem. Et rursum, intellectualis consideratio est principium rationalis secundum viam compositionis vel inventionis, in quantum intellectus in uno multitudinem comprehendit. Illa ergo consideratio, quae est terminus totius humanae ratiocinationis, maxime est intellectualis consideratio. Tota autem consideratio rationis resolventis in omnibus scientiis ad considerationem divinae scientiae terminatur.¹

St. Thomas then goes on to explain how all the other sciences resolve to divine science or wisdom; the resolution is considered, first, in the order of those things that are not only principles but are also complete natures.²

Ratio enim, ut prius dictum est, procedit quandoque de uno in aliud secundum rem, ut quando est demonstratio per causas vel effectus extrinsecos, componendo quidem cum proceditur a causis ad effectus [quasi resolvendo cum proceditur ab effectibus ad causas], eo quod causae sunt effectibus simpliciores et magis immobiliter et uniformiter permanentes, resolvendo autem quando e converso. Ultimus ergo terminus resolutionis in hac via est, cum pervenitur ad causas supremas maxime simplices, quae sunt substantiae separatae.³

Secondly, in the order of those things that are not complete natures in themselves but only principles of natures,⁴ St. Thomas explains the resolutive processus in the following terms:

Quandoque vero procedit de uno in aliud secundum rationem, ut quando est processus secundum causas intrinsecas, componendo quidem, quando a formis maxime universalibus in magis particularia proceditur; resolvendo autem quando e converso, eo quod universalis est simplicius. Maxime autem universalis sunt, quae sunt communia omnibus entibus, et ideo terminus resolutionis in hac via ultimus est consideratio entis et eorum quae sunt entis in quantum huiusmodi.⁵

St. Thomas then concludes that, since separated substances, being *in communi* and what belong to the latter, constitute the subject matter of wisdom, it is clear that wisdom is especially intellectual in mode. Further, because wisdom considered *in se* proceeds intellectually, which is to say compositively, it offers principles to the inferior sciences and defends them. This is why it is called First Philosophy. But because it considers things that *quoad nos* are less knowable and because we must come to a knowledge of them through the rational processus of the inferior sciences, wisdom, as a purely intellectual processus, is learned after all the other disciplines and sciences. It is at the term of the rational process of the Philosophy of Nature and Mathematics. For this reason it is called Metaphysics "quasi transphysica quia post physicam resolvendo occurrit."⁶

¹ *In de Trin.*, q.6, a.1, ad tert. quaest.

² *Ibid.*, q.5, a.4.

³ *Ibid.*, q.6, a.1, ad tert. quaest.

⁴ *Ibid.*, q.5, a.4.

⁵ *Ibid.*, q.6, a.1, ad tert. quaest.

⁶ *Ibid.* Cf. also *In Metaph.*, Prologue.

In this explanation we find the doctrine of resolution and of composition that, elsewhere, was used to describe the discourse within a single science now employed to manifest the movement from the lower sciences to wisdom. Just as there formal abstraction resolved in the sense that it discovered causes, definitions or middle terms, so here all of the inferior sciences are viewed as ordered to the resolute discovery of first causes and the most universal forms or principles.¹ Obviously this does not mean that there is no demonstrative knowledge in the sciences inferior to Metaphysics. We have seen that these resolve their conclusions into their own proper principles. However, the proper principles of each of the lower sciences are judged and defended by Metaphysics: they resolve into the first principles of being and the first causes: "unde convenienter [sapientia] iudicat et ordinat de omnibus: quia iudicium perfectum et universale haberi non potest nisi per resolutionem ad primas causas."²

But wisdom in its perfection proceeds intellectually. We have seen that to know in a manner proper to the intellect as intellect belongs primarily to God, but in a certain fashion to angels as well. Further, in the texts cited above we have seen that to know in a mode proper to the intellect is to know compositively. In order, then, to understand more adequately the compositive mode, let us reflect here briefly upon the manner of God's knowledge of created things.

To know intellectually or compositively is to know by way of what is prior *in esse*, to know first the causes of something produced or producible. God not only knows causes: His knowledge is the cause of things.³ God

¹ It is for this reason that St. Thomas, in the Prooemium to the *Metaphysics*, tells us that wisdom gets the name 'metaphysics' because it considers being and what follows upon being: "Haec enim transphysica inveniuntur in via resolutionis, sicut magis communia post minus communia." A little later in the commentary itself he tells us that in the order of science ("ad investigationem naturalium proprietatum et causarum"), what is less common or universal (*in causando*) is first known, "eo quod per causas particulares, quae sunt unius generis vel speciei, pervenimus in causas universales."—*In I Metaph.*, lect.2, n.44. In other words (cf. *Ia*, q.79, a.9) temporal things are the means whereby we come to a knowledge of what is eternal. By way of a certain resolute *inventio* we arrive at a knowledge of the eternal principles in the light of which we are able to judge and dispose what is temporal. Beginning from principles that are more known to us, we proceed resolutely toward what is more known in itself. But wisdom, judging and ordering all things, possessing what is more knowable in itself, judges and orders compositively.

² *Ia IIae*, q.57, a.2, c. "...Certum iudicium de re aliqua maxime datur ex sua causa. Et ideo secundum ordinem causarum oportet esse ordinem iudiciorum: sicut enim causa prima est causa secundae, ita per causam primam iudicatur de causa secunda. De causa autem prima non potest iudicari per aliam causam. Et ideo iudicium quod fit per causam primam est primum et perfectissimum. In his autem in quibus aliquid est perfectissimum, nomen commune generis appropriatur his quae deficiunt a perfectissimo, ipsi autem perfectissimo adaptatur aliud speciale nomen: ut patet in logicis... Quia igitur nomen scientiae importat quandam certitudinem iudicii, ut dictum est (a.1, ad 1); si quidem certitudo iudicii fit per altissimam causam, habet speciale nomen, quod est sapientia: dicitur enim sapiens in unoquoque genere qui novit altissimam causam illius generis, per quam potest de omnibus iudicare. Simpliciter autem sapiens dicitur qui novit altissimam causam simpliciter, scilicet Deum. Et ideo cognitio divinarum rerum vocatur sapientia. Cognitio vero rerum humanarum vocatur scientia, quasi communi nomine importante certitudinem iudicii appropriato ad iudicium quod fit per causas secundas."—*IIa IIae*, q.9, a.2, c.

³ "In omni autem scientia est assimilatio scientis ad scitum; unde oportet quod vel scientia sit causa sciti, vel scitum sit causa scientiae, vel utrumque ab una causa causetur. Non potest autem dici quod res scitae a Deo sint causa scientiae in eo, cum res sint temporales, et scientia Dei sit aeterna, temporale autem non potest esse causa aeterni. Similiter non potest dici quod utrumque ab una causa causetur;

knows things outside of Himself after the manner of the artist's knowledge of his artwork. Now, an artist may have a twofold knowledge of his work: he may excogitate the form of it and actually intend to impose the art-form upon matter; or he may simply contemplate the art-form without any actual intention of applying it exteriorly. To the first of these types of human practical knowledge corresponds the knowledge whereby God knows things that are, were, or will be posited in existence; thus, it corresponds to God's science of approbation and vision.¹ The knowledge whereby God knows what is not now, nor ever was nor shall be answers to the second type of human practical knowledge. This, St. Thomas tell us, is included in God's science of simple intelligence.² Hence, concerning created things God has what we called in the first part of this essay a completely practical knowledge, while of things which He has no intention of creating He has a formally practical knowledge. We have already seen that a completely practical knowledge involves the efficacious intervention of the will. Further, God's formally practical knowledge of what He does not intend to create is best explained by referring it to the divine will.

