

CAMBRIDGE PHILOLOGICAL SOCIETY

Supplementary Volume no. 10

ARISTOTLE AND THE STOICS

F. H. SANDBACH

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PREFACE

In this essay I examine the widely-held view that Stoicism, being subsequent to Aristotle, must be explained as a development from Aristotelianism. I hope that I have shown this to be insecurely founded at the least. Paucity of information about the philosophers of the late fourth and early third centuries often makes it impossible to speak with certainty, but the evidence that we have seems to indicate that in general the Stoics neither read, nor learned the contents of, the works contained in our *Corpus Aristotelicum*. Some leading scholars have remarked upon the apparent neglect of these works after the time of Theophrastus: Ingemar Düring, Paul Moraux, and Fritz Wehrli spring to mind. It will appear that even before that man's death they did not attract the attention of the Stoics.

In the following pages some scholars of deservedly high reputation will be found occasionally to have slipped into errors more characteristic of lesser men. It has given me little pleasure to record these, and it is only right to express my great admiration for these authors. But I hope that it was useful to notice their mistakes because they provide a warning against the dangers involved in trusting to one's memory or accepting others' statements without verification from the ancient texts themselves. If such failings mar my own work, as they may well do, I do not seek to excuse them.

In casting doubt on the influence of Aristotle, I do not wish to suggest that to compare the views of Aristotle and later philosophers is not a valuable enterprise. On the contrary, by directing attention to dissimilarities it may lead to a clearer apprehension of the intentions and the meaning, the strength and the weaknesses of the arguments used by both parties. This is urged by Myles Burnyeat, who read an earlier version of this essay and to whom I owe a heavy debt of gratitude for his corrections, his indication of omissions, his suggestions, and above all his continued interest and encouragement. I also gratefully acknowledge the help and encouragement that I have received from John Easterling and from David Sedley, who gave me many valuable detailed notes. None of these friends must be understood to be convinced by all that I here maintain.

The financial assistance of Trinity College, Cambridge, facilitated the publication of this essay by the Cambridge Philological Society. It gives me great pleasure to record my thanks for my College's generous help.

ABBREVIATIONS

DK	Diels-Kranz, <i>Fragmente der Vorsokratiker</i>
Do.x	Diels, <i>Do.xographi Graeci</i>
EE	Aristotle, <i>Ethica Eudemia</i>
EN	Aristotle, <i>Ethica Nicomachea</i>
F.Gr.Hist.	Jacoby, <i>Fragmenta Graecorum Historicorum</i>
LSJ	Liddell-Scott-Jones, <i>A Greek-English Lexicon</i>
MM	Aristotle (?), <i>Magna Moralia</i>
RE	Pauly-Wissowa, <i>Realencyclopädie der classischen Altertumswissenschaft</i>
SIG	Dittenberger, <i>Sylloge Inscriptionum Graecarum</i>
SVF	von Arnim, <i>Stoicorum Veterum Fragmenta</i>
TGL	Stephanus-Dindorf, <i>Thesaurus Graecae linguae</i>

Any abbreviations for modern journals are those used by *L'Année philologique*

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I. INTRODUCTION

In *The Stoics* (1975), speaking of the influences on Zeno's philosophy, I wrote as follows: 'Many modern writers try to find a connection with Aristotle, but this I believe to be a mistake, due to the tempting supposition that he loomed as large to the generation that succeeded him as he does to us. There is much to suggest that those works of his that are read to-day, works mostly not prepared for publication, sometimes barely intelligible notes, were for the most part not known until they were edited in the first century B.C. There may have been private copies made of some for pupils, but they do not in general seem to have been in the book-trade or to have been part of what philosophers might be expected to read' (21-2). In this paper I shall expand and attempt to confirm this judgment.

But first it may be desirable to recall the fact that Aristotle did write some works, now lost, of which some were dialogues, intended for a wider public than the students who were attached to his school. Later scholars, and probably Aristotle himself,¹ referred to these as 'exoteric'. By their very nature they were destined for 'publication', a word of which the meaning is considered below. Many are known to have been much read. But it should be observed that 'exoteric' and 'published' are not synonymous: an accident might prevent the publication of a book intended to be popular; a work not completed or likely to have a very limited audience might nevertheless be 'published', that is made available.

The surviving works, which constitute our *Corpus Aristotelicum*, are not all of a kind, but many of them are clearly connected with courses of lectures given by Aristotle. Modern experience has made us familiar with the way in which lectures become books, and it may be right to see that process at work in some of his writings. Others may even have been composed with book-form in mind from the first. But they are all or almost all primarily intended for his pupils, and I shall refer to them as 'school-works'.

Even a modern philosopher's influence may be exerted in two ways, by his writings and by word of mouth: he may have pupils or other associates who hear him talk and who may pass his views on again to their friends and acquaintances by word of mouth or to a wider circle by writing books or articles. To-day we are so accustomed to the book and our knowledge of the ancient philosophers is so predominantly derived from books that there is a temptation to think of them also as students of the writings of their predecessors. But in ancient Greece there was more talking and less reading. No-one doubts the decisive influence on the course of philosophy exerted by Socrates and by Carneades; yet neither of these men published a line. The immediate impact they made was by oral means; later those who had heard them committed some of their ideas to papyrus.

But although some philosophers were not writers, it is improbable that any were not talkers. Certainly Aristotle must have used his voice as well as his pen. When we try to estimate his influence upon the Stoics, orally transmitted influence must not

be excluded. He was dead when Zeno came to Athens in 312/11 B.C., but pupils were still alive and active, notably Theophrastus, who survived at least until 288/7 B.C. They and indeed, if Aristotle gave public lectures,² men who were not members of his circle may have reported his views. One must therefore bear in mind not only his writings, but also what may have been remembered of his thought.

One must not assume, however, that interest in what he had been expounding during the dozen years he had been able to spend in Athens after 334 B.C. was as great as it deserved to be. His notorious connexions with Macedon made him unpopular, so much so that on the death of Alexander he was accused of impiety and felt it prudent to retire to Chalcis in Euboea, whence he was not to return.³ Political considerations ought not to affect the attention paid to a philosopher; unfortunately they are not always neglected. Hence we may imagine that among his contemporaries desire to discover what he was saying was limited.⁴ Even among the Academics there is, for what it is worth, no sign that Speusippus or Xenocrates paid him any attention, although he himself criticised them.⁵

Theophrastus, who had retired with Aristotle to Chalcis, returned about 317 to an Athens where a pro-Macedonian regime had been installed. He was granted permission to buy a house, perhaps near the Lyceum, like that of Isocrates (Vit. anon. 108-9), and there founded or re-founded the Peripatetic school.⁶ He may have talked about Aristotle, but his prime interest was in the prosecution of his own studies and no doubt in the encouragement of those of his pupils.⁷ There is no prior reason for supposing him to have arranged the publication of Aristotle's unpublished writings.⁸ He was not the guardian of an orthodox tradition, but an independent thinker, who was critical of some Aristotelian ideas, particularly of the pervasive teleology. He had no cause for disseminating unfinished and sometimes unconvincing work by his master. On the other hand there can be no doubt that Aristotelian influence was prominent in his own teaching and writing.

