THE major difficulty which confronts us in any attempt to reconstruct Anaxagoras' views about the nature of the material world lies not so much in the absence of information as in the problem of reconciling the various doctrines attributed to him by ancient writers. In particular it has been widely held during the present century that Anaxagoras could not possibly have held all of the major views thus attributed to him because their logical relationship to each other is such that the result would be self-contradictory, and self-contradictory in a way that would have been obvious to Anaxagoras himself and to every one else living at the same time as he did. Consequently it is sometimes concluded that it is impossible to recover the true nature of his thought, and more often it has been felt that the problem is to decide which parts of the ancient tradition must be rejected or modified in order to arrive at a possible overall position which he could plausibly have chosen to promulgate. In what follows I wish to argue that these approaches are unsatisfactory and unnecessary because they rest upon a mistake. There is no logical inconsistency between the major doctrines attributed to Anaxagoras in antiquity, and consequently as far as logic is concerned there is no reason why he should not have combined all of

1 The substance of a lecture delivered in the John Rylands Library on Wednesday, the 12th of March 1969.

them in a single coherent theory. Of course it does not follow that he actually did so and what I am offering is perhaps rather prolegomena to the reconstruction of his views than an actual reconstruction. But as, if I am right, the major difficulty that has troubled modern attempts at reconstruction will have been removed, it will at least make it likely that he held the positions actually attributed to him by ancient writers.

The most significant statements about Anaxagoras' doctrines that survive come from Aristotle and from the commentary on Aristotle’s Physics by Simplicius. Although the latter wrote in the sixth century A.D. there is every reason to believe that he had Anaxagoras’ own book available to him when he was writing his commentary. Both Aristotle and Simplicius appear to attribute the following basic positions to Anaxagoras:

1. Nothing comes into being out of nothing. (Fr. 17 DK = Simplicius, In Ar. Phys., 163. 18 ff.; Ar., Phys., 187 a 26 = A 52 DK.) “The Greeks do not hold correct views about coming into existence and being destroyed. For nothing comes into existence nor is it destroyed, but it is compounded and dissolved from things that are. So they would be right to call coming into existence being compounded, and being destroyed being dissolved.” This, following Cornford (1930, p. 30), we may call the Canon of No Becoming.

2. There is no limit to the divisibility of a thing. (Fr. 3 DK = Simplicius, In Ar. Phys., 164. 16, cf. fr. 6; Ar., Phys., 187 b 22 ff., 188 a 2-5.) “Neither is there a smaller part of what is small, but there is always a smaller—for it is impossible that what is should cease to be.” This may be called the principle of Infinite Divisibility.

3. In everything there is always a portion of everything else so that change can be explained by the emerging of what is already there, without the need for any coming into being. (Fr. 11 DK = Simplicius, In Ar. Phys., 164. 22, cf. frs. 4, 6, 12; Ar., Phys., 187 a 36 ff.) “In everything there is a share of everything except of mind, and in some things mind also is present.” This may be called the principle of Universal Mixture.

4. Things are what they are despite the fact that they contain a share of everything else because in some sense they contain a predominance of what they are. (Fr. 12. fin. DK = Simplicius, In Ar. Phys., 157. 4, cf. Ar., Phys., 187 a 36 ff.)

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"Each single thing is and was most plainly those things of which there are most in it."¹

This may be called the principle of Predominance.

5. Things are made of parts which are like one another and are also like the whole. These parts are the elements out of which all things are made, and are what Aristotle calls Homoiomerē. This doctrine does not seem to be referred to in any actual fragment from Anaxagoras' book, and it may be that he never used the term Homoiomerē which is a technical Aristotelian expression. But the doctrine is attributed to him repeatedly and emphatically by both Aristotle and Simplicius. (Cf. Ar., Phys., 187 a 23 ff., De Caelo, 302 a 28 ff., Met., 984 a 11; Simplicius, In Ar. Phys., 460. 4 ff.; Lucretius, i. 830 ff.) This may be called the principle of Homoeomereity.

