A. AN APPROACH FROM STRUCTURAL LINGUISTICS

In this paper it is claimed that parts of the *Topics* and the whole treatise entitled *Categories* represent successive phases of an attempt to examine linguistic relations within texts of a certain class which was later specialised on a different level of analysis for the purpose of Metaphysics in Books Δ and Z. Form and substance are thus linguistic.

An immediate objection arises from the fact that later grammatical theory growing out of the peripatetic tradition seems preoccupied with the paradigms of terms which commute within systems rather than with definitions of linguistic categories. To this objection there are two answers. First the application of analogy to the morphological features found in the earlier Greek poets is a different task from the structural analysis of language in a special class of texts. Secondly, one is bound to stress the tentative and provisional attitude of the philosopher himself towards so much of his own massive edifice. As Sir David Ross has well observed, ‘the *Metaphysics* as a whole expresses not a dogmatic system but the adventures of a mind in its search for truth.’1 I believe that the *Topics, Categories* and *Metaphysics* Δ are a similar record of the adventures of a mind in its search for linguistic concepts, and that Aristotle was feeling his way towards what Firth2 has defined as context of situation in language in his attempt to offer what we should call structural analysis of certain types of texts. Indeed, aspects of this work could well be regarded as essays by Aristotle in the direction lately followed by Professor J. Lyons in his *Structural Semantics.*3

The whole tradition of Peripatetic and Thomist scholarship has operated against regarding Aristotle as a linguist as much as a logician. Because the texts he chose to examine in *Topics* and *Categories* occur in observational and deductive situations, their analysis was seen as a foundation for syllogistic reasoning rather than as an essay in structural linguistics. As Professor Robins has remarked,

In contrast with other branches of learning in antiquity, grammatical scholarship seems to have received less than its due share of attention from us.4

The recent standpoint of Ackrill is therefore hardly surprising. It is important to recognise from the start that the *Categories* is not primarily or explicitly about names; but about the things that names signify . . . . Aristotle relies greatly on linguistic facts and tests, but his aim is to discover truth about non-linguistic items.⁵

By contrast Firth would probably have regarded Aristotle’s ‘reliance on linguistic facts and tests to discover non-linguistic items’ as a quest for levels of contextual examination and thus an entirely linguistic process of analysis.⁶

The Categories and Philosophy

Concerning the precise nature and function of Aristotle’s doctrine of categories there has been constant scholarly debate since later antiquity—as indeed the most ancient commentary traditions show. The actual references to the system in treatises other than that entitled *Categories* are discrepant enough to provoke discussion: thus *Topics* I, 9 agrees with the treatise in allowing ten categories, whilst *Metaphysics* Δ, 7 and Z are content with eight.

The traditional philosophical understanding was summarised by Zeller many years ago:

All our concepts fall (*Catt.*, 4; *Topics*, I, 9) under one or more main classes of assertions or ‘categories’, which denote various points of view from which things may be contemplated, while there is no concept which comprehends them as a class. Of these categories Aristotle enumerates ten: substance, quality, quantity, relation, where, when, place, possession, activity, passivity. He is convinced of the completeness of the scheme, but no definite principle is to be found for its origin: the categories of possession and place are named in *Categories* and *Topics*, but are passed over in all later enumerations. Of the remainder all have not the same value; the most important being the first four, and among them the category of substance, to which all the rest are related as what is derivative to what is primary. It is these categories which form the essential object of the first philosophy or metaphysics.⁷

It follows clearly enough from Zeller’s estimate that any basic reinterpretation of the nature and function of these categories will have a fundamental impact on the innovator’s metaphysical exegesis of Aristotle’s major work in that field.

6. op.cit., pp.29-32.
Indeed, to some philosophers the whole subject has seemed irrelevant and unnecessary. Bertrand Russell is one such.

What exactly is meant by the word, 'category', whether in Aristotle or in Kant and Hegel, I must confess that I have never been able to understand. I do not myself believe that the term 'category' is in any way useful to philosophy, as representing any clear idea. There are, in Aristotle, ten categories: substance, quantity, quality, relation, place, time, position, state, action and affection. The only definition offered of the term 'category' is 'expressions which are in no way composite signify'—and then follows the above list. This seems to mean that every word of which the meaning is not compounded of the meanings of other words signifies a substance or a quantity etc. There is no suggestion of any principle upon which the list of ten categories has been compiled.8

It will be observed that there is a serious difference between Zeller and Russell in the rendering of the Greek. Russell follows a more systematic and consistent method.

But modern Aristotelian scholars are no more happy with these categories than are the modern philosophers. In his introduction to his edition of the Metaphysics Sir David Ross observes:

The doctrine of the categories is a particularly puzzling one, partly from the lack of any very definite information as to Aristotle's precise object in formulating it, partly from our ignorance of the relative dates of the works in which various aspects of it are presented.9

The matter of precise object we hope to conjecture below, but first the issue of chronology demands some passing attention.

Here the work of Miss Huby has virtually removed the last doubt that Topics I, 7 (from 103a6) to VII, 2 are the original core of the Topics and date from about 360 B.C., when Aristotle had begun to take part in the teaching of the Academy.10 Our first statement of the categories in fact begins this early treatise, so it is much the earliest source of the doctrine, and appears at the outset of Aristotle's independent philosophical career. Again, Ackrill remarks 'it is however probable that the Categories and De Interpretatione are in fact early works of Aristotle'.11

Of the passages of consequence in the Metaphysics, Sir David Ross believes Δ to be an earlier self-contained treatise.