Fortunately there is no need here to examine the truth of the story that Neleus, to whom Theophrastus bequeathed 'all his books', carried them off to Scepsis in the Troad, where they lay unknown until re-discovered in the early part of the first century B.C., and that the legacy included the books of Aristotle, who had left them to Theophrastus.⁹ The enquiry is unnecessary because it may be argued that copies of all the original works of Aristotle must have been made, to be preserved in the library of the Peripatos.¹⁰ In the absence of a catalogue of that library, this must be a matter of faith, but it cannot be disproved. Yet Strabo and Plutarch believed (13.1.54; *Sulla* 26) that the later Peripatetics had access to only a few of Aristotle's writings and those (says Strabo) mainly the exoteric.¹¹ Of course these authors may have known only that the school-works were not consulted, and hastily inferred that they could not be. A book in a library is not necessarily a book that is read.

But all this is irrelevant, because Zeno formed his philosophy at a time when Theophrastus was still alive and the books undoubtedly in his possession. The question to be asked is not whether the books were in Athens, but what evidence is

there that any of the works of our Corpus Aristotelicum were known, directly or indirectly, to the philosophers of the third century B.C. outside the school of Theophrastus.

That the exoteric and any other published works were available to them must be granted. Yet even here care is needed. The first public library in Athens was established by Ptolemy Philopator some time after 221 B.C. Before that a book had to be bought, or borrowed from a friend. There were booksellers, but little is known about what stock they carried. 'Publication' is a word which may mislead. The situation at Athens at the end of the fourth century must have been very unlike that which prevails to-day. An author or bookseller would advertise his wares by reading extracts aloud (Diog. Laert. 7.2). He may have had other copies ready for sale to customers, since an export trade in books (Xen. *Anab.* 7.5.14) implies speculative production in hope of buyers, as does Aristotle's report that the booksellers carried around many bundles of Isocratean forensic speeches (Dion. Hal. *De Isocrate* 18). It may be guessed, however, that a bookseller would often possess but a single copy of a book, which he would cause to be reproduced only on receipt of an order. Further there were probably works of which their authors were willing or even eager to allow knowledge, but which were not included in any bookseller's stock. For the Alexandrians, writes E. G. Turner, *Greek Papyri* 112, the word ἔκδοσις, 'edition', 'means that the work in question was available for consultation and presumably for copying, "published" in the sense that its existence was known and that it was "issued" to readers'. It can also be presumed that an author might allow friends or pupils to copy writings which he did not consider suitable for 'publication', whatever his reason for not allowing free circulation.¹²

The conclusion must be that whereas 'publication' made access to a book possible, it did not necessarily make it easy. *A fortiori* access to an unpublished book would in theory be possible, but in practice depend upon knowledge of it and its whereabouts, a desire to see it, and the willingness of its owner to make it available.

A further caveat may be desirable. If copies of one work by some author were comparatively numerous, it does not follow that all were equally available, an obvious consideration but one that is sometimes disregarded. As F. Solmsen says, (1981) 104, 'the acquisition (or possession) of Plato's works by a head of the school [i.e. by Arcesilaus, Diog. Laert. 4.32] would hardly be noteworthy unless copies of the complete works were either a rarity or uncommonly expensive'.

The question of Aristotelian influence is bedevilled by the scantiness of the remains of the third-century philosophers, among whom Zeno and Epicurus may be included, although they began to teach in the fourth century. Yet it is important to see what evidence can be had from what little is preserved, and a beginning may be made by reviewing explicit mentions of Aristotle by non-Peripatetic authors, leaving those by Stoics to the end.

Epicurus and the Epicureans

(i) A fragment of Philodemus (Pap. Herc. 1005) partially preserves a few words from a letter of Epicurus. They are often quoted, since they provide the only explicit evidence for knowledge of Aristotelian school-works outside the Peripatos in the earlier third century. In the latest printed edition, that of F. Sbordone, *Philodemus adversus [Sophistas]* (Naples 1947) 75, reprinted by G. Arrighetti, *Epicuro, opere* 435 (ed. 2, 473), they run

οἷ] δαμ[εν
 εἶναι] πισ [τ]ο[ν] Κράτη[τ]ος
 καὶ Ἄρ]ιστίππου τὰς πε-
 ρὶ τινῶν τοῦ Πλάτωνος
 διατριβ[ῶ]ς], καὶ Ἄριστοτέ-
 λους τ'] ἀναλυτικά καὶ
 τὰ περὶ] φύσεως, ὅσα περ
 ἐκλέγ]ομεν.

The sentence ended there and there is no clue to the context. Modern scholars have guessed what it was and their guesses are sometimes treated as facts.

There is even less to go on than Sbordone's text suggests. In the first line οἷδαμεν is a form Epicurus is not known to have used; if the reading of the MS B is accepted, he has the correct Attic ἴσμεν at *Ep. Herod.* 60.2. Moreover Professor A. A. Long, who has kindly examined the papyrus for me, thinks that Sbordone's δ belongs to a different layer. In line 2, although Arrighetti prints πισ[τ]ό[ν], he regards it as 'non troppo convincente'. Long could see before κ nothing but traces of which he will say no more than that they are not incompatible with πιστόν. It is surprising that the final words are almost universally taken to mean 'Aristotle's *Analytics* and his *Physics*, so far as we make extracts from them'. The position of τε between Ἄριστοτέλους and ἀναλυτικά implies that the following work must be by some other author. One might supplement not ἐκλέγομεν but ἐγράφομεν: 'Aristotle's *Analytics* and all that I have been writing about nature'.