It looks very much as if we have an actual example² of how Anaxagoras supposed these five principles might be applied, namely bread, which was regarded as actually containing within itself particles of flesh, bones, veins, sinews, hair and all the other constituents of the body. These are extracted and assembled in the process of digestion and it will be convenient to use the example in the discussion which follows. On this view as all things seem to change into all things (if not immediately, at least by stages, cf. Simplicius, In Ar. Phys., 460. 11 ff.) it follows that there is a share of everything in everything else. The world would consist solely of a mixture of its perceivable ingredients and there would be no need for any more ultimate substances or matter out of which it might be constructed. Differentiation would be explained by the principle of Predominance. Even when from bread, for example, various substances had been extracted, Universal Mixture would not be impaired because the residue of the bread might still contain a share of everything else—Universal Mixture—as long as it is remembered that one can always divide it up a little further by the principle of Infinite Divisibility.

Such a theory, however, has been widely labelled impossible and impossible in such a way that Anaxagoras could not have held it. The classical formulation of the problem is due to Cornford and is best expressed in his own words:

¹ Or possibly "Those things of which there are most in something are and were most plainly the single individual thing."

² It is preserved by Aëtius A 46 DK (and so was already in Theophrastus) and by Simplicius (A 45 DK) and is referred to in what there is no reason to doubt is a genuine fragment (fr. 10 DK).
Anaxagoras' theory of matter... rests on two principles which seem flatly to contradict one another. One is the principle of Homoeomereity: A natural substance, such as a piece of gold, consists solely of parts which are like the whole and like one another—every one of them gold and nothing else. The other is: "There is a portion of everything in everything", understood to mean that a piece of gold (or any other substance), so far from containing nothing but gold, contains portions of every other substance in the world. Unless Anaxagoras was extremely muddleheaded, he cannot have propounded a theory which simply consists of this contradiction. One or the other proposition must be reinterpreted so as to bring them into harmony. Some critics attack one, some the other; some try to modify both.¹

In our surviving sources a doctrine of Homoeomereity is first attributed to Anaxagoras by Aristotle. It is accordingly important to ask what it is that Aristotle attributes to Anaxagoras before trying to decide whether his evidence can be accepted or not. The neuter plural adjective ὁμοομερῆ, meaning "like-parted" or something similar, has a fairly frequent application within Aristotle's own system of thought. It is applied to various natural substances, intermediate in range between the four "simple" bodies, earth, air, fire, and water, and compound bodies and entities such as a face which are described as "an-homoeomerous". In this intermediate range come metals, wood and bark, bone, flesh, marrow, blood, and so on, all of which in turn are combined into composite bodies such as animals. These intermediate homoeomerous substances are mixtures of earth, air, fire and water. Earth, air, fire and water might seem to be themselves homoeomerous and it is clear that Aristotle did so regard them when occurring in the visible world around us, as in fire or air (Top., 135 a 24; Met., 992 a 7). The term was less frequently applied to earth, air, fire and water as elements,² possibly because they are further analysable into opposite qualities, and it does seem to be the case that in general within Aristotle's own system the term Homoeomerous has a restricted