8. History of Western Philosophy, pp.222-223.
9. op.cit., p.lxxxii.
10. P. M. Huby, The Date of Aristotle's Topics, CQ, n.s. 12, 1962, pp.73-75.
Δ is evidently out of place where it is, and, as evidently, it is a genuine Aristotelian work . . . . Some of the notions discussed in it (κολοβόν, ψεύδος) are not appropriate to the *Metaphysics*, and it is apparently earlier than the physical works, while the rest of the *Metaphysics*, in its present form, is later.¹²

Now in view of the exceedingly early date posited for the kernel of the *Topics*, it is natural to take this treatise as a little earlier than the *Categories* and *De Interpretatione*. Clearly, *Metaphysics Δ*, which was also current as a separate treatise, is appreciably earlier than *Metaphysics Z*, which must be subsequent to the physical studies. Probably *Metaphysics Δ* is subsequent to the *Categories* in composition; but it is conceivable that they are closely contemporary all the same, and certainly Δ, 7 sheds a great deal of light on *Categories* 2-4. The likely chronological order may be shown thus:

I. *Topics* 103a6—152b35  
II. *Categories*: *Metaphysics Δ*  
III. *Metaphysics Z*.

The Treatment of the Ten Categories in the *Topics*

In view of prime importance of the categories as the earliest distinctive doctrine of Aristotle which seems now to be emerging from recent chronological investigation of the texts, it is of great import to determine how he established this system as far as the data allow us.

Starting from a study of the linguistic context of question and answer in which he believes the categories were generated as responses to ten types of προτάσεις or single questions, he goes on (I, 9) to tell us that four differentia or marks of distinction (διαφοραί) are present in these ten classes of statements (γένη τῶν κατηγοριῶν). The ten classes of statements are ‘what (it is)’ (τί ἐστι) ‘of some size’ (ποσόν) ‘of some kind’ (ποιόν), ‘in some relation’ (πρός τι) ‘in some place’ (πού) ‘at some time’ (ποτέ) ‘to be in a position’ (κείσθαι) ‘to be in a condition’ (έχειν) ‘to do’ (ποιεῖν), and ‘to suffer’ (πάσχειν).¹³ The rest of this chapter deserves word-for-word translation. ‘Always accident or class or property or definition will be present in any one of these four statements. For all simple questions arising from these four signify “What is it?” (τί ἐστι;) or “What size?” (ποσόν;), or “What kind?” (ποιόν;), or some one of the other predicates (= statements).¹⁴ It is clear from this that the expression stating what something is sometimes signifies substance, at other times of some size, at other times of some kind,
at other times one of the other *predicates*. Here it will be noted that we are rendering the Greek literally. Russell’s practice of treating all the category words of Greek as abstract nouns offers correct labels for the areas they cover but obscures important grammatical distinctions between parts of speech which may prove to have a dynamic influence on the interpretation. Of Zeller’s pastiche of abstract nouns and adverbs the least said the better.

Aristotle now exemplifies his principle:

For if, when ‘*man*’ is under discussion, someone says ‘the thing under discussion is *man* (or, is (a) *creature*), he says *what it is* and signifies *substance* (*ousia*). Or if, when the colour ‘*white*’ is under discussion, someone says ‘the thing under discussion is *white* (or else, is(a)colour)’, he says *what it is* but signifies of *some kind*. Again, if, when ‘*a cubit’s size*’ is under discussion, some one says ‘the thing under discussion is *a cubit’s size*’, he says *what it is* and signifies of *some size*. For each of these (predicates), if it is stated as an *identity* of the subject or if it states *class* of the subject, signifies *what it is* (i.e. *substance*). But when any of these is stated of a *subject distinct from it* (περί ἑτέρου), it does not signify *what it is*, but of *some size*, of *some kind*, or one of the other predicates. For the contents of statements (i.e. the same thing or another thing) and from what sources they come (i.e. simple questions), that is enough.16

The Categories of *Metaphysics* Δ, 7

From 103b27-9 of the *Topics* it is clear that Aristotle believed that the statement of *what it is* was made by every one of the ten categories or predicates. This is less obvious for the last seven than it is for the first three. However, *Metaphysics* Δ, 7, which seems roughly coeval with the treatise *Categories*, offers a concise explanation of this problem arising from what we have seen in the *Topics*.

However, at this point certain preliminaries need attention. First one cannot overstress the importance of two aspects of Greek grammar. Greek has no true indefinite article, as enclitic τις means rather a certain unspecified item. Thus if a Greek wishes to say ‘the cat is a creature’ he must say ‘the cat is *creature*’. The pattern is just like ‘the cat is *black*’, which of course really states ‘the cat is *a black one*’. So, when we say the cat is black, in Aristotle’s terms from the *Topics* we say *what it is* but signify of *some kind*; in this case its *colour*. But when we say ‘the cat is creature/animal’ we imply a complex of organised bones and flesh and fur with nervous organisation, perceptive

power, capacity for activity and a warm blood stream. In Aristotle’s terms the cat is animal says what it is and signifies substance. Now it is clear to us that animal is a noun and black is an adjective; but the Greeks called them substantival and adjectival labels or nouns (ὄνοματα). The affinity is partly due to the impossibility of distinguishing them structurally when they occur as predicates in Greek—for such predicates often happen to share the termination of the subject even when substantival.

The second grammatical problem is that of what Bloomfield calls equational predication.\(^1\) Generations of schoolboys have (as I did) seen this doctrine for the first time on page 4 of North & Hillard, where they learnt that ὁ ἀγαθὸς ἄνήρ is attributive and means ‘the good man’ whilst ὁ ἄνήρ ἀγαθός is predicative and means ‘the man(is)good’. Bloomfield calls the attributive type an endocentric construction.\(^2\) The predicative form, however, is an equational predication. This may be expressed by the formula article + first word = second word (A + I = II). Many complications arise from Aristotle’s attempt to regard A + I + II—the endocentric construction—as a case of equational A + I = II. Now we have already noted that ‘the cat is black’ really means ‘the cat is a black one’. In Homeric Greek as in Sanskrit the article is still a demonstrative pronoun, and survived thus in Attic Greek in such idomatic phrases as ὁ μὲν . . . ὁ δὲ (the one . . . the other). Thus in Greek ὁ ἀγαθὸς ἄνήρ (the good man) could be viewed from this aspect as ‘the good (one) (is) man’—or a case of equational predication rather than an endocentric use—as A + I = II, not A + I + II.\(^3\)