Deus potest cognitionem habere aliquorum non entium; et horum quidem quorundam habet quasi practicam cognitionem, scilicet quae sunt, vel fuerunt, vel erunt, quae ex ejus scientia secundum ejus dispositionem prodeunt; quorundam vero quae nec fuerunt, nec sunt, nec erunt, quae scilicet nunquam disposuit, habet quidem speculativam cognitionem; et quamvis possit dici quod intueatur ea in sua potentia, quia nihil est quod ipse non possit, *tamen accommodatius dicitur quod intuetur ea in sua bonitate, quae est finis omnium quae ab eo fiunt; secundum, scilicet, quod intuetur multos alios modos esse communicationis propriae bonitatis, quam sit communicata rebus existentibus, praeteritis, praesentibus, vel futuris* quia omnes res creatae ejus bonitatem aequare non possunt, quantumcumque de ea participare videantur.³

The knowledge, then, that God has of things — whether these be actual or potential — is, indeed, the cause of them, but not without the intervention, either actually or potentially, of the divine will. For, as St. Thomas reminds us, knowledge as such is not an active cause.⁴

Since, therefore, God knows things intellectually or compositively (always removing the imperfections implicit in the term as it describes a human mode of knowing), and since God's knowledge of things has some

quia in Deo nihil potest esse causatum, cum ipse sit quidquid habet. Unde relinquitur quod scientia ejus sit causa rerum. Sed e converso scientia nostra causata est a rebus, inquantum, scilicet, eam a rebus accipimus. Sed scientia angelorum non est causata a rebus, neque causa rerum; sed utrumque est ab una causa; sicut enim Deus formas universales influit rebus, ut subsistant, ita similitudines earum influit mentibus angelorum ad cognoscendum res."—*De Ver.*, q.2, a.14, c.

¹ *Ia*, q.14, aa.8, 9.

² *Ibid.*, a.9, c.

³ *De Ver.*, q.2, a.8, c.

⁴ "Sciendum tamen, quod scientia inquantum scientia, non dicit causam activam sicut nec forma inquantum est forma; actio enim est ut in exeundo aliquid ab agente; sed forma inquantum hujusmodi habet esse in perficiendo illud in quo est, et quiescendo in ipso: et ideo forma non est principium agendi nisi mediante virtute; et in quibusdam quidem ipsa forma est virtus, sed non secundum rationem formae; in quibusdam autem virtus est aliud a forma substantiali rei, sicut videmus in omnibus corporalibus, a quibus non progrediuntur actiones nisi mediantibus aliquibus suis qualitatibus. Similiter etiam scientia significatur per hoc quod est aliquid in sciente, non ex hoc quod aliquid sit a sciente; et ideo a scientia nunquam procedit effectus nisi mediante voluntate, quae de sui ratione importat influxum quemdam in volita... etc."—*De Ver.*, q.2, a.14, c.

determinate relation to His will, we must conclude that the compositive mode taken strictly requires either the actual or potential intervention of the will.

With respect to the angelic intellect, we have seen that it participates in the *rationes factivae* through the species which God infuses into it. The angel is not required to proceed resolutely, from many to one, from what is posterior to what is prior. It is only reason that must progress in this way. In so far as angelic intelligences know in a way proper to the intellect, as distinguished from reason, we may say that the angel knows compositively. The angel begins to know at a point where our knowledge arrives only after a long resolute process.

However, angelic knowledge is not, as we have seen, the cause of things. Nevertheless, the participations of the *rationes factivae* which are the principles of angelic knowledge represent the universe that God willed to create. Hence, angels enjoy a speculative knowledge of things that resembles in mode a practical knowledge.

... Est etiam quoddam universale ad rem, quod est prius re ipsa, sicut forma domus in mente aedificatoris et per hunc modum sunt universales formae rerum in mente angelica existentes, non ita quod sint operativae, sed quia sunt operativis similes, sicut aliquis speculative scientiam operativam habet.¹

In contrast to the divine and angelic modes of knowing, man attains first causes only on condition that he painfully traverse the lower sciences, resolving particular causes into more universal causes.² Only at the end of this resolute processus do we begin to know in a manner similar to that of separated substances.

We began this investigation into the mode of proceeding in demonstrative discourse by quoting a passage from the *Summa Contra Gentiles* which ascribed intelligible species to human knowledge by way of resolution; at the same time it attributed intelligible species to angelic intelligences "quasi modo compositivo." We now see what this means: what angels possess by infusion we must acquire by a kind of resolute movement that resembles the growth of generable things.

But what is of special importance for us is that we understand that the resolute mode is defined by its term. For, in whatever connection we have viewed resolution, we have seen that its term is something more intelligible than that from which the process began. More determinately still, we have seen that the resolute mode is ordered to causes. We saw that formal abstraction issues in causes, that demonstration manifest conclusions in causes. We saw that total abstraction terminates in something more intelligible *for us* which is a cause of *our* science. Further, when we considered the order of the determination of the matters within a science, we saw that, from the point of view of what is more knowable *in se*, this order is resolute in mode and terminates at proper — as distinguished from common — causes of things. Finally, we have just seen that the sciences inferior to wisdom resolve into first causes.

¹ In *II Sent.*, dist. 3, q. 3, a. 2, ad 1.

² In *Metaph.*, Prooemium; cf. *De Ver.*, q. 1, a. 1, ad 5.

Resolution in each of these instances fulfills the common notion discussed in the Introduction to this essay: since each of them move in the direction of causes in some sense, they move in the direction of what is simple. But since in the discourse of demonstration alone we possess real causes actually and with certitude, the processus of demonstration will be resolute in the strict sense.

With respect to the compositive mode, we saw earlier that it is a process starting from something simple. We have seen meanwhile that its point of departure cannot be knowledge alone, since composition in the strict sense requires some relation to the will. As a consequence, the compositive mode referred to in the analysis of our demonstrative discourse, like the compositive science of the angels, shares only the common and not the strict notion of composition. For this latter we shall have to seek, as our brief considerations of divine knowledge indicated, in human practical rather than in speculative discourse.

3. *Practical Discourse*

We have now to face the major difficulty raised in the Introduction to this essay: since demonstrative or speculative discourse proceeds resolutely and practical discourse is said to proceed compositively, how can the resolute mode be attributed to the practical discourse of counsel.¹

In an attempt to answer this question we shall adopt the same method employed in the foregoing section. We shall undertake an analysis of practical discourse with a view to reconciling the two apparently conflicting propositions: the practical discourse of counsel proceeds resolutely; practical science proceeds compositively.²

* * *

When we were considering demonstrative discourse we saw that its principle was a quiddity, a real definition. In practical discourse, however, the end holds the place of a principle.³ Like a principle of demonstration, the end is accepted in practical discourse. What is thus true of all practical discourse is true also of counsel: we do not take counsel concerning ends.⁴ Here, as elsewhere in practical discourse, ends are assumed. Counsel is concerned with discovering those operations that must be done in view of the end assumed. Although counsel is undertaken with a view to operation, not all operations, however, will fall under the investigation of counsel, but only those that *we* can perform.⁵ Further, not even every operation that we can perform is subject to counsel. There are ends that can be achieved by means that are determined in advance. Such, for instance, are the operations at the disposal of an artist with respect to the work he

¹ Cf. *In III Ethic.*, lect.8; *Ia IIae*, q.14, a.5, c.