¹ Class. Quart., xxiv (1930), 16.
² See Met., 1014 a 30-31 and De Caelo, 302 b 10-20, and G. A. Seeck, Ueber die Elemente an der Kosmologie des Aristoteles (Munich, 1964), pp. 67-74, 82-86. The situation is complicated by the application of the term "simple" (ἀπλά) to the ὁμοομερῆ as well as to the four elements, see De Part. An., 647 a 1 and by the apparent withdrawal of the term ἀπλά from the elements in De Gen. Corr., 330 b 21-30 on which see W. J. Verdenius and J. H. Waszink, Aristotle on Coming-to-be and Passing Away, 2nd edn. (Leiden, 1968), pp. 54-55.
Since the term Homoeomerē has such an application within the system of Aristotle's own thought, it is natural and reasonable to suppose that when he uses the expression in connection with the theories of Anaxagoras he is not altering the sense of the word, and it has been argued that he means us to understand that for Anaxagoras the term applied either to the same restricted range of substances or at least to a similarly restricted range of biological substances. This is neither necessary nor likely. When a thinker applies one of his own technical terms to the system of another thinker in order to criticize his views it is usually the connotation rather than the denotation of the term that is in question. Fortunately Aristotle himself has explained clearly and precisely exactly what is the connotation in this case: Homoeomerē are substances like bone, flesh, and marrow and anything else of which the part bears the same name as the whole— ὃν ἐκάστον συνώνυμον τὸ μέρος ἐστίν (De Gen. Corr., 314 a 20 = A 46 DK). In other words, Homoeomerē are things with parts like each other and like the whole. This is the meaning of the term for Aristotle and this is its connotation. Naturally it will denote many different things and substances, all of which will exhibit the characteristic of having parts like one another and like the whole. Aristotle’s own example is flesh contrasted with a face—divide flesh and the parts consist of flesh, divide a face and the parts do not consist of faces. But flesh is only an example of what is homoeomerous—it is one of the things denoted by the term but it does not express its connotation.

With this distinction in mind—the distinction between connotation and denotation—I would now like to turn to the passages where Aristotle attributes homoeomerē to Anaxagoras. In each case Aristotle attributes to Anaxagoras a doctrine of Homoeomerē without restriction to any particular group of substances such as biological tissues. When Aristotle says that for Anaxagoras all things have Homoeomerē as their elements he means that they are built up out of parts like one another and

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1 See, e.g. Kirk and Raven, p. 387.
2 So Peck.
like the whole—so if it be diamonds these are constituted of diamond particles, gold of gold particles, bread of bread particles, and so on.

The first passage comes from the *De Caelo* (302 a 28 b 5 = A 43 DK) and may be translated as follows:

Anaxagoras speaks about the elements in a way opposite to Empedocles. For Empedocles says that fire and earth and the rest of the list are the elements of bodies and all things are made from these. But Anaxagoras says the opposite. For he holds that the Homoeomeries are the elements (I mean by Homoeomeries things like flesh and bone and each and everything of that kind), and air and fire he maintains are mixtures of these and all the other seeds. For each of these two, air and fire, consists of the homoeomeries, being unseen, all massed together. So also all things come into existence from these. For he gives the same name to fire and to Aether.

The main point made here is that for Empedocles all things come from the four Empedoclean elements, earth, air, fire and water. For Anaxagoras these four are not elements but are mixtures like everything else. So he takes the opposite view from Empedocles by supposing that all things, including earth, air, fire and water, come into being out of homoeomeries. This is clearly the point of the statements at the end—"For each of these two, air and water, consists of the homoeomeries being unseen, all massed together. So also all things come into existence from these." Here, "these" must be the things out of which air and fire are also made. But all things cannot be made merely out of the homoeomeries of air and fire as in that case they would simply be made out of air and fire¹ and there would be no opposition between Empedocles and Anaxagoras. No. Air and fire are made out of their own homoeomeries and other things are made out of parts homoeomerous with themselves.

There can thus be no justification for the attempt to interpret Aristotle as saying that all things are made of air and fire, still less for supposing that he means all things are made only from biological substances such as flesh and bone. These when mentioned earlier were given as examples of the application of the term Homoeomerê and so they express its denotation, not its connotation. By the universal mixture principle it is true all

¹ As, e.g. Guthrie (Loeb trans., 1939), *History of Greek Philosophy*, ii (1965), 328; Lanza, 67, 77; Raven in Kirk and Raven, p. 384; Peck, *C.Q.* (1931), p. 115.
Homoeomeria do contain shares of everything else, and so of biological as well as other substances, but this is not why they are called homoeomeria. They are called homoeomeria in each case because they are like each other and are like the specific whole that they constitute. The passage was so understood by Simplicius (In Ar. De Caelo, 603. 26) and he must be right. ¹