The other non-grammatical consequence we must discuss after looking at the indigence of Greek in respect of indefinite articles noted above is that the Greeks did not learn foreign languages, and therefore could not use comparative treatment of meanings for philosophical purposes. Thus men saw their own linguistic patterns as the pattern of nature. The need to say ‘Plato is man/Socrates is man’ instead of being able to individuate the predicate by saying ‘Socrates is a man/Plato is a man’, was a powerful pressure towards the Platonic doctrine of forms or ideas (εἴδη, ἱδεαί). If thousands of individuals are man, not each a man, there must be a being MAN in which all somehow are comprehended and from which all originate. We now know that in this special case the gene does work rather like this—thanks to Crick and Watson—but this modernisation hardly serves for inanimate objects. The same viewpoint gave us the Holy Trinity. Greek cannot say that the Father is a divine being or that the Son is a divine

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being: the Father and Son must both be divine being (or God): hence we have the Athanasian Creed affirmation, ‘three persons in one substance’. There substance is used as in Metaphysics Z, but really to handle the issue of this linguistic pattern for which Plato’s solution showed defects. A version of Metaphysics Δ, 7 reads like this.

In some cases the thing being (τό ὄν) is mentioned in reference to an accident, in reference to other cases in reference to itself. In reference to an accident we say such things as ‘the just is musical’ (ὁ δίκαιος μουσικός έστι), ‘the man (is) musical’ (ὁ ἄνθρωπος μουσικός), and ‘the musical (is) man’ (ὁ μουσικός ἄνθρωπος). Hence we speak in the same way as if we were to say ‘the musical builds/is building’ (ὁ μουσικός οἰκοδομεῖ), because we consider it has befallen the builder to be musical or the musical (to be) builder—for the statement ‘this is that’ signifies that this has befallen that; and this rule applies with the cases quoted above. Therefore, whenever we call the musical man or the man musical, likewise the white musical or the musical white, we say this latter pair because both those items have befallen the same existent person, but the former pair because the musical quality has befallen the existent person—thus we call the musical man since the musical quality has befallen (a) man. On the same principle the non-white is said to be, because it is for the person to whom it has befallen. Thus things which are said to be in reference to an accident are so spoken either because both exist for the same (other) thing which is now in being (i.e. ‘the white is musical’); or because that to which belongs as an accident the item of which it is predicated itself exists (i.e. the musical (is) man); or because the latter exists in the former item of which it is predicated and which is in being (i.e. ‘the man (is) white’).

As many items as the following figures of predication indicate are said in reference to these same existent subjects. For, in however many ways they are said, they indicate ‘to Be’ in all cases.

Before continuing the chapter, one must consider Aristotle’s assertion that ὁ μουσικός ἄνθρωπος—‘the musical (is) man’ is said like ‘the musical builds’—ὁ μουσικός οἰκοδομεῖ. Further, he analyses ὁ μουσικός οἰκοδομεῖ ‘the musical builds’ as equivalent to ὁ οἰκοδόμος μουσικός—‘the builder is musical’; or to ὁ μουσικός οἰκοδόμος—‘the musical is builder’. The last case shows him treating the finite verb present tense as equivalent to is + agent noun. These apparent oddities show a very remarkable affinity with the doctrines of transformational generative grammar. Thus Chomsky observes:

The transformational component consists of a sequence of singulary transformations. Each transformation is fully defined by a structure
index, which is a Boolean condition of **analyzability**, and a sequence of elementary transformations. The notion **analyzable** is determined in terms of the ‘is a’ relation, which, in turn, is defined by the rewriting rules of the base and by the lexicon.\(^{21}\)

If we look at Aristotle’s case in these terms, the **musical man** does not mean ‘the man is musical’, but it does imply this base structure. As we have already seen it is in fact analyzable in Homeric terms as ‘the musical (one) (is) man’. In the same way ‘the musical (one) (is) builder’ can be postulated, thus giving an analyzable base for ‘the musical (one) builds/is building’. Thus the deep base structure in Chomsky’s sense will be as Aristotle asserts: ‘the builder (is) musical’ \((A + I = II)\).

Returning to the text, we shall find Aristotle here offers us a shorter list of eight (or really seven) categories.

Since then of things predicated some signify **what it is**, others of some **kind**, others of some **size**, others in some **relation**, others to do or suffer, others in some **place**, others at some **time**; for each of these then they signify that the **same thing is**.\(^{22}\)

Having telescoped the four verbal predicates of the **Topics** into one, he turns to explain verbal functions.

**The man is walking** is in no way different from **the man walks**; similarly **the man is cutting** is just like **the man cuts**, and likewise in other such cases.\(^{23}\)

To us the progressive aspect makes a big difference, but in the context of observing phenomena there is no real distinction. The next transform to **is + agent noun** seems odd to us. **The man runs** might be transformed either to **the man is running** (actual) or **the man is a runner** (potential). But in Greek the transform is **the man (is) runner**, which contrives to preserve actuality and potentiality as options. Probably he abolished the categories ‘to be in a position’ and ‘to be in a condition’ because agent-nouns can substitute for the first and trade or grade labels for the second. Thus ‘the man **is sitting**’ arises from ‘the man **is sitter**’ and ‘the man **is armed**’ from ‘the man **is hoplite**’.

Next Aristotle turns to a matter we shall discuss under the heading of essence (τὸ τί ἐγίνετο). This is the use of initial **ἔστιν** to mark the truth of a proposition and of initial **οὐκ ἔστιν** to mark its falsity.\(^{24}\) As cases he quotes

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22. Mett. Δ, 7, 1017a24-27.
24. Mett. Δ, 7, 1017a31-36.
έστι Σωκράτης οὐ λευκός and also έστι Σωκράτης μουσικός. These we should render ‘Certainly Socrates is not-pale’ and ‘Assuredly Socrates is musical’. Aristotle analyses them thus: ‘it is (true): Socrates (is) not-pale’ and ‘it is (true): Socrates (is) musical’. His false case is οὐκ έστιν ἡ διάμετρος σύμμετρος which we might render: ‘In fact the diagonal is not commensurate’, but which he analyses as: ‘It is not (true): the diagonal (is) commensurate’. Without the colons all three are accurate English versions.