² *In I Ethic.*, lect.3, n.35.

³ *Ibid.*, lect.8.

⁴ *Ibid.*, lect.7; *Ia IIae*, q.14, a.2, c.

⁵ *In III Ethic.*, lect.7, n.465; *Ia IIae*, q.14, a.3, c.

sets for himself. Counsel has a function to perform only "de his . . . in quibus oportet nos praedeterminari qualiter fiant quia non sunt in se certa et determinata."¹ In a word, counsel has a work to perform where there is a doubt concerning what to do or how to do it. Consequently, counsel implies that there are several ways of operating; for, if there were only one way, that would constitute a *via determinata*, beyond the realm of practical doubt in which alone counsel operates. Of course, counsel may be taken as to the manner in which that determined means may be used.²

It will be well to keep in mind these general conditions of counsel as we approach the problem of the mode in which counsel proceeds.

In his commentary on the *Ethics* St. Thomas explains the discourse proper to counsel in the following terms:

Ostendit de quibus et quomodo sit inquisitio consilii. Circa quod tria ponit. Quorum primum est quod supposito aliquo fine, prima intentio consiliantium est *qualiter, idest quo motu vel actione possit perveniri ad illum finem*; et per quae instrumenta oportet moveri vel agere ad finem, puta per equum vel navem. Secunda autem intentio est quando ad finem aliquem per plura potest veniri, sive instrumenta, sive actiones, *per quid eorum facilius et melius perveniat. Et hoc pertinet ad iudicium in quo quandoque aliqui deficiunt bene se habentes in inventione viarum ad finem*. Tertia autem intentio est, si contingat quod per unum solum instrumentum vel motum vel per unum optime perveniat ad finem, ut procuretur qualiter per hoc ad finem perveniat. Ad quod requiritur constantia et sollicitudo. Et si id per quod est deveniendum ad finem non habeatur in promptu, oportet inquirere ulterius *propter quid haberi possit*. Et similiter de illo, *quousque perveniat ad causam quae occurrit primo in operando, quae est ultima in inventione consilii*.³

St. Thomas then goes on to explain, as we have seen in the Introduction to this study, that this processus of counsel proceeds "per modum resolutionis cujusdam."⁴

It is precisely here that the difficulty arises. Counsel has for principle an end from which it proceeds toward the means. Now we have seen that *in practicis* the end holds the place of the cause or the quiddity *in demonstrativis*. Therefore, the end would seem to be a cause and the discovered means would seem to be effects. However, if counsel proceeds resolutely, the end cannot have the nature of a cause, nor can the means be effects, since the common notion of resolution requires that the processus be from what is composite to what is simple.⁵

In order to solve this difficulty we shall be obliged to recall a distinction that divides the whole of the practical order — the distinction between the order of intention and the order of execution.⁶ The order of intention

¹ In *III Ethic.*, lect.7, n.467; cf. also *Ia IIae*, q.14, a.4, c.; In *III Sent.*, dist.36, q.2, a.4, qua.1.

² *Ia IIae*, q.14, a.3, ad 3.

³ In *III Ethic.*, lect.8, n.475.

⁴ *Ibid.*

⁵ CAJETAN raises the difficulty in his commentary on article five of the Fourteenth Question in the *Prima Secundae*. His solution can be found there. For JOHN OF ST. THOMAS's treatment — which, in substance, we shall follow here — cf. his *Curs. theol.* (ed. VIVÈS), T.V, p.579, nn.13,14.

⁶ *Ia IIae*, q.1, a.4; q.8, a.3, ad 3; In *VI Ethic.*, lect.8, n.1231. CAJETAN, In *Iam IIae*, q.16, a.4, n.2. JOHN OF ST. THOMAS, *op. cit.* (ed. SOLESMES), pp.165-166; pp.143ss; pp.341ss.

is the order of the final cause,¹ of the efficacy of the end as such.² The order of execution is the order of the efficient cause both in relation to discovering the means and of ultimately applying them to operation.

In the order of intention the end is a cause and is efficacious with respect to the simple love of the end, complacency in it and, finally, intention of the end in view of means that may not yet be known at all.³ Because, in this order, the end is a cause, simple volition, imperfect fruition and intention are effects and find their explanation in the goodness of the end which exercises its causality by diffusing itself, by "pouring itself out," upon the will. Everything that is subsequently intended is formally an effect of this radical intention the cause of which is the end.

The order of execution is the order of the causality of the agent with respect to the means. It begins after the efficacious intention — the intention that looks to the end as it must be achieved by the means.⁴ But since this radical intention is made without a determinate knowledge of the means, the will cannot love the means thus indeterminately known. As a consequence, the will can be related to the means in two ways. First, in order to love them and possess them effectively which is achieved in election; second, in order to possess them really, *in effectu*, which is begun in the *imperium*. But just as simple volition in the order of intention requires a motive, so election in the order of execution. And, since election is an act by which the will chooses to pursue one means determinately in preference to others, the radical intention that concludes the order of intention is insufficient; for, this latter intention is consistent with only a very vague knowledge of the means. Therefore, in order that the will be disposed determinately to one means rather than another, election must be illuminated by counsel and judgment. Election, however, bears upon the means in view of the ends⁵; it looks to the means as causes of the end which, from the point of view of election, is an effect of the means.

Counsel, therefore, is in the order of execution where the means are considered as causes, and not in the order of intention where the end is the cause. And since counsel is an instrument for illuminating the choice of means by the will in election; and since election is concerned with means as causes and with the end as an effect, the discourse of counsel has as principle the end considered as an effect, while its conclusion is the means considered as causes of the end.

Further, it is clear that counsel is in that part of the order of execution that serves to discover means in order that they be loved and elected. It is

¹ "... *Influere causae finalis est appeti et desiderari*. Et ideo, sicut secundarium agens non agit nisi per virtutem primi agentis existentem in eo; ita secundarius finis non appetitur nisi per virtutem finis principalis in eo existentem; prout scilicet est ordinatum in illud, vel habet similitudinem ejus."—*De Ver.*, q.22, a.2, c. Cf. also *Ia*, q.44, a.1, c.

² Cf. CAJETAN, *In Iam Partem*, q.12, a.1, ad 4.

³ *Ia IIae*, q.12, a.4, ad 3.

⁴ *Ibid.*

⁵ *Ibid.*

not in the part of the order of execution which, beginning with *imperium*, posits the means exteriorly in order to possess the end.¹

Consequently, if we confine ourselves to the order of intention only, the processus from the intention of the end to the intention of the means is compositive. In this order the end has the ratio of cause and the means have the ratio of effect.² But in the order of execution the reverse is the case. Here the end has the ratio of effect: — not, certainly, an effect here and now existing, but a *possible* effect preserving an intentional existence which the will would posit *in re*. Thus the end in the order of execution is the complex effect existing priorly in our knowledge³; but with respect to its physical existence, it is effected in being actually only after a long process wherein its causes must be discovered and put into operation. The means, however, in this order are defined as causes, for they are prior not only in knowledge but *in esse* as well.⁴ Hence, in this order to proceed from an end to the means is to proceed from what is prior in our knowledge to what is prior *in esse*, from an effect to causes. It is, therefore, a resolute process from the complex to the simple.