The same comparison between Empedocles and Anaxagoras is found in a number of other Aristotelian passages. In De Gen. et Corr., 314 a 18 we are told that "Anaxagoras makes the Homoeomeria elements, for example, bone, flesh, marrow and the rest of which the part has the same name as the whole". Once again it is clear that Aristotle is giving illustrative examples of Homoeomerai before proceeding, on this occasion only, to state the connotation of the term. A little further on he continues (a 24 ff.): "Anaxagoras and his followers clearly speak in opposite terms to Empedocles and his followers. For Empedocles says that Fire, Water, Air and Earth are four elements and are simple, rather than flesh and bone and similar things among the Homoeomerai, whereas Anaxagoras and his followers assert that these are simple and are elements but that earth, fire, water and air are composite; for each of them is, they say, a general seed-mixture (panspermia) of these i.e. of Homoeomerai." ² Once again we must be dealing with the reduction of the Empedoclean elements to more fundamental Homoeomerai. These Homoeomerai are not a limited range of homoeomerous Aristotelian substances such as flesh and bone—these substances are only mentioned as examples—notice once again the added phrase "and similar things". Earth, fire, water and air are themselves composed of the complete range of Homoeomerai and so contain not

¹ Themistius, In Ar. de Caelo, 174, 13 ff. seems to give a different interpretation from mine to the sentence "air and fire are mixtures of these and all the other seeds" by supposing that air and fire are mixtures of the homoeomeria and all the other seeds. But even this does not involve taking the homoeomeria in a restricted or specifically Aristotelian sense. His meaning is that air consists of its own homoeomeria, i.e. air-particles and also the whole infinite range of other particles.

² For a demonstration of the correctness of this interpretation as against Cherniss, Aristotle's Criticism of the Presocratics, p. 108, n. 444, and Forster's translation in the Loeb Series see Verdenius and Waszink, op. cit. p. 1.
only Homoeomerê of earth, fire, water and air, i.e. of themselves but also Homoeomerê of everything else (the principle of Universal Mixture). It is in this sense that they are each of them a "general seed-mixture".

I turn next to a passage from the *Metaphysics* (984 a 11 = DK A 43) where the central part can be translated and has been translated by different scholars in two rather different ways, either of which accords excellently with the overall meaning which I believe the passage must have:

Anaxagoræ of Clazomenæ who was earlier in age than Empedocles but was later than him in his works, declares that the principles of things are infinite. For virtually all the Homoeomerê come into existence and are destroyed, he says, in the same way as water or fire, that is by accretion and separation only, but otherwise do not come into existence nor are they destroyed but they continue for ever.

Here the majority of modern interpreters take the passage as I have translated it above.¹ This fits well with the Greek. But the occurrence of strikingly similar phraseology in the passages already discussed suggests that a different translation may be the right one,² namely: For virtually all the Homoeomerê (such as water or fire) come into existence and are destroyed, he says, by accretion and separation only, but otherwise do not come into existence nor are they destroyed but they continue for ever.³

Whichever translation be preferred, it makes no difference—Aristotle is speaking not of a restricted range of things but of all things. All things are composed of Homoeomerê by combination—the exception is probably Nous (mind) which because it has to function as a cosmic prime mover is itself always in existence.

There is, however, one passage in Aristotle which at first sight may seem to suggest that Aristotle is attributing a rather different

¹ So, e.g. Burnet, *Early Greek Philosophy*⁴, p. 265, n. 2; Cornford (1930), p. 27, n. 2; Ross, Commentary, ad loc.; Guthrie, ii. 293, n. 2, 327. For the controversy about the meaning of the first sentence and a different view which seems to me mistaken see D. O'Brien in *J.H.S.*, lxxviii (1968), 97-105.

² So Ross in the second edition of his English translation of the *Metaphysics* (1928).