Finally, Aristotle discusses potentiality (δύναμις) and actuality (ἐντελέχεια):

Further, ‘to be’ and ‘being’ sometimes signify that one of these things said is to be said potentially, and at other times that it is to be said actually. For we predicate ‘to be seeing’ both of the thing potentially seeing and of the thing actually seeing. Likewise we say, both of the thing able to use understanding and of the thing really using it, that ‘it understands/is rational’. Also we say ‘it is at rest/rests’ both of the object to which rest is present and of the one able to rest. In the same way of those predicates which are substances; for we say ‘Hermes (potentially) is in the block of stone’ and ‘the half (potentially) (is) of the line. Further we call the crop not yet ripe ‘wheat’.

The overall study of this vital chapter of Metaphysics Δ permits us to recognise the generative and transformational linguistic basis of what are called the ‘categories of being’ as Aristotle saw them. For distinguishing between acceptable propositions and deviant structures generated from his basic structures Aristotle used a truth (or essence) test qualified by a further distinction between actual and potential truth.

Next we turn to substance in the Categories. In chapter 2 he goes over the equational and endocentric problems, telling us that things are said of a subject or υποκείμενον (= substratum in Metaphysics Z) and others in the subject. Instances of the first are ‘man’, ‘dog’: of the second ‘white’, ‘angry’. Things said of the subject are often genus or species. Ackrill observes ‘subject means neither grammatical subject nor substance, but is a mere label for whatever has anything said of or in it’. Previously he makes the amazing statement: ‘Being said of a subject is no more a linguistic property than being in a subject’.

In chapter 3 Aristotle explains that things said of something said of the subject are themselves said of the subject. Thus, if ‘the particular man is man’, and ‘man is creature’ it follows that ‘the particular man is creature’. This is assisted by the Greek tendency to write either ‘the man’ or ‘the men’.

26. J. L. Ackrill, op.cit., pp.73-76.
for ‘mankind’. Things under different genera will have different typifying features, so that words describing a particular class (genus) cannot be applied to a species (form) or individual of another class. Chomsky’s deviant sentence ‘Colourless green ideas sleep furiously’ is thus ruled out by our philosopher, who observes

Things of different classes and not classed under each other have different specifying features for their forms. Instances are (the classes) knowledge and creature. For typifying features (of forms/species) of creatures are walking, two-footed, water-dwelling and winged. However, one form of knowledge does not differ from another by being two-footed.

In fact Aristotle offers us a theory which Chomsky so far lacks giving coherent grounds for rejecting all statements which offend like ή γραμματική πτηνή ‘the grammar (is) winged’. This resembles Firth’s ‘cat’s wings’ or the ‘ideas sleep’ quoted above, which both deviate for the same reason.

In chapter 5 Aristotle isolates primary from secondary substance or οὐσία, then sets secondary substance apart from other predicates. The primary substance here is the subject (substrate?) A + I. ‘The substance most appropriately and most of all so named—likewise being the one spoken in first position—is that which is said neither of a subject nor in a subject, like “the particular man” or “the particular horse”. Those substances are spoken second in which the first-spoken substances exist, as being present in their forms or classes (species or genus)’. So ‘Socrates (is) (a) man’, ‘The man (is) (an) animal’ exemplify form and class respectively. He then explains that both the sound and meaning of a secondary substance are said of the subject. Thus all occurrences of secondary substances are synonymous in Aristotle’s sense of that term given in Catt. I. He goes on:

Mostly neither the sound nor the meaning of things said in the subject can be said of the subject: but sometimes the sound may be said of the subject even in cases where the meaning cannot possibly be spoken of the subject.

Here he is first explaining the endocentric construction as being in the subject but not said of it as ‘the white man’. If we treat this as ‘the white (one)
(is) man' of course it becomes a statement of sound and meaning of the form *man* after the subject particular 'the white one'. The other case he mentions as said of the subject is a case like 'the man (is) white', where *white* is spoken homonymously in the sense of *Catt.* I,\(^\text{34}\) for its meaning applies not to the *man* but to his *skin*. Thus things stated of primary substances are said synonymously if they are secondary substances, but are said homonymously or paronymously if they belong to the other nine categories. A paronymous use is a case like substituting 'the man *runs/is running* for the second substance 'the man (is) (a) runner'. Here Aristotle has given us a logical justification for the need for a subject to exist before a predication can be made: A + I is a precondition for II.

Turning to *form* and *class* he is careful to point out that *form* is more substantial than *class*, indeed the relation of form to class is that of primary substance to other things. Except these substances, no other category clarifies the nature of the primary substance. 'White' or 'running' answer a different question from that answered by 'man' or 'animal'. Further, he is careful to point out that no substance may be in the subject (substrate). 'Primary substance may neither be in it nor said of it, while secondary substance, though said of the subject (substrate) is not in it.' In fact on this view primary substance *is* the subject or substrate.

The Material of *Metaphysics, Z*

The main arguments of the *Metaphysics* concerning οὐσία (substance) which are set out in Book Z appear to be based on the three earlier studies examined above. In the very first sentence Aristotle admits his prime dependence on the treatise περί τού ποσαχώς. Now many years ago the German scholar Apelt regarded the doctrine of the categories as a classification of the senses of copulative 'is', and the recent progress of generative linguistics allows us to extend this approach.

In Z, 3 Aristotle tells us that substance is spoken of in four ways. 'For what was to be and the *universal* and the *kind* seem to be the substance for each thing, and in fourth place the *substratum* (ὑποκείμενον).' The complex discussion of *essence* in Z, 4-6 can be eased by reference to Δ, 7 where we suggested that the affirmative use of ἐστι underlay it, ἐστι, δει ἔν 'it is (true), whatever it was'. *Essence* then is the subject of a sentence with emphatic ἐστι—a 'truth-statement'. But here *substratum* is our old *subject* of the linguistic treatises, which can be followed by any of the nine *accident/property* homonymous predicates. *Essence* must state *being* (actual or potential), whilst *substrate* can be involved with coming-into-being and passing-away situations. The *Universal* here is our old *form* (εἴδος), while

34. *Catt.* 1a1-5.
class (γένος) retains its old use: so either of these may be substantival predicates (category I) of both substance and essence.