Principium autem in inquisitione consilii est finis, qui quidem est prior in intentione, posterior tamen in esse. Et secundum hoc, oportet quod inquisitio consilii sit resolutiva, incipiendo scilicet ab eo quod in futuro intenditur, quousque perveniatur ad id quod statim agendum est.⁵

Counsel, then, proceeds from something complex and continues until it arrives at something simple: its discourse begins with the end considered as an effect and concludes with the means considered as causes. From this point of view counsel moves in the direction of a kind of *propter quid*.⁶ In this sense, too, counsel resembles the operations of the artist when he

¹ Because, in the discourse of counsel, the conclusion states a cause and the end an effect, Aristotle can compare a syllogism that concludes a true proposition from false premises with an act that is bad, not with respect to the end, but with respect to the means. St. Thomas explains this comparison by having recourse to the distinct orders of intention and of execution: "Licet enim in intentione finis sit sicut principium et medius terminus, tamen in via executionis quam inquit consiliator, finis se habet sicut conclusio, et id quod est ad finem sicut medius terminus. Manifestum est autem quod non dicitur recte syllogizare qui veram conclusionem per falsum medium concluderet: unde consequens est quod non sit vere eubulia, secundum quam aliquis adipiscitur finem quem oportet, non autem per viam quam oportet."—*In VI Ethic.*, lect.8, n.1231.

² It is because he is speaking of this order that St. Thomas in *De Veritate* speaks of the resolution of the intention of the means to the intention of the end. Much in the same way we speak of the resolution of a conclusion into its causes in demonstrative discourse. "Finis... in operabilibus rationem principii tenet. In speculativis autem scientiis non perficitur iudicium rationis nisi quando resolvuntur rationes in prima principia; unde nec in operabilibus perficitur nisi quando fit reductio usque ad ultimum finem... etc."—*De Ver.*, q.15, a.3, c. However, "...in executione operis, ea quae sunt ad finem se habent ut media, et finis ut terminus. Unde sicut motus naturalis interdum sistit in medio, et non pertingit ad terminum; ita quandoque operatur aliquis id quod est ad finem, et tamen non consequitur finem. Sed in volendo est e converso: nam voluntas per finem devenit ad volendum ea quae sunt ad finem; sicut et intellectus devenit in conclusiones per principia, quae media dicuntur. Unde intellectus aliquando intelligit medium, et ex eo non procedit ad conclusionem. Et similiter voluntas aliquando vult finem, et tamen non procedit ad volendum id quod est ad finem."—*Ia IIae*, q.8, a.3, ad 3.

³ *Ibid.*, q.14, a.5, c.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ Cf. *In III Ethic.*, lect.8, nn.418, 475.

excogitates the idea of his art-work, since here the artist is in search of a kind of quiddity. For, as St. Thomas points out,¹ we may know not only the quiddities of sensible things and of objects whose effects alone are immediately known to us, but also the quiddities of artificial things that are non-sensible, but only possible: "...Cognoscit essentias artificialium nunquam visorum, investigando ex proportionibus finis ea quae exiguntur ad illud artificiatum." Similarly, counsel is an effort to know the operations which are the media or causes of the existence of a known end: it is an effort to define the end by the operations that will bring the end into existence, an "inventio eorum quae sunt agenda."²

In order the better to understand how counsel is ordered to knowing causes we have only to advert to the virtue whereby the operation of counsel is perfected — the virtue of *eubulia*. In his commentary on the *Ethics*, St. Thomas defines *eubulia* as "rectitudo consilii ad finem bonum simpliciter per vias congruas et tempore convenienti."³ Elsewhere⁴ we find the following definition: "rectitudo consilii, qua bonum inquiritur convenientibus mediis secundum debitum tempus et alias circumstantias." *Eubulia* is a virtue which is ordered to the discovery of *media* that are fitting to a given end. It achieves its discovery through reasoning and inquisition.⁵ From this point of view, we may compare the work of counsel in the practical order with the search for middle terms in the speculative order — a work which Aristotle attributes to the virtue of *solertia*.⁶

Counsel is terminated when we arrive at some cause that we can immediately put into execution. When this happens we say that the findings of counsel are judged and the discourse or inquisition of counsel is terminated.⁷ For, the judgment of counsel and the termination of counsel are materially the same thing. The reason for this lies in the fact that, since counsel is ordered to operation and operation is in the singular, the proper principle of some singular operation is not only the end, but the end seen in the concrete singular act that can be performed immediately. This is why Aristotle assimilates the resolution characteristic of speculative science to the resolution of counsel: both of them resolve to indemonstrables.

Causa, quae prima est in operatione, est ultima in inventione, quia ille qui consiliatur videtur inquirere, sicut dictum est, per modum resolutionis cuiusdam. Quemadmodum diagramma, quae est descriptio geometrica, in qua qui vult probare aliquam conclusionem oportet quod resolvat conclusionem in principia quousque pervenit ad principia prima indemonstrabilia... Et quia consilians resolute inquit, necesse

¹ In *III Sent.*, dist. 23, q.1, a.2.

² *IIa IIae*, q.51, a.2, ad 2.

³ In *VI Ethic.*, lect.8, n.1234.

⁴ In *III Sent.*, dist.33, q.3, a.1, sol.3.

⁵ *Ibid.*, sol.4.

⁶ Cf. In *I Post. Anal.*, lect.44, n.12.

⁷ "Et dicit, quod ideo determinatio consilii praecedat electionem, quia oportet, quod post inquisitionem consilii sequatur iudicium de inventis per consilium. Et tunc primo eligitur id quod prius est iudicatum. Et quod iudicium rationis consequatur inquisitionem consilii, manifestat per hoc, quod unusquisque qui inquit consiliando qualiter debeat operari, desistit a consiliando, quando inquisitionem suam resolvendo perducit ad id quod ipse potest operari. Et si plura potest operari, quando reduxit in antecedens, id est in id quod ei primo operandum occurrit. Et hoc est quod eligitur, scilicet quod primo operandum occurrit."—In *III Ethic.*, lect.9, n.484.

est quod ejus inquisitio perducatur usque ad id quod est principium in operatione, quia id quod est ultimum in resolutione, est primum in generatione sive in operatione.¹

Hence, speculative resolution is made to primary, self-evident principles, but the resolution of counsel is made to principles of operation which are singular operables "quod oportet accipere ut principium in agendis: cujus quidem extremi non est scientia, quia non probatur ratione, sed ejus est sensus... non quidem illo quo sentimus species propriorum sensibilium... sed sensus interiori, quo percipimus imaginabilia."²

There is, therefore, a twofold principle of the practical discourse of counsel³; there is the end which is a universal and holds the place of the major proposition; there is also the concrete singular which holds the place of the minor proposition.⁴ As in demonstrative discourse, reason, having resolved a conclusion into its causes, has evidence in the light of which it judges the truth of the conclusion; so in practical discourse, counsel, resolving to what can be done immediately in view of an end, the interior sense (the *vis cogitativa*),⁵ sees in the concrete singular a certain fittingness with respect to the end. In this vision, the mind has evidence and therefore a basis for judgment. And because the judgment of counsel depends upon the *vis cogitativa*, he who has the *habitus* of judging well practically is said to be a man of 'good sense'.⁶ This is why, also, in *agibilia* the opinion of experienced persons must be respected: they have "*experientiam visuum, id est, rectum judicium de operabilibus, vident principia operabilium*."⁷ Because, too, singulars are principles in the practical order, someone lacking the science about the universal but experienced in the singulars may be able to operate to better advantage than one who knows the universal only.⁸ For it is only through the singular that the universal end can move the will to operate.⁹

* * *

Before examining the resolute mode ascribed to counsel we would do well at this point to take a closer look at the discourse of formally practical science. It will be recalled that formally practical science has an operable for object and that it proceeds *per modum operandi*, that is to say, compositively. In formally practical science, however, the knower has no intention of operating. The object of such a science is indeed an end, although not actually exercising its function of end, because not actually willed by the knower. However, its object is distinguished from

¹ *Ibid.*, n.476.