³ It looks as if Simplicius, *In Ar. Phys.*, 27. 2 ff. = A 41 DK took the passage in this second way, although we cannot be certain that he is not speaking generally since he adds "gold" to the examples of water and fire.
view to Anaxagoras from that so far described, namely Physics, 187 a 24-26. Once again we are concerned with the contrast between Empedocles and Anaxagoras and Aristotle says that whereas Empedocles introduced only the standard elements, Anaxagoras introduced infinite elements (or an infinite number of elements) namely the Homoeomerē and the Opposites. The addition of the phrase “and the Opposites” seems to suggest that the Homoeomerē alone do not exhaust the list of Anaxagoras’ elements but that the Opposites functioned alongside them as some sort of additional elements out of which things are made. And if this were so it would suggest that perhaps after all the range of Homoeomerē was more limited for Anaxagoras than I have been suggesting Aristotle supposed. Simplicius in discussing this passage of Aristotle tells us¹ that Alexander of Aphrodisias stated that the Opposites were included as well as all other properties among the homoeomeries, and that he referred to an earlier passage in Aristotle’s Physics (184 b 20-22) where Aristotle suggested that if there are an unlimited number of sources for things they must differ in shape and form, or even be of contrasted nature as well. In other words somehow or other opposite qualities must be actually in the Homoeomerē. In fact Anaxagoras himself had clearly referred to such opposite qualities in fr. 4 where we have an actual quotation preserved by Simplicius. According to this when all things were together before the initial separating out which was the first stage in the formation of our world the mixture of all things meant that there was no colour at all. This mixture involved the wet and the dry, the hot and the cold, the light and the dark, abundance of earth and an infinite number of seeds all dissimilar.

Now this passage is clearly concerned with the presence of all qualities and all substances in the original universal mixture which preceded the formation of the world. Among these qualities there must be included the opposite qualities such as the hot and the cold and the wet and the dry because so many of the Presocratics who preceded Anaxagoras had treated these opposites as primary constituents of the Universe. Anaxagoras has

¹ In Ar. Phys., 155. 4-205. Similarly Themistius, In Ar. Phys., 2. 30, 13. 19 ff., 17. 27.
got to have them in his mixture to make it clear that they like everything else were already there and did not originate or emerge from elsewhere. But he lists them as examples of "all the things" which are present in the mixture, not as something additional to these things. So we need not doubt that when Aristotle in the Physics speaks of the homoeomeries and the Opposites he means "the homoeomeries including the Opposites", or "the homoeomeries and in particular the Opposites", especially as for Aristotle as well as for the earlier Presocratics the Opposites had a special position within his own system. This is probably what Aristotle had in mind.

I have not attempted to deal with every detail and every problem raised by the passages from Aristotle which I have been discussing. But I hope one point is now sufficiently clear. Aristotle is attributing a doctrine of Homoemere as elements to Anaxagoras. Indeed he is saying that for Anaxagoras these were the only elements. And he is not suggesting any restricted meaning for Homoeomere, but is attributing to Anaxagoras the general principle of Homoeomereity.

The post-Aristotelian tradition, above all the discussions in Simplicius, are even clearer. In fact the tradition that Anaxagoras held the principle of Homoeomereity as part of his physical theory is just about as clear as one could possibly ask for. Why then has it ever been doubted that Anaxagoras in fact held such a doctrine? The reason is simple. It springs from the belief that Anaxagoras could not possibly have held such a doctrine because if he had done so he would have fallen into blatantly and hopeless contradictions—contradictions so obvious that he must have seen them and once he had seen them he must have abandoned the doctrine of Homoeomere.

If this were true it would be a serious objection indeed. But in fact this whole way of looking at the matter is mistaken. There is no logical contradiction involved in holding all five of the principles attributed to Anaxagoras—the principle of No Becoming, the principle of Infinite Divisibility, the principle of Universal Mixture, the principle of Predominance and the principle of Homoeomereity. It is all a modern misunderstanding and once it is cleared away there is no difficulty in accepting the Aristotelian
account of Anaxagoras' views as correct. It will be convenient to take the points one by one.