I do not suggest this with any confidence, for τε is not a necessary supplement; it would be possible to write τ]ἀναλυτικά, i.e. τὰ ἀναλυτικά, which may be what

scholars suppose themselves to translate. But it is clear from Sbordone's own drawing (72), from a rather less informative one in *Herculanensium voluminum quae supersunt collectio altera*, tomus primus (Naples 1862) 143, and from Professor Long's transcript¹³

...[.]κρατ..οσ
 πο..ασπε
 υπλατωνοσ
 καιαριστοτε 5
 αναλυτικακαι
 φυσεωσσοσαπερ
 ε....ομεν επιδευβου

that the supplement in line 6 is too short. To fill the space either λους τὰ τ', as W. Croenert has it in *Kolotes und Menedemos* (Leipzig 1906) 174, or λους τε τ' is needed. I see no inevitable reason for excluding the latter possibility, which would restrict the Aristotelian work mentioned to the *Analytics*, perhaps even to one or the other of the *Prior* or *Posterior*. But assuming the former alternative to be correct, Epicurus knew of some work by Aristotle, which he calls τὰ περὶ φύσεως. This is generally taken to be the *Physics*. But although Aristotle several times refers to the *Physics* by the words τὰ περὶ φύσεως he also uses the phrase to refer to *de caelo* (*Met.* 989 a 24).¹⁴ In Diogenes Laertius' list of Aristotle's books (see below p. 11) περὶ φύσεως is in three volumes, and the title, if it does not indicate *de caelo* I-III, may refer to a part of the *Physics*, probably II-IV. So we already have two alternatives to inferring that Epicurus knew of the complete *Physics*; he may have known of a part or he may have known of *de caelo*. There is yet a fourth possibility, namely that he was indicating περὶ φιλοσοφίας, a published work of which a large part was concerned with offering an alternative to Plato's *Timaeus*, and might therefore be said to be περὶ φύσεως.

The conclusion must be that this scrap of Epicurus' letter proves very little and will not establish many of the claims that have been made for it.¹⁵ But there may of course be other evidence that will demonstrate his knowledge of school-works other than the *Analytics*.¹⁶

In a letter 'to the philosophers in Mitylene' (fr. 171 Usener, 94 Arrighetti¹, 102 Arrighetti²), usually held to be authentic, Epicurus said that Aristotle, after eating his way through his patrimony, turned to soldiering and being unsuccessful at that came to drug-selling, and that then, Plato's *peripatos* having been thrown open, he introduced himself there and attended the discussions, being possessed of some natural ability, and little by little arrived at the state now under attention (εἰς τὴν θεωρουμένην ἕξ<iv> ἤλθεν) (Athenaeus 8.354 b, cf. Diog. Laert. 10.8, Aristocles apud Euseb. *Praep. Ev.* 15.2.791a).¹⁷ Clearly Epicurus, although repeating irresponsible scandal about Aristotle's biography, knew that Aristotle had some

importance. But the exoteric works and current repute would be enough to account for that. The passage provides no evidence for knowledge of the school-works. But Epicurus knew something of Theophrastus, since he wrote at least two books against him (Plutarch *adv. Colotem* 1110 C), in the course of which he attacked his views on colour, perhaps *de sensu* 73-82.¹⁸

Mentions of Aristotle by early Epicureans are recorded here and there.

(ii) *Colotes*

According to Plutarch, *adv. Colotem* 1115 A, Colotes, who was a pupil of Epicurus, wrote that Aristotle, Xenocrates, Theophrastus, and all the Peripatetics followed 'these doctrines of Plato'. 'These doctrines' appear to be the doctrine of Forms and the closely associated distinction between the unchanging objects of intellect and the mutable world of sensation. Colotes' assertion, if correctly reported, is a travesty of truth, but not one that could have been made if the works of Aristotle and of Theophrastus had been widely known.¹⁹ But perhaps he was misrepresented, for one would suppose that *περὶ φιλοσοφίας*, which attacked the doctrine of Forms, was still familiar at the time he wrote. Yet an echo of Colotes may be detected in Diogenes of Oenoanda, frag. 4 col. I.13-11.8, 'Ἀριστοτέλης οὖν καὶ οἱ τὸν αὐτὸν τῷ Ἀριστοτέλει ἐμβαίνοντες περίπατον οὐδὲν ἐπίστητόν φασιν εἶναι · ῥεῖν γὰρ αἰεὶ τὰ πράγματα καὶ δι' ὀξύτητα τῆς ῥεύσεως τὴν ἡμετέραν ἐκφεύγειν ἀντίληψιν.²⁰

The doctrine of Forms seems to have been ascribed to Aristotle by Cephisodorus also (see p. 9).

(iii) *Metrodorus*

Pap. Herc. 1111 fr. 24 has

τῶν Μητ[ροδώρου οἴ]ον ἐν [τῷ πρὸς τὸν] Εὐθύφρο[να κἄν τῷ] πρὸς Ἀρ[

This was supplemented by Croenert as Ἀριστοτέλη (*Kolotes und Menedemos* 24), but other possibilities exist, e.g. Ἀρίστωνα (Koerte, probably too short) or Ἀρίστιππον. Even if Ἀριστοτέλη is right, his exoteric works or his private life may be in question.

(iv) *Polyaenus*

Either Polyaeus or his pupil Hermarchus wrote a work πρὸς Ἀριστοτέλην (Diog. Laert. 10.25). There is no clue to its contents or to what he knew of Aristotle.

Timon (c.320-230)

Diogenes Laertius quotes lines from Timon's *Silloi* about a large number of

philosophers, in fact about some 28. Usually they refer to some individual and recognisable characteristic. For example Heraclitus is ὄχλολόιδωρος, αἰνικτής. There are 4 lines about Plato, 5 about Zeno the Stoic, 2 about Cleanthes, 2 about Epicurus. But about Aristotle all he quotes, presumably all he could find to quote, is (frag. 36 Diels)

οὐδ' ἄρ' Ἀριστοτέλους εἰκαισύνης ἀλεγεινῆς
Nor of Aristotle's painful frivolity.

Nor is Aristotle alluded to in any fragment of Timon quoted by any other author. εἰκαισύνη is a *hapax*, translated by LSJ as 'thoughtlessness'. The adjective εἰκαῖος can mean 'purposeless' or 'random' or 'hasty' or 'useless'. None of these are ideas we should associate with the school works, nor for that matter with what we know of the exoteric. A tempting conclusion is that Timon did not know much about Aristotle (or about Theophrastus, who does not appear anywhere in his fragments).²¹ He may have been repeating a current opinion, based on ignorance and misrepresentation, since Timaeus, *F.Gr.Hist.* 566 F 156, called Aristotle θρασύν, εὐχερῆ, προπετῆ, 'rash, reckless, precipitate'.