The Prime Substance in Metaphysics Z

In chapter 3 (1029a2-3), the substrate (subject) is defined as ‘matter in one sense, form in another, and both combined together in a third’. A typical subject of the categories is the man (ἄνθρωπος), another is Socrates (Σωκράτης)—usually without article. But, as we have seen ὁ μὲν/ὁ δὲ is also a possible subject.

Let us now attempt to resolve or ‘factorise’ our equational type predication to test its validity for analysis of Metaphysics Z. In so doing let us begin by recalling that the Categories asks what things are substances, whilst the Metaphysics (Δ perhaps apart) is more concerned to ask what is the substance of these things. If we examine the predication ὁ στρατηγὸς ἄνθρωπος ‘the general(a) is (a) man(c)’, we find it informs us in terms of Categories 2b 7-14 that the substantive predicate man can be said synonymously of the subject the general: in terms of our notation, c can be thus said of a, and, from the standpoint of Categories 2a14-27, c is a ‘second substance’ stated as a ‘form’ (species, ἐίδος) of a. On the other hand, from the standpoint of Metaphysics Z 1029a2-7, a is a combination of matter (ὕλη) and form (μορφή), whilst in the same treatise, 1041b7-9, we are told that the cause of matter (ὕλη) is sought—namely the form (ἐίδος)—by which it is something; and that this is substance (ούσια). On this evidence it seems that for Metaphysics Z c (man) is the substance of a (the general) because it is the form (ἐίδος) of a. On the other hand Categories declares individual particular subjects like the general are primary substances and their forms like man are secondary substances. From the position of Metaphysics Z we have also seen that such primary substances in the terms of the Categories are compounds of matter + form.

Now we can say ‘the general (a) is substance (b)’ ὁ στρατηγὸς οὔσια, and ‘the particular substance (b) is man (c)’ ἡ τίς οὔσια ἄνθρωπος. Thus we find that, as a = b and b = c, therefore a = c: that is matter + form = substance, but substance = form; therefore matter + form = form (A + I = II). Clearly this equation only works where matter = zero. So if matter + form = substance, then zero + form = substance; therefore we must conclude that form = substance. Therefore, despite the different priority of Aristotle’s early linguistic treatises, from the viewpoint of phenomenal objects of the world rather than linguistics the primary substance becomes the form in Z for metaphysical studies, not as before remaining the individual object seen.

The lack of the concept zero prevented Aristotle from stating this change
mathematically, and therefore he has a long logical discussion to set up the relative priority of form to matter so as to find a structural linguistic route to the same conclusion. Phenomena provide data for our thought or metaphysical image-making, but metaphysics operates with non-material images of things or states of affairs. Thus matter is the reality of physics where it is defined by form, but in metaphysics it has no reality for the world of mental images and thus becomes an unreal zero factor, while form is the sole mental reality. Furthermore, at 1028a25-7 it is explained that τὸ βαδίζον is closer to reality than τὸ βαδίζειν can be, because in the former the basic substance is defined. Thus we conclude that agreement of article and noun creates definition. So the article which thus limits must be the individuating principle in language. However, on our previous analysis the article must represent matter, since we can say the man (is) man (ὁ ἀνθρώπος ἀνθρώπος) as an equational A + 1 = II pattern, and the article is the only part of this subject not identifiable with the form. Thus matter must be the individuating principle in nature like the article in grammar. This conclusion is noted by Ross also, but on observational more than deductive grounds.

When we return to Aristotle, . . . we find that on the whole he tends to describe matter as the source of plurality, if not of individuality.35

Secondly, in grammar the article is modified by the gender, number and case of its noun, not the other way round—so in A + I pattern we say η Πλίνθος but ο Λόγος. So nouns are prior to articles in language: therefore forms are prior to matter in nature. Doubtless, language was not the sole model for the doctrine of 1041a6-b31, but it clearly contributed powerfully to the seemingly surprising doctrine that form is now the prime substance while the individual subject now becomes derivative or secondary.

To conclude, though in his linguistic writings Aristotle regards article-noun as primary substance and the formal substance predicated of it as secondary; in studying the structure of nature Aristotle finds that form is the primary substance and matter + form secondary to it. Therefore in Metaphysics Z a noun expressing form is primary though predicative, while its subject (article + noun) is secondary.

B. THE APPROACH FROM VISUAL PHENOMENA

In a recent most admirable study Professor A. C. Lloyd of Liverpool has examined the Aristotelian approach to universals as being post rem rather than in re.36 In setting out his position he makes several points of great general value.

In the narrow sense, Aristotle is no more a nominalist than Aquinas or indeed Ockham. The traditional label which should be attached to him is that of *conceptualism*. The common features that we attribute to the external world are not names, in so far as names do not belong to *language*, but to *this* or *that* language. They are to be found in what is for Aristotle logically prior to language, namely *thoughts*, of which *concepts* is a synonym. Following Aristotle himself, mediaeval philosophers called them *actus mentis*. I shall assume for convenience a notion of ‘proposition’ which may be a little old fashioned... One can then summarise the initial thesis which is to be attributed to Aristotle. Utterances and sentences belong to this or that language. Propositions do not belong to a language; they are combinations of concepts, and they are what utterances and sentences mean. Things and states of affairs are what make utterances and sentences true. Universals are concepts and therefore belong to propositions. Forms belong to things and states of affairs.\(^37\)

Accepting Lloyd’s remark that utterances belong to this or that language, we must not however forget that the Greeks did not include the learning of foreign tongues in their education, and were therefore apt to regard their own language as not only natural but also paradigmatic of human thought process either absolutely or relatively to all barbarian speech. With this qualification we may grant that thoughts and their combinations into propositions are not verbal, though still noting that the cultural prejudice touched on above may have led Greek philosophers into anguished attempts to reconcile propositions with utterances in ways we should never essay. But if thoughts and propositions are not verbal, then they must be essentially pictorial—not auditory but visual. On such a view we find that Lloyd’s ‘things and states of affairs’ are to be observed visually and remembered by mental pictures of them. When such mental pictures are classified and stored in whatever we mean by our memory they become subject to later recall and can be used by the application of imaginary processes, a kind of image-making which arranges the recalled visual data meaningfully in a new situation with other images recalled from various different visual data to create a proposition by this exercise of imagination. Once visualised such acts of mind (or imagination) can be verbalised in any language known to the speaker so that they become expressed in an utterance.