1. Cornford maintained that there was a flat contradiction between the principle of Homoeomerieity and the principle of Universal Mixture. A natural substance cannot consist solely of parts like one another and like the whole and at the same time consist of portions of every other substance in the world. That Cornford was mistaken can be demonstrated by a homely example. Let us suppose that the contents of a cup of coffee consists of a combination of coffee-bean extracts and water. The contents are then a mixture. Yet the contents are homoeomericous in the sense that they can be divided into two half cups and these into still smaller portions all of which are like each other and like the whole contents. There is no logical inconsistency between the principle of Homoeomereity and the principle of mixture in this case. It is true that I have posited a mixture of two things—coffee essences and water, but there is no logical reason why the number of ingredients should not be increased indefinitely to produce Universal Mixture. It is true that we suppose that if the process of separation is carried far enough and we arrive at small enough parts the mixture will break down into its separate constituents. But this is not something which logic requires us to believe—we believe it on other grounds and there is no logical objection to extending the combination of the principles of Homoeomereity and Universal Mixture down to the Infinitesimal.

2. A second objection has taken the form of arguing that given Homoeomereity and Universal Mixture both would very soon break down as a result of extraction. It is all very well to say that bread contains particles of blood, bone, hair and skin, but the process of extraction will soon produce a residue that no longer exhibits Universal Mixture. Indeed very soon we will have numerous substances which as the result of extraction would not contain a portion of everything else. So once again the analysis becomes untenable for what seem to be essentially logical reasons. But this objection also is unsound. It would have weight if substances consisted of a limited and so finite

1 Bailey, p. 538.
number of parts from which one could extract specific-substance parts until the supply of the specific substance was exhausted, e.g. by taking all the blood out of bread. But for Anaxagoras substances are infinitely divisible so that they all have an infinite number of parts. Consequently no matter what quantity is extracted short of the whole there remains a substance with an infinite number of parts. Given an infinite number of parts there is no logical objection to the survival of Universal Mixture indefinitely.

3. A further objection might maintain that if you combine Universal Mixture with Homoeomereity you cannot also hold to the principle of Predominance. If gold is really a mixture of gold and everything else, you may still on the analogy of the contents of a cup of coffee be able to say that it is none the less Homoeomerous. If you go on to maintain that it is gold because it contains a predominance of gold in it, and each of its parts is gold because they contain a predominance of gold and each of their parts are gold because they contain a predominance of gold, then sooner or later, it is argued, something has to happen. Either you get to a stage when you reach a particle of pure gold and in that case the principle of Universal Mixture breaks down; or else you reach a stage when the proportion of gold to other parts must alter in order to make room for all the other parts needed to maintain universal mixture, and then your principle of Predominance will be threatened and eventually overthrown with the result that you lose the goldness of your gold parts and so lose Homoeomereity of parts in relation to the original lump of gold. Now this objection in one or other of its forms would be true given a finite number of parts. But it is clear that Anaxagoras believed in infinite divisibility and so in an infinite number of parts. Once this is granted the objection evaporates. Moreover, as we would say, a set of numbers extending to infinity may contain within itself a number of other sets each also extending to infinity. Thus we can readily agree that the series of whole numbers can be extended to infinity and within that series the number of even numbers and the number of numbers divisible by ten will each also extend to infinity. But we must not say that one series extended to infinity is greater or lesser in relation
to another such series extending to infinity and this might seem to involve the disappearance of the needed predominance of parts in, e.g. gold when subdivision is carried to infinity. The answer is that when two such series are compared, and the comparison is made at any finite stage in the process of subdivision the original proportions between the two series will still obtain—it is only when subdivision is carried to infinity that the proportions cease to apply. It is not necessary to suppose that in any meaningful sense Anaxagoras anticipated the theory of sets—it is sufficient for the present argument simply to observe that there is in fact no logical objection to combining the three principles of Universal Mixture, Homoeomereity and Predominance at any finite stage in the process of subdivision.¹