Other philosophers

(i) *Eubulides*

Eubulides, described as an eristic or a dialectic, wrote a book attacking Aristotle. All that is known of its content is recorded by Aristocles in Eusebius, *Praep.Ev.* 15.2.791d, who alleges that Eubulides falsely ascribed to Aristotle some frigid verses about his marriage and friendship with Hermeias, and that he said Aristotle had offended Philip of Macedon, had not been present when Plato died, and had 'destroyed' (διαφθεῖραι) Plato's books.²² K. Döring, *Die Megariker* (Amsterdam 1972) 105, would date this attack to a time before the death of Philip in 335, and although this is an uncertain conclusion, it is consistent with an unreliable tradition that Eubulides taught Demosthenes, whose senior he must have been imagined to be. In any case there is nothing in the story to suggest knowledge of any works of the Corpus.²³

(ii) *Alexinus*

Alexinus, perhaps Eubulides' pupil, in his Ἀπομνημονεύματα or *Memoirs* represented Alexander as rejecting Aristotle's views in a talk with his father Philip (Aristocles in Eusebius, *Praep. Ev.* 15.2.791c).

(iii) *Stilpo*

Stilpo wrote a dialogue entitled Ἀριστοτέλης (Diog. Laert. 2.120), but this Aristotle may have been the Cyrenaic (or Cyrenaean), from whom he attracted two pupils (Diog.Laert. 2.113).

(iv) *Lyco*

Lyco, a Pythagorean, retailed two items of slander about Aristotle's private life, according to Aristocles in Eusebius, *Praep. Ev.* 15.2.792a, and reported that 74 bronze casseroles were found in his boat when he crossed to Chalcis (cf. Diog. Laert. 5.16).

Other writers

It may be convenient to note mentions of Aristotle in other writers of the relevant period, since if they showed knowledge of 'school-works', even more knowledge would be likely among philosophers.

(i) *Timaeus*

Polybius 12.8.4 reports that Timaeus (*F.Gr.Hist.* 566 F 156) had stigmatised Aristotle as θρασύν, εὐχερῆ, προπετῆ (above p. 7). He had also accused him of libelling the Locrians, saying that their colony was composed of runaway slaves, adulterers, and kidnappers. This seems to indicate Timaeus' knowledge of Λοκρῶν Πολιτεία (fr. 547 Rose³), confirmed by Athenaeus 6.264c-d (*F.Gr.Hist.* 566 F 11). He had continued that these charges against the Locrians had been made with such an air of authority that one might have supposed Aristotle to have been a general who had recently defeated the Persians at the Cilician Gates in a pitched battle by his own power, not a hateful sophist (σοφιστής) who had been a late-comer to learning, having just closed his honoured medical practice and bounced his way into every court and camp, a glutton and gourmand also, ἐπὶ στόμα φερόμενον ἐν πᾶσι. Here there are elements of similarity with Epicurus' letter (above p. 5; medicine ~ drug-selling; camp ~ soldiering; late-coming to learning), but the divergences are so great that it is easier to see the two authors as independently drawing on current slander than Timaeus as based on Epicurus' remarks.²⁴ It is a feature of popular attacks that the details vary, while the general line remains. We have here evidence of widespread misconception of Aristotle's life and works.

(ii) *Philochorus*

It has been suggested²⁵ that Philochorus, the great antiquary who was a little younger than Theophrastus and who certainly discussed some biographical details concerning Aristotle (*F.Gr.Hist.* 328 F 223), knew the *Meteorologica*. If an antiquary had access to one of the school-works, is it not probable that it and others were known to contemporary philosophers? But before accepting that conclusion let us look at the facts.

A speaker in Athenaeus 14.656a cites Philochorus as an authority for an Athenian practice when sacrificing to the Horai or Seasons. Philochorus' statement is given in oratio obliqua. The speaker then reverts to oratio recta with the

following sentences: ἐφθὼν ἐποπτῶν οὐ φασι δεῖν οὐδ' ἐφέψειν · τὸ μὲν γὰρ ἀνάλυσιν δοκεῖ ἔχειν τοῦ βελτίονος, ὡς φησιν Ἀριστοτέλης, τὰ δὲ ὀπτὰ τῶν ἐφθῶν ὠμότερα καὶ ξηρότερα. 'They say that one should not give a subsequent roasting or a second boiling to boiled food. The latter practice is thought to cause dissolution of the better ingredients, as Aristotle says, while roast is less digestible and dryer than boiled.' It is highly probable that the speaker has finished with Philochorus and is now talking in his own person. That was the opinion of Jacoby, who does not include these sentences among the fragments of Philochorus (*F.Gr.Hist.* 328 F 173). But let us suppose that they do after all continue the quotation from him and that some reason can be found for the change from oratio obliqua to recta. The place in Aristotle which Philochorus is alleged to cite is *Meteor.* 4.380 b 21. Anyone who looks it up may be surprised to find that there is nothing in that place about re-boiling or roasting boiled food, or about the dissolution of its better part, and that the only parallel is that Aristotle says διὸ ξηρότερα τὰ ἐφθὰ τῶν ὀπτῶν, the opposite of Philochorus' report, if his it is. Clearly he or Athenaeus knew some work now lost, and what is ascribed to Aristotle may be no more than what is contained in the words τὸ μὲν γὰρ... βελτίονος. So much for 'zitiert recht genau'.

(iii) *Cephisodorus*

Cephisodorus, a pupil of Isocrates, wrote four books in which he attacked Aristotle. Not much is known of their contents, but he rejected the collection of proverbs as being not worth while (Athenaeus 2.60e) and παροιμίαι α' is the 138th title on Diogenes Laertius' list of Aristotle's writings. He seems to have assumed that Aristotle, whom he believed to follow the Platonic line in philosophy, held to the Doctrine of Forms (Numenius is reported by Eusebius, *Praep. Ev.* 14.6.732b, as saying: οἰηθεὶς κατὰ Πλάτωνα τὸν Ἀριστοτέλη φιλοσοφεῖν ... κατηγορεῖ ἀρξάμενος ἀπὸ τῶν ἰδεῶν, τελευτῶν εἰς τὰλλα ἃ οὐδ' αὐτὰ ἤδει), and somewhere in these books he defended Isocrates. Aristotle mentions or alludes to Isocrates in the *Rhetoric*, most frequently in III, a book which had an independent existence, is probably no. 87 in Diogenes' list, and was read by Plutarch or his source (*Illinois Classical Studies* 7 (1982) 229), but most of the mentions are favourable. Cephisodorus may have had some other reason for attacking Aristotle; he may for example have heard reported Aristotle's slightly malicious parody of a tragic line, αἰσχρὸν σιωπᾶν, Ἴσοκράτη (Menagius from Quintilian, *Inst. Orat.* 3.1.14: Ξενοκράτη) δ' ἔαδ' λέγειν (Diog.L. 5.3). A rift between the two teachers of rhetoric is recorded by Cicero, *orator* 62.172, *de off.* 1.4 *uterque suo studio delectatus contempsit alterum*.²⁶

(iv) *Theocritus of Chios*

An epigram attributed to Theocritus of Chios, who was an active writer and

politician in the late fourth century, calls Aristotle κενόφρων 'empty-headed' and attributes his leaving of the Academy to ἀκράτης γαστρὸς φύσις, 'his intemperate belly' (Aristocles in Eusebius, *Praep. Ev.* 15.2). Gourmandise was ascribed to him by Cephisodorus (τρυφερὸν καὶ τένην, Aristocles *ibid.* 15.2.792a), Lyco and Timaeus also, cf. Epicurus' statement that he ate his way through his patrimony.