² *In VI Ethic.*, lect.7, n.1214.

³ *Ia IIae*, q.14, a.6, c.

⁴ *In VI Ethic.*, lect.9, n.1247.

⁵ *Ibid.*, n.1255.

⁶ *Ibid.*, lect.9; *Ia IIae*, q.51, a.3, c.

⁷ *In VI Ethic.*, lect.9, n.1254.

⁸ *Ibid.*, lect.6, n.1194.

⁹ *In III de Anima*, lect.16.

essentially speculative science in that it *can be* willed: it is a possible. Such a formally practical science is moral philosophy.¹

Now, every science, practical as well as speculative seeks causes.² But because of the differences of their objects — the one operable, the other inoperable by us — there must be differences in the kinds of causes sought by practical and speculative science.

In speculativis scientiis in quibus non quaeritur nisi cognitio veritatis, sufficit cognoscere quae sit causa talis effectus. Sed in scientiis operativis, quarum finis est operatio, oportet cognoscere quibus motibus, seu operationibus, talis effectus a tali causa sequatur.

Dicit ergo, quod praesens negotium, scilicet moralis philosophiae, non est propter contemplationem veritatis, sicut alia negotia scientiarum speculativarum, sed est propter operationem. Non enim in hac scientia scrutamur quid sit virtus ad hoc solum ut sciamus hujus rei veritatem; sed ad hoc, quod acquirentes virtutem, boni efficiamur. . . . Et quia ita est, concludit, quod necesse est perscrutari circa operationes nostras, quales sint fiendae. Quia, sicut supra dictum est, operationes habent virtutem et dominium super hoc, quod in nobis generentur habitus boni vel mali.³

Moral philosophy will, then, be assimilated in mode of proceeding to the mode of counsel in so far as the discourse of moral science, beginning from a possible object, seeks the operations and movements that can bring that object into existence. If moral science sometimes seems to investigate causes in a speculative manner, by defining and demonstrating, it does this only to the extent that knowledge of this kind is necessary in order to know practically⁴; for the practical is always founded upon some speculative knowledge. But within a practical science, speculative considerations are strictly limited to the ends of practical knowledge.

The discourse, then, of moral science proceeds toward causes of operation, toward principles whereby man may direct his actions. For practical knowledge is a cause and rule of those things that we are able to do, and moral science, as a type of practical knowledge, has for end not knowledge itself, but action or doing.⁵ And because moral science seeks to treat of the rules and principles of action doctrinally, it must necessarily remain in the universal. Further, because it is ordered to directing our operations which are in the singular and thus infinitely variable, moral science does not have the same certitude as speculative science.⁶ Singular actions in their wide variability, however, are beyond doctrine; they can be regulated only by the prudence of each person. And although it is uncertain in its very universality, and incapable of regulating actions in their infinite variety, yet moral science strives to come as close as possible to such regulation "ut aliquod auxilium super hoc homini conferamus, per quod scilicet dirigatur in suis operibus."⁷

¹ "Est autem considerandum quod sicut supra dictum est prudentia non est in ratione solum, sed habet aliquid in appetitu. Omnia (id est politica, oeconomica et monastica) ergo de quibus hic fit mentio in tantum sunt species prudentiae, inquantum non in ratione sola consistunt, sed habent aliquid in appetitu. Inquantum enim sunt in sola ratione, dicuntur quaedam scientiae practicae, scilicet ethica, oeconomica et politica."—In VI Ethic., lect.7, n.1200.

² In VI Metaph., lect.1, n.1145.

³ In II Ethic., lect.2, nn.255-256.

⁴ In I Ethic., lect.11, n.136.

⁵ In III Sent., dist.35, q.1, a.3, sol.2; ad 2.

⁶ In I Ethic., lect.3, nn.35ss.; In II, lect.2, n.258.

⁷ In II Ethic., lect.2, n.259.

Hence, the mode of proceeding in moral science is resolute in the same way that counsel is resolute, i.e., it proceeds from something that can be done and continues to move discursively in the direction of movements and operations that are required in order that the end exist. In other words, the discourse of moral science proceeds from a possible effect to the causes of that effect. Of course, moral science always maintains a degree of universality above that of counsel.

As counsel is terminated by judgment that sees in a singular action a certain fittingness with respect to the end, so the discourse of moral science is concluded when it arrives at an operative cause which man, taken *ut in pluribus*, is able to posit actually. This is why a wide experience of human affairs is indispensable to the moralist.¹ For unless he takes into account what happens for the most part in human actions he will never be able to conclude his discourse in a practical way.

In the Seventh Book of the *Metaphysics*, Aristotle explains the mode of proceeding in another formally practical science, medicine.² St. Thomas's commentary on this passage is a lucid and detailed account of the same resolute mode that we have recognized in counsel and in moral science. Aristotle, in explaining the way in which artificial things are generated, points out that the active principle of an artificial product is the factive species which is in the mind of the artist. By factive species is meant the quiddity of whatever thing art can produce. The species of art-works, in contrast to the species of natural things, are first in our minds and are principles and causes of the existence of the art-work. Here, 'health' is adopted as an example through which this general doctrine is explained.

Dicit ergo quod, cum sanitas quae est in anima, sit principium sanitatis quae fit per artem, ita fit sanitas in materia aliquo intelligente quod sanitas est 'hoc', scilicet vel regularitas vel adaequatio calidi, frigidi, humidi et sicci. Et ideo necesse est, si sanitas debet contingere, quod hoc existat, scilicet regularitas vel aequalitas humorum. Et si regularitas vel aequalitas debeat esse, oportet quod sit calor, per quem humores reducuntur ad aequalitatem; et ita semper procedendo a posteriori ad prius, intelligit illud quod est factivum caloris, et quod est factivum illius, donec reducatur ad aliquod ultimum, quod ipse statim posset facere, sicut hoc quod est dare talem potionem; et demum motus incipiens ab illo quod statim potest facere, nominatur factio ordinata ad sanandum.

Patet ergo, quod sicut in naturalibus ex homine generatur homo, ita in artificialibus accidit quodammodo ex sanitate fieri sanitatem, et ex domo domum; scilicet ex ea quae est sine materia in anima existens, illa quae habet materiam. Ars enim medicinalis, quae est principium sanationis, nihil est aliud quam species sanitatis, quae est in anima; et ars aedificativa est species domus in anima. Et ista species sive substantia sine materia, est quam dixit supra quod quid erat esse rei artificatae.³

St. Thomas then introduces a distinction with which we are already somewhat familiar: the distinction between the order of reasoning about operables and the order of operation.⁴ Here these diverse orders within the practical are founded upon diverse principles. The principle of the order of reasoning about an operable is the factive species of the operable itself. But that which can be done immediately is the principle of the order of operation.