4. A different version of the same objection however would maintain that the principle of Predominance itself requires the existence of pure parts and so requires us to suppose that in the process of subdivision we must come to a stage where Universal Mixture is excluded. Gold based on a predominance of gold implies of necessity constituent gold which is wholly gold and is not in turn based on a predominance of gold. The same argument would apply to the minority constituents of gold, e.g. blood, if these also are constituted only by a predominance of parts of themselves. The need to avoid an infinite regress of this kind has been the starting point for a long series of theories² all positing one kind or another of unmixed elemental substances or entities. Here the question we have to ask ourselves is whether a regress of this kind is logically vicious. It is true to say that we cannot give an account of substances such as gold by analysing them into “a predominance of gold” and so on to infinity. In

¹ Less satisfactory, I think, is the approach to this question by T. G. Sinnige, *Matter and Infinity in the Presocratic Schools and Plato* (Assen, 1968), pp. 126-37, in that he seems to suggest that one infinite quantity can be greater than another. But he points out that in fr. 6 DK Anaxagoras was able to say “there are as many parts in number in the great and the small”, so apparently recognizing with Zeno fr. 3 DK that a set taken as a whole cannot be larger or smaller than itself. From this it would follow that the infinitely large or infinitely small are not unequal.

such a case we have failed to give either a satisfactory definition or a satisfactory account of gold because we have included the term gold in our attempts at definition and description. But it is not an objection to any position maintained by Anaxagoras as he had no reason to attempt a definition or a description of gold in this way. He is concerned with change and not with description or definition. Provided perceived gold can be recognized it can be treated as primary, not derivative, not as something to be built up from smaller particles, but as a starting point for analysis. The objection that you would never get gold without pure gold to start with would not be an objection to trouble Anaxagoras.

None the less from the point of view of logic the objection would seem to be sound. Predominance must be predominance of something over something else, of A over not-A, and A cannot itself consist of predominance and nothing more than mere predominance. It is this that has led to the widespread conclusion that Anaxagoras must have assumed the emergence of simple substances at some definite stage in the process of subdivision. But if we ask at what stage, and think of the example of coffee or of bread, or any other mixture we realize that there is no point at which further subdivision cannot occur—there is no least part but always a lesser (fr. 3 DK)—and the results of subdivision can always be two further mixed parts just as was the case with the first subdivision of a cup of coffee into two half cupfuls. It follows that the point at which in logic pure substances must be reached in subdivision is nowhere short of the infinitesimal, in other words a point which is never reached by any finite series of subdivisions. Consequently the logical requirement for pure substances as a condition of predominance can not be used as an argument to show that Anaxagoras must have posited such substances at a finite stage in the analysis of phenomenal objects.¹

It follows that there are no fundamental objections based on any logical difficulties to the supposition that Anaxagoras' view of the material world rested upon all five of the principles attributed to him in the ancient tradition, the Canon of No

¹ Nor is it correct to hold as Stokes does (p. 15) that such a pure substance must occupy a finite portion of space.
ANAXAGORAS BEFORE ARISTOTLE

Becoming, the principles of Infinite Divisibility, Universal Mixture, Predominance and Homoeomereity. To show that it actually did so would require a separate investigation, but the removal of supposed but unreal objections can at least clear the way. Whereas Aristotle contributed to the history of philosophy the concept of matter as a neutral quality-less substrate which can never actually exist apart, and which consequently we never perceive as such, what was probably Anaxagoras’ way of looking at things had affinities rather with what would now be called phenomenalism. According to a phenomenalist approach to the world a material object would be regarded not as a mysterious something “behind” the appearances which we experience in sensation but as simply the totality of all the actual and possible appearances occurring when the object is present to the senses. Both the earlier Presocratics and Aristotle were attempting to explain the phenomenal world by referring it to entities and concepts which were not themselves visibly present in what was perceived. The most sustained and radical attempt to avoid doing this—to explain the perceived world as completely as possible without reference to anything beyond itself—would seem to be found in the phenomenal physics of Anaxagoras.