(v) *Marmor Parium*

The Marmor Parium of 264/3 B.C. (*JG XII* 5.444, *F.Gr.Hist.* 239) mentions many poets but few philosophers, three only: Socrates and Anaxagoras, who are introduced as being contemporaries of Euripides, and Aristotle.²⁷ The date of his death and the length of his life are given, the latter incorrectly. It may be doubted whether it would be right to see in this any recognition that he was outstanding as a philosopher. The composer of the inscription shows a strong interest in Alexander the Great, and one may suspect that Aristotle owes his mention to his reputation as tutor of the young prince. His death is coupled with that of Alexander's general Craterus.

He is identified as ὁ σοφιστής. One cannot say what the word's connotations were for the unknown author. Probably it indicated a teacher, one who taught for pay and who possessed some skill. At Athens it was not usually a complimentary term, being widely associated with disregard for truth or divorce from serious activities. Usage may not have been the same at Paros, but it could be significant that he is not called ὁ φιλόσοφος. Timaeus certainly intended the word to be derogatory (above p. 8).

(vi) *Other inscriptions*

In 330 B.C. the people of Delphi put up an inscription honouring Aristotle and his nephew Callisthenes for their work in cataloguing the winners and organisers at the Pythian games (Dittenberger, *SIG* 275). Modern archaeologists found it in a well. A plausible guess is that it was thrown in when anti-Macedonian feeling could find expression. There is some evidence that the honorific decree was rescinded in Aristotle's lifetime (Aelian, *Varia Historia* 14.1, Aristotle frag. 666 Rose³).

On the other hand the story in the Arabic translation of Ptolemy (Düring (1957) 232-6) that the Athenians passed a decree in honour of Aristotle and set up his statue on the Acropolis deserves to be treated with scepticism.

Diogenes Laertius' list of Aristotelian writings

This list (5.22-7) may be considered here, since it probably represents what somebody in the third century B.C. considered to be works by Aristotle. It begins with a group the majority of which are exoterica, i.e. popular, published works, that are mentioned in other sources. The remainder, over a hundred in number, include

remarkably few titles that can be identified with any of, or with any part of, the works of our Corpus Aristotelicum,²⁸ the others are best seen as collections of material accumulated in the Peripatetic school and attributed to Aristotle, who may indeed have instigated some of them. The identifiable works are these:

- 36 *Metaphysics* Δ, περὶ τῶν ποσαχῶς λεγομένων ἢ κατὰ πρόσθεσιν α΄
 40 *Analytica Priora*
 50 *Analytica Posteriora*
 52 *Topica*, Μεθοδικὰ α΄ β΄ γ΄ δ΄ ε΄ ς΄ ζ΄ η΄. Parts of the *Topica* are meant by 55a, 58, 59, and 60.
 75 *Politica*, Πολιτικῆς ἀκροάσεως ὡς ἡ Θεοφράστου α΄ β΄ γ΄ δ΄ ε΄ ς΄ ζ΄ η΄
 74 τὰ πολιτικὰ β΄ (?<ά>β΄) may mean *Politics* VII-VIII.
 78 *Rhetorica* I-II Τέχνης ῥητορικῆς α΄ β΄
 87 *Rhetorica* III περὶ λεξεως α΄ β΄
 90 *Physics* II-IV περὶ φύσεως α΄ β΄ γ΄
 102 *Hist. Animalium* I-IX περὶ τῶν ζώων α΄ β΄ γ΄ δ΄ ε΄ ς΄ ζ΄ η΄ θ΄
 107 *Hist. Animalium* X ὑπὲρ τοῦ μὴ γεννᾶν
 141 *Categories*
 142 *De Interpretatione*

The last two are out of place, sandwiched between 140 νόμων (νομίμων Hesychius) and 143 Πολιτεῖαι

27 περὶ ἔριστικῆς α΄ β΄ may be *Soph. El.*

38 ἠθικῶν α΄ β΄ γ΄ δ΄ ε΄ probably means part of either the *Eudemian Ethics* or the *Nicomachean Ethics*.²⁹

Zeller suggested, (1879) II 2.52, that 39 περὶ στοιχείων α΄ β΄ γ΄ referred to *gen. et corr.* with some other book, perhaps *Meteor.* 4. Aristotle himself refers to *gen. et corr.* B by the phrase τὰ περὶ στοιχείων at *de sensu* 441 b 12 and *de anima* 423 b 29. Diogenes shows no sign of realising that this is an incomplete list, omitting most of the works in the catalogue drawn up by Andronicus in the first century B.C. That catalogue included most, at any rate, of the works of our Corpus. It may be inferred that Andronicus' list, and his edition if he made one, did not attract widespread publicity.

The origin of Diogenes' list is much disputed. A clue may be found in the fact that it concludes by giving the number of στίχοι, or lines, in the whole collection. The person who had a motive for counting lines was the scribe, who was paid according to the length of the work.³⁰ It would appear then that the list is an index of copies made for some library. There are three libraries which may be considered, that of the Peripatos at Athens, that of Alexandria, and that of Pergamum.³¹ That of the Peripatos has had many votes, but one consideration appears to me to tell strongly against it. Diogenes gives lists with the total of στίχοι not only for Aristotle and Theophrastus, but also for Speusippus and Xenocrates. It is probable that all four lists have the same origin, and it is not very likely that the Peripatos would in the

later third century have been interested in acquiring the complete works of those two Academic philosophers.

The Alexandrian library, on the other hand, seems to have made copies in a standard format of the books it received, and this practice would provide a plausible origin of the stichometric totals.³² The third-century Alexandrian scholar Hermippus is known to have made a list of the works of Theophrastus and it is therefore a not unlikely guess that Diogenes derived from him all four of these lists and that they were inventories of the Alexandrian library. That library must have tried to obtain Aristotelian works from Athens and, if this is a catalogue of its holdings, it is surprising to find how little of the Corpus it had been able to secure when the list was made. One cannot be sure that the Peripatos made the whole of its stock available for copying, but if it did we have striking confirmation of Strabo's story (13.1.54), accepted by Plutarch (*Sulla* 26), that the Peripatetics had few of Aristotle's works and those mainly the exoteric.