Such a view of course underlies the tradition of Latin prose composition: metaphors must not be rendered literally but the situation must be visualised and then expressed either literally or in a metaphor of the target

\(^37\). *ibid.*, p.2.
language. Sentences merely serve to tie together the labels devised to give phonetic expression to the imaginary or observed shapes and patterns envisaged as concepts in such a way as to suggest the proposition in the mind of the speaker to the mind of the listener. These visual patterns actually seen are of course ‘forms’, but the imaginary patterns recalled from these same perceptions of things or states of affairs are ‘universals’, for they are open to recall on countless occasions and to unlimited regrouping with an unrestricted range of other imagined concepts. This of course means that a specific form like ‘man’ is universal, but also particular forms like ‘Socrates’, ‘Jesus’ or ‘the Titanic’ can have enough notoriety or significance to be employed paradigmatically as universals.

However, because the image perceived by the senses is reflected in the image generated in the imagination, then the universals and the forms from which they derive must share the same labels in speech if they are to refer to the same ‘thing or state of affairs’. If in fact vision and imagination are to represent distinguishable layers, they must then be distinguished for speaker and hearer alike by their context and collocation, but not by any distinctions in their verbal morphology. Lloyd is very careful to clarify this point.

At the same time, but with a qualification, universals are forms. For the content of the thought, the concept, is a form, but one made general by being abstracted in thought. One is reminded at once of Locke’s abstract general ideas which exist as such in the mind alone but are abstractions from the ideas or qualities which exist in the external world and which as so existing are particular. It follows that the thesis which will be presented as the alternative to the conventional history can appear equally as a denial that forms are to be identified with universals, and of course the equivalent claim that (as such) forms are particulars, or as the thesis that forms can be spoken of as they exist (when they are particular) or as they are thought of (when they are general). Understood in this way it would not be wrong to say that Aristotle held a post rem theory of universals and an in re theory of forms.38

Lloyd is careful to point out that Aristotle’s customary description of universals as ‘what can be predicated of many or what can belong to many’ does not resolve our problem about their ontological status.

For it is notorious that his diction allowed at least three categories of things to be said of or predicated of something: (a) linguistic entities, i.e. predicate expressions; (b) extra-linguistic entities, i.e. properties; (c) entities which are possibly intermediate, i.e. the ‘terms’ of his logic.39

38. A. C. Lloyd, op.cit., p.3.
39. ibid., pp.3-4.
Now instances we might propose are (a) ‘Socrates is walking in the Lyceum’; (b) ‘Any man is two-footed’; and (c) ‘All Cretans are liars’. In these instances type (a) is a short-term event or ‘accident’ under observation, type (b) is a ‘property’ which is coeval with and natural to any human organism, while type (c) is an observed tendency which is generally true up till now, yet which admits of odd exceptions now and may become infinitely open to them in the future. But, *pace* Lloyd, they do not seem in essence to be distinguished by being *linguistic* or *extra-linguistic*. Rather, their distinctions relate to their duration and their generality. All are ‘states of affairs’ which are observable, memorable, competent to feed the imagination and able to be uttered in language.

The relations of such ‘states of affairs’ to the memory and imagination seem to me to be explicated by Aristotle himself in the *De Memoria*, and it may well be that such an aim in the author’s mind may account for some of the oddities of this treatise which Sorabji notices in his introduction and commentary. Thus in marking the need to distinguish between the act of remembering and the disposition to remember Sorabji observes: ‘Aristotle seems to think of the disposition *mistakenly* as an ability to perform acts of remembering’. If we are discussing memory as a faculty this may well be an *error* as Sorabji claims, but if we are really discussing the use of memory to furnish the material used by imagination in creating visual concepts in the mind so as to weave them into new propositions, then Aristotle’s curious emphasis is not erroneous but correct.

Of course Sorabji himself recognises the peculiar importance of the image in Aristotle’s theory of memory.

When one remembers, the present content of one’s mind, according to Aristotle, is a mental image. The idea that such an image is involved is introduced as something that is ‘clear’ (450a27). We shall want to know what makes this so clear to Aristotle. But first we should notice that Aristotle’s theory of remembering requires not any kind of image, but an image that is a likeness or copy (*eikon* 450b27; 451a2, a11-12) of the thing remembered. An *eikon* of X, strictly speaking, is both similar to and derived from X. The kind of derivation that Aristotle has in the front of his mind is the causal one described in 450a27-b11. The image is causally derived from a past act of perceiving and from the corresponding object of perception. Whether one is remembering may depend on whether one’s image is an *eikon* (451a2-5, a8-12). This seems to be a correct account of one kind of case. But we must protest against Aristotle that it is not the only kind.

42. *ibid.*, pp.2-3.
This protest I cannot share: it is true, but it neglects the issue that Aristotle is concerned in this treatise with memory in connexion with imagination. In Sorabji's own version he makes clear that one remembers particular images. Memory is of particular forms as universals.