¹ In *I Ethic.*, lect.3, nn.36ss.

² For the formally practical character of medicine, cf. *In de Trin.*, q.5, a.1, ad 1.

³ In *VII Metaph.*, lect.6, nn.1406-1407.

⁴ Cf. p.11 of the present study.

Ostendit quomodo diversimode accipitur principium in actionibus artis; et dicit quod in generationibus et motibus artificialibus *est aliqua actio quae vocatur intelligentia*, et aliqua quae vocatur factio. Ipsa enim excogitatio artificis vocatur intelligentia, quae incipit ab hoc principio, quae est species rei fiendae per artem. Et haec operatio prolongatur, ut supra dictum est, usque ad illud quod est ultimum in intentione, et primum in opere. Et ideo illa actio quae incipit ab ultimo, ad quod intelligentia terminatur, vocatur factio, quae est motus jam in exteriorem materiam.¹

The reader will recognize in the 'intelligentia' and 'factio' of the lines quoted above the two ways in which the agent cause may be related to the means in the order of execution. 'Intelligentia' or reasoning about an operable represents the relation of the efficient cause to the means in order to love and elect them; while 'factio' or the order of actual operation is equivalent to that relation of the agent to the means in the order of execution whereby he seeks to posit the means in actual existence.²

Finally, St. Thomas shows that the practical discourse of medicine proceeds *a posteriori* — from the species of 'health' in general to what must be done here and now. Each stage of the discourse is a species gradually approximating the operative species that will ultimately direct the first executive operation.

Et sicut diximus de actione artis respectu formae, quae est ultimus finis generationis artificialis, similiter est de omnibus aliis intermediis. Sicut ad hoc quod convalescat, oportet quod adaequantur humores. Hoc igitur ipsum quod est adaequare, est unum de intermediis, quod est propinquissimum sanitati. Et sicut medicus, ad hoc quod faceret sanitatem, incipiebat considerando quid est sanitas; ita, ad hoc quod faciat adaequationem, oportet quod sciat quid est adaequatio; videlicet quod adaequatio 'est hoc,' scilicet debita proportio humorum in respectu ad naturam humanam. 'Hoc autem erit si corpus fuerit calefactum'; quando scilicet quis infirmatur propter defectum caloris. Et iterum oportet quod sciat quod quid est hoc, scilicet calefieri: sicut si dicatur quod calefieri est immutari a medicina calida. Et, 'hoc,' scilicet dare medicinam calidam, existit statim in potestate medici, et est 'jam in ipso,' idest in potestate ejus, ut talem medicinam det.

Sic igitur patet, quod principium faciens sanitatem, unde incipit motus ad sanandum, est species, quae est in anima, vel ipsius sanitatis, vel aliorum intermediarum, per quae acquiritur sanitas. Et hoc dico, si sanatio fiat ab arte. Si autem fiat alio modo, non erit principium sanitatis species quae est in anima; hoc enim est proprium in operationibus artis.³

* * *

Must we now conclude that not only counsel but also formally practical science proceeds resolutely in the same way that demonstrative science proceeds resolutely? If so, what becomes of the distinction between speculative and practical science in so far as this distinction is based upon diverse modes of proceeding? And, since these diverse modes were shown to derive from diverse formal principles, what becomes of any distinction at all between the speculative and practical orders? If formally practical science and counsel proceed resolutely in the same way that demonstrative science proceeds, what does St. Thomas mean when he says that the practical proceeds compositively?

¹ In VII Metaph., lect. 6, n. 1408.

² Because Aristotle and St. Thomas are here speaking of art whose operation works a transformation in matter, the order of operation is called a *factio*. However, in the moral sciences where operations do not pass into exterior matter but remain within the agent, the order of operation is an *actio*. — Cf. In I Politicorum, Prologue; In XI Metaph.

³ In VII Metaph., lect. 6, nn. 1409-1410.

The answers to these questions become quite clear once we see that the resolution found in counsel and formally practical science is not to be identified with the resolution characteristic of the demonstrative syllogism. Demonstration *propter quid*, as we have seen, achieves its end in the formal conclusion — the conclusion seen as inhering necessarily in its causes. In demonstration of this kind we have perfect judgment in which the speculative intellect attains its end in the possession of absolute truth. The speculative intellect which, at the outset of its investigation, was in wonderment about the cause of a given effect, rests, as the result of demonstration, in a judgment whose subject and predicate are united by a cause that the speculative intellect knows. But this perfect speculative judgment cannot, as we have seen, be had unless the mind can resolve the conclusion into its principles or causes.¹ It is this resolution, as we saw in the foregoing section of this essay, that is characteristic of demonstrative science.

However, in order that there be a resolution of this kind, it is necessary that this resolution be preceded by a discourse the principles of which are true, primary, immediate, prior, more known in themselves and causes of the conclusion.² If the premises of a discourse fulfill these conditions, then its conclusion will follow necessarily; the conclusion will resolve into the premises and will be known with scientific certitude. Therefore, in order to have the resolute mode in the perfect sense that is peculiar to speculative science, there must be the preceding compositive discourse found in demonstration *propter quid*.³ In other words, in order that there be the resolution that is characteristic of speculative or demonstrative discourse, the principles of that discourse must proceed with a priori or absolute necessity. That is to say, the principles must state a material, formal or efficient cause.⁴ In demonstration, conclusions (consequents) are necessary because the principles (antecedents) are prior and necessary and state the causes the effects of which are to be found in the conclusion.⁵

These conditions are not fulfilled by the practical discourse of counsel or of formally practical science. We have seen that the principle of practical discourse is the end taken as an effect: for the end is the rule and the measure of those things which are ordered to the end. However, the end as effect,

¹ "Est autem considerandum quod in omni iudicio ultima sententia pertinet ad supremum iudicium; sicut videmus in speculativis quod ultima sententia de aliqua propositione datur per resolutionem ad prima principia. Quandiu enim remanet aliquod principium altius, adhuc per ipsum potest examinari id de quo quaeritur; unde adhuc est suspensum iudicium..."—*Ia IIae*, q.74, a.7. c.

² *In I Post. Anal.*, lect.4; lect.6-18.

³ It must not be forgotten that the composition found in demonstrative discourse is compositive in the common or general sense, not in the strict sense.

⁴ *In II Physic.*, lect.15, n.2.