If the first candidate, the library of the Peripatos, is the true origin of Diogenes' list, that provides even better evidence of the paucity of Aristotle's works there preserved. But against this solution stands the improbability, mentioned above, of a wish by the Peripatetics to obtain copies of the writings of Speusippus and Xenocrates, or of their needing to copy the books falsely ascribed to Aristotle and Theophrastus, of which they presumably possessed the originals. It is, however, only fair to observe that it seems to have been the usual practice of the professional scribe to record the number of *στίχοι* at the end of each piece. It would therefore have been possible, although it would have served no practical purpose, to ascertain, by adding up, the total number of *στίχοι* in a collection of rolls assembled from diverse sources.

That the list is a catalogue of the library at Pergamum is a guess, which can neither be supported nor disproved. Another guess,³³ that it is the record of the books which Aristotle left behind in Athens when he fled to Chalcis, seems to me an unlikely one.

This review of possibilities suggests the probability to be that the list represents the stock of books ascribed to Aristotle in the library either of the Peripatos at Athens or, as seems to me more likely, of Alexandria. In either case it shows that only a few of the works of the Corpus were available in the library concerned. A book available is, of course, not necessarily a book consulted.

Stoics

Here references to Theophrastus and to the Peripatos, as well as those to Aristotle, will be included. It will appear that there is no external evidence of a connection between any early Stoic and a member of the Peripatos or of Stoic interest in Aristotle's school works.

(i) *Zeno*

Zeno is reported to have studied with many other philosophers, Crates the Cynic, the Megarian Stilpo, Diodorus and Philo the 'dialecticians', and Polemo,³⁴ the head of the Academy. He is also said to have heard Xenocrates for ten years (Diog.Laert. 7.2). This is chronologically impossible; if Xenocrates was not already dead when Zeno arrived in Athens, his death cannot have been far off.³⁵ It is striking that no-one mentions Theophrastus as one of those to whom Zeno listened or with whom he disputed.

The only reference to Aristotle ascribed to Zeno is in his report of how Crates the Cynic was once reading Aristotle's *Protrepticus* in a barber's shop and remarked that the barber was better equipped for philosophy than the autocrat addressed by Aristotle (Stob. *Flor.* 95, 21, *SVF* I 273).

Plutarch twice tells an anecdote (*Mor.* 78 D, 545 F) according to which Zeno said with reference to Theophrastus' numerous audience *ὁ ἐκείνου μὲν χόρος μείζων, ὁ δ' ἐμός συμφωνότερος*, 'his choir is larger, mine more harmonious'. Anecdotes were often invented. If this one is true, it need imply no more than hearsay knowledge that students in the Peripatos pursued a variety of independent studies; it does nothing to suggest any recognition by Zeno that Theophrastus had anything to teach him. Doubtless the work of Theophrastus contained elements of which Zeno could have made use. But what was most prominent in it would have offered no attraction, detailed scientific or quasi-scientific studies and an easy-going morality.³⁶ He began to form his philosophy under the influence of Crates and he may well have had some sympathy for the action, if the story is true, of another of that Cynic's pupils, namely Metrocles, who burned the lectures of Theophrastus, presumably his notes of them, on transferring his allegiance (Diog.Laert. 6.95).

(ii) *Aristo*

Aristo criticised Arcesilaus (*SVF* I 343-6), the Megarians (*SVF* I 351), and Alexinus (*SVF* I 333); he mentioned Anaxagoras and Archelaus (*SVF* I 353), Pyrrho and Diodorus (*SVF* I 343-4). A report (Diog.Laert. 7.162, *SVF* I 333) that during a long illness of Zeno's he went over to Polemo may not deserve credit. There is no reference in what is known of him to Aristotle, Theophrastus, or any Peripatetic, except that he is said to have reported an epigrammatic appraisal by Theophrastus of Demosthenes and Demades (*SVF* I 381). Plutarch, or at least his MSS. (*Demosthenes* 10) ascribe this report to *ὁ Χιῶς* i.e. the Stoic, and to him also an estimate of the oratory of Demosthenes and Phocion made by their contemporary Polyuctus. But this material suits the historical interests of the Peripatetic Aristo (Zeller II 2.926) *ὁ Κεῖος*, with whom the Stoic is sometimes confused, better than it does the exclusively moral Chian. It is therefore plausibly assigned to the former by W. Knögel (1933) 86-7.

(iii) *Cleanthes*

If Diogenes Laertius can be believed (7.173), Cleanthes said that the men from the Peripatos were like lyres, which speak beautifully but do not hear themselves. This probably means that they praised virtue but did not practise it. No detailed knowledge of Peripatetic ethics is required to account for this gibe. But he is represented as arguing on particular points against two philosophers who were not Peripatetics, Diodorus (*SVF* I 489) and Arcesilaus (*SVF* I 605). In Cicero, *de nat. deorum* 2.42 and 44, the Stoic Balbus twice quotes arguments which he ascribes to Aristotle. They are not to be found in the surviving works and were almost certainly taken from *περὶ φιλοσοφίας* (frag. 21 Ross, 23-4 Rose³). They succeed a passage which is ascribed to Cleanthes, who may therefore have used and acknowledged Aristotle's arguments.³⁷ On the other hand, the Aristotelian matter may have been attached by some later Stoic whom Cicero used, perhaps Posidonius,³⁸ or even by Cicero himself (? cf. *N.D.* 2.95).

(iv) *Dionysius of Heraclea*

Dionysius of Heraclea, who studied under Heraclides Ponticus, Alexinus, and Menedemus before meeting Zeno (*SVF* I 422), perhaps referred to Theophrastus' Καλλισθένης ἢ περὶ πένθους (Cic. *Tusc.* 3.21, *SVF* I 434, but is this a Ciceronian flosculus, not derived from Dionysius?). *Callisthenes* was a well-known published work. Cicero, *Tusc.* 5.25, writes 'uexatur idem Theophrastus et libris et scholis omnium philosophorum quod in Callisthene suo laudarit illam sententiam *uitam regit fortuna non sapientia.*'

(v) *Chrysippus*

To come to Chrysippus, Plutarch reports a criticism (*SVF* III 24) of an Aristotelian opinion on justice that is not to be found in the Corpus. No doubt it was in some exoteric work, *Περὶ δικαιοσύνης* according to Rose (fr. 86), Ross (fr. 4) and P. Moraux (1957) 58, *Προτρεπτικός* according to Bignone I 373, and Walzer 61-2.