451a14. Now, it has been said what memory and remembering are, namely the having of an image regarded as a copy of that of which it is an image, and to which part in us memory belongs, namely the primary perceptive part and that with which we perceive time.43

In his notes on p.87 Sorabji reminds us that the 'having of an image' is a hexis, and that memory is an instance of hexis in this sense of possession and retention. On the other hand, he next assures us that memory is also a hexis in the sense of being a state. In commenting on the phrase 'regarded as a copy of that of which it is an image', he observes that Aristotle does not seem to have in mind symbolic images. 'An image of the man, Coriscus, will be regarded as a copy, and so presumably is a copy, of Coriscus himself. It is not a copy of something that symbolizes Coriscus, for example of his hat.' So memory on Sorabji's interpretation of Aristotle will be of particular forms.

On the other hand, recollection is the imagination generalising a class image from particular seen and remembered images. So recollection is of specific or generic forms as universals.

453a10-14, The explanation is that recollecting is, as it were, a sort of reasoning. For in recollecting, a man reasons that he formerly saw, or heard or had some such experience, and recollecting is, as it were, a sort of search.44

This point is well made in Metaphysics Z, 10 in another context:

For 'circle' and 'being in relation to circle' come to the same thing, as does 'soul' and 'being in relation to soul'. But for something already compounded of eidos and hulē (i.e. τὸ σύνολον)45 like this particular circle here or the particular instances of some perceptible or knowable object—by knowable I mean like objects of mathematics, by perceptible I mean like objects of bronze or wood—in all these cases there is no definition, but they come to be known with thought or sense perception, and when they have gone away from their full actuality it is not clear whether they exist as beings or not. However they are always mentioned and recognised in terms of the universal. 1036a1-8.

43. ibid., p.52.
44. ibid., p.59.
45. See Liddell and Scott, A Greek Lexicon, s.v. σύνολος.
The concept then, be it particular memory or generalising analogical recollection, is always Professor Lloyd's *universal*. Whether recreated from memory or generalised by recollection based on a current observation, the concept is combined by the imagination with other such concepts to create visual propositional pictures capable of verbal utterance. In generalised *recollection* terms, the *universal* picture in the imagination underlies statements like 'Plato is (a) *man*' or 'Aristotle is (a) *man*'. But the particular memory case of a universal remembered in the imagination underlies an utterance like 'The one approaching is *Socrates*'. In this latter case we recognise the person as *Socrates* from our memory image, just as we earlier recognised Plato and Aristotle as being *men* in terms recollected in our imagination. So an existing image of Socrates' shape and movement in the mind is prior to our ability for meaningful observation of the physical presence of Socrates: otherwise we shall not recognise him. In the cognitive processes, *form* in this sense of *universal* is prior to the substance made up of *matter + form* which is the *subject* of our sensory observation. Of course subsequent introduction to the unknown person would cause us to learn his identity and the remembering of the image of his shape or form would become a conceptual universal enabling us to recognise any future occurrence of his presence in our range of vision. So in such a visual sense relating to the possibility of propositions we see that this conceptual *form* *Socrates* is primary substance in the sense of *Metaphysics* Z 1029a2-7 while the *matter + form* subject *Socrates* becomes secondary substance in cognition, just as in artefacts the blueprint *form* is prior to the manufactured *matter + form*.

1029a2-7. Matter is spoken of in this kind of way; but *shape* in another way. The combination of these, by which I mean the *matter* like 'bronze' and *shape* like 'figure of a concept' and the *compound* like the statue created from the two, is said in a third way. Therefore if Form is prior to Matter and more real, by the same argument it will also follow that Form is prior to the Compound of Form and Matter.

To conclude, then, a previous awareness of the conceptual world of propositions is needed to enable us to observe the world of things and states of affairs. To deal with the generalising element of our imagination I mean to coin two terms referring to in one case repeated or analogical acts and in the other to objects classifiable to one species or genus. Then we might say that such conceptual knowledge in the human imagination is acquired by observing and forming generalisations from recollected *sympractical* acts or *symphysical* objects and also by observing and remembering *particular* events and individuals. So we note that the recollecting process of *De Memoria* 451a18-453b9 is a quest for *sympraxis* or *symphysis* aroused by a current
observation. Further both general and particular mental images are concepts and they are *universals* even when they record the shape or motion of individual objects.

In short, Lloyd may have despaired too soon of establishing an ontological distinction clarifying the status of universals. Following our fuller definition of universals based on examination of *De Memoria* we may hazard a suggestion of the following schema. It should be emphasised that the third column is not designed to justify Iranian dualism, though it might be made marginally compatible with Augustinian views of evil.

<table>
<thead>
<tr>
<th>World of Imagination</th>
<th>World of Observation</th>
<th>World of Conjecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Phenomena</td>
<td>Physical Phenomena</td>
<td>Assumed Phenomena</td>
</tr>
<tr>
<td><strong>Content:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universals</td>
<td>Things and States</td>
<td>Undefined Matter</td>
</tr>
<tr>
<td><strong>Substances:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forms (primary)</td>
<td>Matter + Forms (secondary)</td>
<td>Matter (privative)</td>
</tr>
<tr>
<td><strong>Nature:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conceptual</td>
<td>Existential</td>
<td>Substential</td>
</tr>
<tr>
<td><strong>Participants:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rational beings</td>
<td>Non-rational beings</td>
<td>Irrational non-beings</td>
</tr>
<tr>
<td><strong>Condition:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totally actualised</td>
<td>Actualising potentiality</td>
<td>Simple potentiality</td>
</tr>
</tbody>
</table>

Further, this table may help us deal visually with the problem of *essence*. After much discussion of the claims of substance, definition and matter to be τὸ τί ἦν εἶναι 'the what was to be' or *essence*, Aristotle at Z 1032b9-14 settles for identifying it with εἶδος or *form*.

Again now the motion deriving from this (healing) is called a *making*, in this case directed towards being healthy. Thus in some sense it comes about that individual health derives from general ‘health’ and the house here from ‘house’ in general: in short, that the thing having matter derives from the thing without matter. For the art of healing is the *form* of the individual’s health and the art of building is the form of the particular house. So I say substance without matter is ‘the what was to be’.