⁵ Hence it is that in demonstrative discourse the conclusion is necessary in such a way that if it is false the principles are also false. The conclusion, predicating a proper passion of a subject, must be true because the essence or quiddity of the latter demands that proper passion (*Ia IIae*, q.14, a.6, c.). This is why we can say that we have to do with the resolute or analytical mode in the strict sense whenever there is *per se* predication involved (*In I Post. Anal.*, lect.35, n.2). The case is not the same for practical discourse. For the means are not always such that without them the end would not be had (*Ia IIae*, q.14, a.6, ad 1). And even if the means exist, it does not follow that the end will be.

principle of practical discourse, in opposition to the principles of demonstrative discourse, is something that is *going to be*, or *may be*. It is not something that *is* — except intentionally for the one who discourses about it practically. From the point of view of what is more knowable *in se* the end is a consequent, and only from the point of view of what is more knowable *quoad nos* is the end an antecedent. Thus the end is a principle of ratiocination only.¹ Because it is posterior and more known *quoad nos* only, the end as principle of practical discourse gives rise to a conclusion that is only a posteriori or hypothetically necessary. The means stated in the conclusion will be necessary *if* the end is to be attained. "...Sententia sive iudicium rationis de rebus agendis est circa contingentia, quae a nobis fieri possunt in quibus conclusiones non ex necessitate sequuntur ex principiis necessariis absoluta necessitate, sed necessariis solum ex conditione, ut: Si currit, movetur."²

The conclusion of a practical discourse, stating the means that are fitting to a given end, does not resolve back into the end which is the principle of the discourse. For, as we have seen, the end is a consequent, while the means are the antecedents. If the consequent is to be, it is required that the antecedents be; but if the antecedents are, it does not necessarily follow that the consequent will be.³ Hence the resolute mode that we found characteristic of perfect speculative discourse has no place in practical discourse. Practical discourse is a movement between two different kinds of principles — the end as effect, principle of ratiocination, and the conclusion, principle of action. If the conclusion of our practical discourse followed analytically from the end, it would mean that once the principles of action were posited, the realization of the end would be guaranteed in advance. Its achievement would be absolutely necessary. This, however, would be to take human actions out of the contingency that everywhere characterizes them. "...In executione operis, ea quae sunt ad finem se habent ut media, et finis ut terminus. Unde sicut motus naturalis interdum sistit in medio, et non pertingit ad terminum; ita quandoque operatur aliquis id quod est ad finem, et tamen non consequitur finem."⁴

Although practical discourse cannot be denominated resolute in the particular sense that characterizes demonstration *propter quid*, still it participates the common notion of resolution. In seeking the causes of action or of making, it seeks what is simple by relation to the complex *finis-effectus*. Thus, when counsel, moral science and medicine are said to proceed resolutely, resolution must be understood in its general sense, i.e., as proceeding from something composite, complex or whole to something

¹ In II Phys., lect.15, n.2.

² Ia IIae, q.13, a.6, ad 2. "...Non semper ex principiis ex necessitate procedit conclusio, sed tunc solum quando principia non possunt esse vera si conclusio non sit vera. Et similiter non oportet quod semper ex fine insit homini necessitas ad eligendum ea quae sunt ad finem: quia non omne quod est ad finem, tale est ut sine eo finis haberi non possit; aut, si tale sit, non semper sub tali ratione consideratur."—*Ibid.*, ad 1.

³ In I Phys., lect.15; De Part. Anim., I, chap.1.

⁴ Ia IIae, q.8, a.3, ad 3.

that is simple or a part. But resolution in the strict sense which it has in demonstration is opposed to the resolution of practical discourse wherein we reason about operables as such.¹

Even though formally practical science and the whole order of reasoning about operables proceeds resolutely in the common or loose sense, yet, it remains true that the whole practical order is compositive in mode. This position represents neither a real conflict nor a paradox. The compositive character of completely practical knowledge, of the order of actual operation, is quite evident.

Practical discourse is an operation of the intellect working in the service of the will; here the intellect operates for an end that is not its own, but, rather, for the end of the will which is the good as such. Practical discourse takes as its principle and point of departure an operable which is properly the end of the will.²

But the good, end of the will, is not, like the truth, found in the intellect. The good is in things. For this reason the will does not rest in the causes or principles of action or of doing discovered by practical discourse. To possess the *rationes operis* or principles of action, is, with respect to the end of the will, to be in potency to the attainment of the end of the will. "In practicis non est ultimum in cognitione, sed in operatione, quae est finis."³ It is for this reason that we can speak of a twofold conclusion in practical inquisition: one, a judgment remaining in reason and simply terminating counsel; the other residing in the will is the conclusion of election. The latter, St. Thomas tell us, is a 'conclusion' by similitude only, "quia sicut in speculativis ultimo stat in conclusione, ita in operativis

¹ There is, however, a resolution in the speculative order that is quite like the resolution attributed to practical discourse. We refer, of course, not to the resolution of demonstration, but to the resolution found in that discourse we must rely upon so frequently in order to discover quiddities or definitions. It is in view of the resolute process that is found in practical discourse and in the speculative discourse discovering causes that the scholastic adage *quod est ultimum in resolutione, est primum in compositione* applies to both the speculative and practical orders (cf. *In V Metaph.*, lect.4, n.799).

Again, the resolution found in practical discourse may be assimilated to the one found in probable arguments. The principles of probable discourse are always better known *quoad nos*; but *in se* they are less known and therefore complex. St. Thomas himself seems to make this comparison in a passage in his commentary on the *De Trinitate* of Boethius. In the body of the article he describes the rational process of probable argument in the following terms: "Alio modo dicitur processus rationalis ex termino, in quo sistitur procedendo. Ultimus enim terminus, ad quem rationis inquisitio perducere debet, est intellectus principiorum, in quae resolvendo iudicamus; quod quidem quando fit, non dicitur processus vel probatio rationalis, sed demonstratio. Quandoque autem inquisitio rationis non potest usque ad ultimum terminum perducere, sed sistitur in ipsa inquisitione, quando scilicet inquirenti adhuc manet via ad utrumlibet; et hoc contingit, quando per probabiles rationes proceditur, quae natae sunt facere opinionem vel fidem, non scientiam, et sic rationalis processus dividitur contra demonstrativum. Et hoc modo rationabiliter procedi potest in qualibet scientia, ut ex probabilibus paretur via ad necessarias probationes..."—*In de Trin.*, q.6, a.1, c. In response to the fourth objection in this article St. Thomas attributes this rational process to the practical discourse of moral science.

² The intellect as such would not be concerned with objects operable by us were it not for the necessity imposed upon us to act and to make. The causes at which the resolution of practical discourse arrives are so immersed in the contingent they have no interest for the speculative intellect. Thus it can only be in view of operation that the intellect discourses practically.

³ *I Ia IIae*, q.52, a.4, ad 3.

ultimo statur in operatione."¹ Further, because the will is not perfected except by the real possession of the operable object, the conclusion of practical discourse, the forms of the practical intellect, must be commanded to operation by reason. This is the act of *imperium* in which lies the perfection of prudence: "actus [ejus] consistit in applicatione consiliatorum et judicatorum ad operandum."²

It is in this precept of the practical reason that the compositive character of the practical order is best seen; for here we find the real application of form to matter. Whatever precedes *imperium* — the formally practical discourse of moral science and counsel — is ordered to the practical command wherein reason prescribes that such and such forms, such and such principles of action be put in motion. In a word, the operative species are actually put to work.

Ad rationem enim pertinet praecipere quod faciendum est, quia aliae vires obediunt aqualiter rationi. Ratio autem non praecipit nisi prius in se perfecta sit quantum ad id quod est sui ipsius, sicut nec aliqua res movet ante sui perfectionem. Perfectio autem rationis practicae, sicut et speculativae, consistit in duobus scilicet in inveniando et judicando de inventis...

Sed quia in operabilibus cognitio ordinatur ad opus, ideo et consilium et iudicium de consiliatis ad praeceptum de opere reducitur sicut ad finem.³

Thus it is clear that the compositive mode is found perfectly in that part of the practical that involves real execution of the means. It is of crucial importance, however, to recall that the command to real execution of the means is conditioned by the actual intervention of the will intending to act.

We saw, however, in the first part of this essay,⁴ that St. Thomas attributes the compositive mode not only to completely practical knowledge, but also to formally or virtually practical science, to the order of reasoning about operables which we have found to proceed resolutely in the general acceptance of that term.