A Herculaneum papyrus, no. 1020, is certainly Stoic and possibly by Chrysippus; the only evidence for this authorship is that it uses his definition of philosophy (*SVF* II 131). It contains the words *τούτοις δὲ ὡς φ[α]σ[ίν]* (or *ὡς φ[α]μ[έν]*) *ἀκολουθεῖ καὶ τὸ τοῦς [σ]οφο[ύς] ἀνεξα[π]ατήτους εἶναι καὶ ἀναμαρτήτους κατ'Ἀριστοτέλην καὶ πάντα πράττειν εὖ.* Aristotle does not say this in any surviving work. Ross prints it as fr. 4 of *Πολιτικός*, but adds 'haec verba forte paraphrasis sunt verborum in *Pol.* 1319 a 3, *τοὺς ἐπιεικέας ἀναμαρτήτους ὄντας.*' But *οἱ ἐπιεικέες* there are the upper classes, who in an ideal democracy will rule without doing injustice to their subjects; only in that sense will they be ἀναμάρτητοι. The author of the papyrus, whoever he was, will not have been paraphrasing the *Politics*.

Chrysippus had some respect for Aristotle. In the third book of his *περὶ διαλεκτικῆς*, to support the importance of dialectic,³⁹ he wrote that Plato and Aristotle and their followers down to Polemo and Strato, and Socrates above all, seriously pursued the study of dialectic, and added that 'they have treated it so carefully as being among the greatest and most essential capacities, and it is not plausible that they should be so utterly mistaken when they were in general men such as we suppose them to be': οὕτω δ' αὐτῶν ἐπιμελῶς εἰρηκότων ὡς ἐν ταῖς μεγίσταις δυνάμεσι καὶ ἀναγκαιοτάταις αὐτῆς οὖσης, οὐ πιθανὸν ἐπὶ τοσοῦτον διαμαρτάνειν αὐτοὺς ἐν τοῖς ὅλοις ὄντας οἷους ὑπονοοῦμεν (Plut. *Mor.* 1045 F-1046 A; *SVF* II 126). It is hard to say what knowledge, if any, of Aristotle's writings is implied by these words. Nor does Plutarch's next sentence cast much more light. He says that if all these philosophers wrote seriously about dialectic they must have been serious about 'beginning and goal and gods and justice', matters on which Chrysippus calls their talk blind, inconsistent, and marked by countless other errors. So far as Aristotle is concerned some knowledge of exoteric works is all that this requires.

The meagreness of this harvest is marked by the contrast with the references made by Chrysippus to other philosophers, almost all of these being to specific points: Alexinus (*SVF* III 720), Antisthenes (*SVF* III 167), Arcesilaus (*SVF* II 16, 33, 109), Democritus (*SVF* II 489), Diodorus (*SVF* II 954), Diogenes the Cynic (*SVF* II 706), Empedocles (*SVF* II 884), Epicharmus (*SVF* II 762), Epicurus (*SVF* II 978, III 709, 720), Menedemus (*SVF* II 271, III 720), Philo (*SVF* II 13, 14 = p. 5.23 and p. 7.6), Plato (*SVF* II 763, III 157, 226, 288, 313), Stilpo (*SVF* II 271).

(vi) *Antipater and Diogenes*

It may be significant of a new interest that the scanty information about the Stoics of the second century includes two references to Peripatetics. Antipater is said (Seneca, *Ep.* 87.38) to have refuted a sophism invented by Peripatetics but enjoying wide currency. Diogenes of Babylon went with the Peripatetic Critolaus on an embassy to Rome in 155 B.C. (Gellius, *Noctes Atticae* 6.14.8). He may be expected to have had some knowledge of contemporary Peripatetic views. If Diogenes Laertius 7.59, like 56-8, records his doctrine, he accepted Theophrastus' four 'virtues of style' and added a fifth, 'concision' (*SVF* III 214). See also n.70.

III. METHOD OF ESTIMATING INFLUENCE

We have reviewed the explicit evidence for knowledge of Aristotle's writings and of his opinions among the philosophers of the third century B.C.⁴⁰ It does not amount to much. Stoics were aware of one or two of the exoteric works, and Chrysippus knew something of his interest in dialectic. Epicurus had heard of the *Analytics* (*Prior* or *Posterior* or both) and perhaps of part also of the *Physics* or of *De Caelo*; but that is not certain.

This does not prove that philosophers did not read the school treatises or were unaware of their contents. No-one should argue that because something is not mentioned in our sources, it did not happen. Our information about the third century is so sparse that it would be injudicious to suppose the lack of explicit evidence to be enough to show that Aristotle was neglected. The place where the truth must be sought is in the views of the philosophers themselves in so far as we have them. It may turn out that, as many modern scholars have held, they show probable or even indubitable signs of his influence. But investigation of the problem what influence he had should not proceed on the assumption that influence must have existed and must be discovered. The external evidence does not give any reason to presume that he had any great importance, at least for the Stoics, who are my prime concern. Enquiry should proceed with an open mind. The question to be asked is not 'where in Aristotle's school treatises is some hint to be found that might have given rise to such-and-such a doctrine?', but 'is this doctrine most easily explained as being a development whether of Aristotle's words or of Aristotelian views?'

Insufficiency of surviving evidence makes answering this latter question less easy. Aristotle's school-works are there to be read, but knowledge of his exoteric writings is imperfect. Information about the Stoics is limited and largely second-hand; were a book by Zeno to be discovered, it might prove to be studded with references to Aristotle, although I should be surprised if it was. The situation with regard to the Academy, including Xenocrates and Xenocrates' admirer Polemo, with whom Zeno studied, if our ancient authorities are to be believed, is even more unfavourable. If we possessed Xenocrates' extensive writings, as we possess Aristotle's school-works, it would be possible to represent him as the man who had shown the Stoics the way or by inducing dissent had caused them to think anew, just as Hahm (see p. 31) so represents Aristotle, arguing that when there is agreement between him and the Stoics they must have learned from him and that when there is disagreement reasons must be found that led them to renounce his opinions.