Therefore the truth-statement view of essence in utterance which we earlier espoused will answer to an existential or reality view of essence in observation. *Essence* is thus observationality *form in existential combination with matter* as distinct from the normal *universal* sense of *form*.

To conclude then, *essence* is *form* as involved in the process of the actualising of potentiality both in the organic sublunary life-cycle and in the mental progress of the soul towards imitation of the celestial eternal order and the perfect actuality of the deity. In the organic sphere the infant is imperfectly actualised man; and a green crop is imperfectly actualised man.

wheat, as is stated in *Metaphysics* Δ, 1017b8. In this way *form* is made a potential rather than actual phenomenon whilst remaining an actual concept. So in organic life ‘the what was to be’ is a much more satisfactory way of describing the ‘form’ you expect to see but do not yet behold at the time of observation. If in the same passage we interpret Hermes as ‘present in the stone’ in reference to intermittent divine power acting through the statue we see, the point is still cyclic. But if we take it as referring to a block from which a sculptor can ‘liberate’ the shape of Hermes so as to actualise his mental image of the god, then the sculptor will contribute to an actualising of more particular form which is partly a direct aspiration of the rational human soul towards the total actuality of the deity. In another sense of course it is as cyclic as the unripe crop reference. Although human purpose rather than genetic process converts the marble block into a statue of Hermes, it is still a cyclic process analogous with the ripening and harvesting of the green wheat plants, for weathering and vandalism will finally reduce the statue into marble chips no more meaningful than the original form of the quarried block. Thus the ‘form’ momentarily actualised in union with matter at the acme of perfection open to sublunary phenomenal things becomes and remains ‘the what was to be’ still; even before the object is perfect or full-grown, or indeed after the organism is ageing or the inanimate article has begun to decay. But because for most of the life of the thing in question the form of its shape has not yet achieved or is now losing the visual completeness attained in that moment the conceptual term ‘form’ is more happily replaced by the process term ‘essence’ or ‘the what was to be’.

C. CONCLUSION

It is now proper to unite the threads of this visual analysis above with our earlier linguistic approach. First, our final note on *Metaphysics* Ζ, 1032b9-14 equates εἶδος (form) with μορφή (shape), and explains that the ‘form’ predicate is observationally first or primary substance and the ‘matter + form’ subject is secondary substance because we cannot observe effectively without recognising unless we are in a learning rather than observational context where we are specifically being taught to recognise new things. So in observation we must know a shape before we can knowingly perceive a concrete instance of it. Linguistically we have noted that this analysis entails equating the passive and conditioned article of the subject with matter (ὕλη) and its active and conditioning noun with form (εἶδος) in its essential τὸ τί ἦν εἶναι rather than universal sense, while the predicate noun in second place will express form in its universal sense (καθόλου). In such cases of our equational predication of the $A + I = II$ type as ὁ φιλόσοφος ἰόνοις ἀνθρώπος ἐστίν we may translate linguistically to
state ‘The philosopher (is a) man; it is true’ or essentially and observationally to say ‘The philosopher (being a) man is existent/real’. If we regard the grammatical subject, the visual object before us constituting the primary substance of *Topics* or *Categories* as being the *res* in the sense discussed by Professor Lloyd, then most veritably ὁ <τίς> φιλόσοφος expresses a *particular* form, or in my view an *essential* form, which is grammatically in the subject and thus conceptually *in re*. On the other hand the predicate universal which is the conceptual form of classifying recollection constituting secondary substance in *Topics* or *Categories* is stated *after* the subject and is thus *post rem* linguistically as much as it is conceptually so. Thus a noun stated in the *A + I* part of the predication formula is *in re*, whilst one stated in the *II* part of the formula is stated *post rem*.

A further interesting issue is the generalising use of the article in Greek as it affects this enquiry. If we say ὁ <τίς> ἄνθρωπος λευκός we mean ‘the (particular) man (is) white’. But if we say ὁ ἄνθρωπος ζώον we do not mean ‘the (particular) man (is) (a) creature’ unless a particular content so enjoins: on its own the clause means ‘Man is a creature/animal’ in a generalised sense. This we might also present by the use of a plural οἱ ἄνθρωποι ζώα—‘men are creatures/animals’. It is for this reason that Aristotle observes at *Categories* 2b7-8 ‘Of second substances form, εἶδος, is more a substance than class, (γένος), for it is closer to the primary substance’. The same fact underlies *Categories* 2b17-19: ‘Form relates to class in the same way as primary substances relate to other things’. Incidentally our visually-based claim that *in re* particular forms can properly be treated also as universals *post rem* can be very neatly confirmed from the viewpoint of *A + I = II* equational predication in the sentence ὁ προσερχόμενος Ἔστιν <έστιν> Σωκράτης: ‘The (man) approaching (is) Socrates’.

Finally then the interweaving of linguistic and visual analyses provides a very useful insight into the relation of ontology, physics, logic and psychology. Aristotle’s conception of logic and ontology owes much to his exploration of the patterns of Greek predication in the works we have examined. On the other hand his theory of God as total actuality and matter as unmodified indefinable potentiality combined with his scheme of the geocentric universe and the theory of imagination implicit in his treatise *De Memoria* to produce a theory of physical ‘form’ as both a timeless unchanging concept acquired *post rem* through the imaginative interlock of observation and rationality and as yet a constantly fluctuating datum of observation of material phenomena whose ‘essence’ was captured by perceiving the object at the moment of its fleeting organic or structural perfection wherein it provided sense information able to feed and stimulate the imagination in
its construction by giving short-lived expression to the finished ‘form’ in *re*.47

Tangible substances then are formed by interaction of essence and matter in time, whilst conceptual substances are formed by the imagination reacting to time and events from a vantage point both inside them and outside them. Thus do I see form and substance in Aristotle.

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47. If Aristotle had wished to defend the plastic arts as well as poetry from the strictures of Plato’s *Republic* he might well have said that sculptors and painters were not running round with a mirror making reflections of the objects of sense; rather they were striving to capture and record the *essence* of such objects as it was momentarily revealed to the trained eye.