¹ *De Ver.*, q.22, a.15, ad 2.

² *IIa IIae*, q.47, a.8, c.

³ *In III Sent.*, dist.33, q.3, a.1, sol.iii, c. St. Thomas tells us in the Prologue to the *Politics* that nature, among other things, offers an "exemplar operandi" to practical reason. But how does nature operate? "Procedit natura in sua operatione ex simplicibus ad composita; ita quod in eis quae per operationem naturae fiunt quod est maxime compositum est perfectum et totum et finis aliorum, sicut apparet in omnibus totis respectu suarum partium. Unde et ratio hominis operativa ex simplicibus ad composita procedit tamquam ex imperfectis ad perfecta..."—*In I Polit.*, Prologue.

"...Duplex est ordo naturae: unus secundum viam generationis et temporis: secundum quam viam ea quae sunt imperfecta et in potentia, sunt priora. Et hoc modo magis commune est prius secundum naturam; quod apparet manifeste in generatione hominis et animalis; nam 'prius generatur animal quam homo', ut dicitur in libro de *Gen. anim.* (II, iii, 736b2). Alius est ordo perfectionis, sive intentionis naturae; sicut actus simpliciter est prius secundum naturam quam potentia et perfectum prius quam imperfectum. Et per hunc modum minus commune est prius secundum naturam quam magis commune, ut homo quam animal; naturae enim intentio non sistit in generatione animalis, sed intendit generare hominem."—*Ia*, q.85, a.3, ad 1.

According to the order of generation, then, nature proceeds compositively, from what is simple and imperfect to what is whole and perfect. But according to the order of intention, as we have seen, nature proceeds resolutely in so far as, intending what is whole, perfect and less common, it devises ways and means to that end.

⁴ Cf. Part I, pp.13-20.

In reply, let us recall that the speculative and practical imply differences *intra genus intelligendi*: because they are distinguished by diverse immateriality or abstractibility; as a consequence, they differ by diverse formal objects. The formal object of the speculative order is the cause, or more precisely, the effect seen in the cause. The formal object of the practical, on the other hand, is the operation, the work or the construction of the object. We saw that it was these diverse formal objects that dictated the distinct modes of resolution and of composition. The whole of the speculative order proceeds in the direction of knowing causes actually, while the practical proceeds in the direction of actually producing the object and establishing it outside of its causes. As a consequence, the whole of the speculative proceeds toward what is simple, while the practical proceeds toward what is complex. Hence, St. Thomas attributes the resolute mode to all simply and essentially speculative science; whereas he attributes to all formally and completely practical knowledge the compositive mode.

Now, within the practical order we have distinguished the order of reasoning about an operable and the order of actually doing or making it. The former we saw to be resolute in the loose sense, while the latter is compositive in the strict sense. However, both orders are specified by the same formal object, the operable as such. The operable object, in the order of ratiocination, is not properly known until the actions and movements that go to realize it are known. For, the operable as such is defined by these actions and movements: "*de operabilibus perfecta scientia non habetur, nisi sciantur in quantum operabilia sunt.*"¹ We have seen that practical knowledge of this kind involves at least the potential intervention of the will: its object is an operable that *can be realized by us*.² In so far, then, as the formal object dictates the mode of proceeding, both the order of reasoning about operables and the order of actual execution are compositive in mode. Nevertheless, the order of reasoning about operables, the order of all formally practical science and counsel, achieves its composition through a kind of resolution in the loose sense.

¹ *Ia*, q.14, a.16, *ad in contra*.

² «... L'objet opérable, envisagé comme tel, n'est bien opérable que pour autant qu'il se rapporte à l'appétit: dans la connaissance pratique l'intelligence le saisit comme se rapportant à la fois à elle-même et à l'appétit. C'est un objet vu dans le bien comme bien, et plus précisément dans le bien communicable, dans le 'bonum ordinabile ad opus'. L'opérable n'est pas dit tel parce qu'il serait un objet qui se rapporte et à l'intelligence spéculative et à l'appétit. C'est en tant qu'opérable qu'il est dans l'intelligence. Il engage une connaissance qui n'est pas séparable de la bonté ni de la nature de l'appétit du connaissant. Dans l'objet-bien, le bien n'est pas simplement surajouté à un pur objet. Cette formalité *objet* de l'opérable est autre que celle du pur objet. Or cet objet ne peut être vu que dans une connaissance compositive. Un objet n'est connu pratiquement que dans la mesure où l'on sait la composition à faire pour qu'il soit. Connaître pratiquement une maison c'est savoir 'qualiter posset fieri'; c'est en avoir une connaissance régulatrice, c'est la connaître 'per modum operandi'. Lorsque nous acquérons un art pratique, l'objet que nous pouvons alors concevoir pratiquement n'est pas simplement l'objet que nous connaissions auparavant de manière purement spéculative, entré maintenant en composition avec la formalité qui provient de notre pouvoir sur lui, et désormais appelé pratique par dénomination purement extrinsèque. La connaissance pratique représente un objet en tant que le connaissant peut le *faire*: l'opérabilité est de l'essence de cet objet».—H. PICHETTE, *op. cit.*, pp.63-64.

Similarly, while the whole of the speculative order is specified by a simple object and is, therefore, resolute in mode, nevertheless there is a kind of compositive discourse involved in every *propter quid* demonstration as it proceeds from causes to effects. The compositive discourse of demonstration, however, does not prevent the resolute mode from being attributed to the whole of the speculative order. This is so because, in the first place, such a discourse can be compositive only in the loose or common sense, and, also, because the composition takes place within an order that has for its end something wholly simple. In a word, resolution is achieved through a kind of composition; — just as, in the practical order, composition is realized through a kind of resolution.

Hence, even though the same designations — ‘resolution’ and ‘composition’ — are used in the speculative as in the practical order, it is necessary to understand that these processes do not mean precisely the same thing when employed in these diverse orders. For, we have seen that there is a resolute mode in a general or loose sense every time there is a movement from what is complex or composite to what is simple, or from effects to causes. Resolution in this loose sense is found in the practical as well as in the speculative: we have seen that the practical discourse of the order of reasoning about operables proceeds from the end-as-effect to the means considered as causes; — a process that is resolute in the loose or common sense. There is, however, a meaning of the resolute mode that is more circumscribed; it adds something over and above the common or general meaning of resolution. In this special sense the resolute mode signifies that effects, expressed in conclusions, are seen in the causes of those effects, and seen especially in their highest causes. And because in such a vision certain truth — the end of the speculative intellect — is attained, the whole speculative order is called resolute in mode understood in this strict sense, although every effort of the speculative intellect does not attain ultimate resolution in the sense just enunciated.

Similarly there is a compositive mode in a loose or common sense that is realized both in the speculative and in the practical order: any movement from what is simple to what is complex, from causes to effects. This general sense of composition is found in the discourse of demonstration *propter quid*, since its principles are causes of the effects expressed in the conclusion. But that is composition in the strict sense which denominates the whole practical order wherein some relation to the will is a necessary condition. When that relation is only virtual or potential, then the practical reason is concerned with the causes of an operable which it disengages by way of a certain resolute process in the loose sense. But when the relation to the will is actual, the practical reason commands that the operative forms be imposed upon matter.

As a consequence, we can say that the speculative proceeds *modo resolutivo* in the strict sense, but not without a certain composition in the loose sense. The practical proceeds *modo compositivo* by way of a kind of resolution in the common or loose sense.