These uncertainties make absolute dogmatic statements about the extent of Aristotelian influence perilous. But I hope to show, by examining what seem to me

the most important claims made for it, that they are for the most part either false or inconclusive. Not only has it to be remembered that Aristotle was not the only philosopher of his day and not, the evidence suggests, the most highly regarded, so that alternative sources ought to be considered, but something must also be recognised that searchers for influence are tempted to overlook. That is the possibility that two men can independently think in the same way or find the same solution of a problem. The most famous instance may be the almost simultaneous discovery of the calculus by Leibniz and Newton. But, to compare small things with great, even the field of classical studies provides abundant evidence. Trivial examples are to be found in the way in which the same emendation of a corrupt text occurs to more than one scholar; more important is the partial anticipation of Jaeger's theory of Aristotle's development to be found in Case's article in the eleventh edition (1910) of the *Encyclopaedia Britannica*, an article which escaped the notice of British scholars, let alone that of Jaeger. Obviously such independent coincidence of thought could not plausibly be invoked to explain all of many similarities; nevertheless it seems to me that there are instances where it provides an explanation at least as likely as that of influence.⁴¹

The examination which follows of possible Stoic dependence on Aristotle primarily attempts to answer the question what influence is to be detected, certain or probable. This gets entangled with the question how this influence could have been exerted. There are in general three possible ways, not mutually exclusive: the Stoics may have read works of the Corpus, 'school-works'; they may have read exoteric works; they may have known Aristotelian doctrine through the talk or the writings of Theophrastus or other members of the Peripatetic school. I shall argue that with some *possible* exceptions there is little case for seeing knowledge of any of the school-works. Some exoteric works on the other hand were known and it is plausible to see their influence here and there. There is, as has been seen, no external evidence of Stoic interest in Theophrastus or contemporary Peripatetics, and to my mind⁴² no cogent reason for thinking that any is to be found in the surviving material.

IV. LOGIC

It is to-day generally agreed that the most important influence on Stoic logic was that of the Megarians. D. N. Sedley has shown ((1977) 74-7) that this is inaccurate. The central figures to affect the Stoics, Diodorus and Philo, belonged to a distinct school known as the 'dialecticians', who have been confused in modern times with the Megarians. The first steps in the development of Stoic logic were taken by Zeno and by Cleanthes, among whose work were books on dialectic, on propositions, and *περὶ τρόπων*, this perhaps on syllogistic modes. But next to nothing is known of what Zeno and Cleanthes actually did, and although Chrysippus doubtless incorporated some of their views, one can do no more than guess the extent of his indebtedness, and treat him as the maker of Stoic logic.

The essential difference between Chrysippus and Aristotle is that his is a logic concerned with propositional syllogisms, whereas Aristotle examines the syllogisms of terms. Along with this goes a different technical vocabulary, that of the Stoics being probably derived from the 'dialecticians'. For example, they do not use the same words as he does for 'premise' and 'conclusion'. Aristotle was aware of propositional syllogisms but uninterested, and Theophrastus and Eudemus appear to have investigated them without any great commitment.⁴³ There is no reason for supposing their work to have provided the stimulus for Stoic logic.⁴⁴

(i)

But it may be asked whether Aristotle's logical works did anything to determine the form taken by Chrysippean logic. It has been seen that Epicurus had heard of the '*Analytics*' (above p. 4), which strongly suggests that one or other or both could be obtained, and that is to some extent supported by their appearance in Diogenes Laertius' list of Aristotelian writings (above p. 11). Hence it would not be surprising if Chrysippus were acquainted with that work at first or second hand.⁴⁵

The phrase 'or second hand' must be emphasised. Ideas that originated with Aristotle passed on without a doubt to Eudemus and Theophrastus; they may have reached Diodorus and the dialecticians; they may have been used in viva voce discussions of logical problems. There was therefore more than one route by which Aristotelian influence could have reached Chrysippus. Perhaps this makes more plausible the conclusion that similarities are not accidental.

Aristotle's treatment in the *Prior Analytics* of the syllogism of terms made, so far as we know, two great advances. He recognised that the validity of an argument rested solely on its form, irrespective of its premises or its conclusion, and he

systematically examined all the forms that a valid argument (to which he gave the name of 'syllogism') could take. His use of the letters ABΓ to represent the variable terms of a syllogism, not exemplifying instances, e.g. king, good, wise, etc., makes it clear that form is all-important. All this is to be found in Chrysippus' logic, with the inessential difference that he represented the variables, which for him were propositions, not terms, not by letters (the p and q of modern logicians) but by ordinal numerals, 'the first', 'the second', 'the third'. It is possible that he was following Aristotle's example (cf. J. B. Gould (1970) 82), perhaps even probable. Yet he had a systematic mind, and the use of blank symbols to represent variables is perhaps something that he or a predecessor, Megarian or 'dialectician', could have thought of for himself.

Another possible Aristotelian influence may be found in the *Topics*. 'The titles of Chrysippus' logical works', writes A. A. Long (1978) 111-12, 'prove that he wrote an enormous length on techniques of argument and the handling of sophisms; in this respect he may be regarded as one of the heirs of Aristotle's *Topica*.' The evidence of Diogenes Laertius' list shows that the *Topics* were not unknown before the first century B.C. and it would therefore not be surprising, in view of Aristotle's satisfaction with them, expressed at 184 b, if he did cause them to be 'published' at Athens.⁴⁶ But the disappearance of Chrysippus' works makes it impossible to say whether the *Topics* did in fact exert an influence on him, and if so, how much.

(ii)

Another feature of Stoic logic that may have been instigated by Aristotle is the investigation of σημεῖα, which were so far as is known first examined in *Analytica Priora* B 27. The subject is interestingly discussed by M. F. Burnyeat (1982) 193-238. Aristotle concludes that a σημεῖον is a proposition that indicates something. Whether the indication establishes or does not establish its consequence can be discovered by reducing the argument to syllogistic form. If that is a valid form, the σημεῖον is true and may be called a τεκμήριον. Burnyeat makes it clear that Aristotle recognised that an invalid inference does not necessarily have a false conclusion and is not to be summarily rejected. A sign may not provide proof, yet it is universally regarded as yielding a possibility or even a probability.

Whether the Stoics, whose opinions are set out by Sextus, *adv. M.* 8.244-256,⁴⁷ started from Aristotle seems to me uncertain. Like him they thought a σημεῖον to be a proposition, defining it as 'a proposition in the antecedent clause of a valid conditional sentence revelatory of the consequent'. But this omits two useful elements to be found in Aristotle, the fact that σημεῖα occur in other syntactical forms than conditional sentences and the distinction between those that constitute proof and those that do not. Yet the disregard may have been deliberate, in the quest for precision, the desire to give the word an exact meaning.

A second likeness is that Aristotle gives as an example of a conclusive σημεῖον 'to show that a woman is pregnant by the fact that she has milk' (*An. Prior.* 70 a 14).⁴⁸

In Sextus' account of the Stoic position the first example of the 'revelatory sign' is 'if this woman has milk in her breasts, she has become pregnant' (*adv. M.8.252*). This similarity may be significant. But σημεῖα attracted the attention of orators and doctors as well as philosophers. There is no doubt that some of what Aristotle says is not peculiar to him. For example, at 70 b 2 he writes 'they say that the τεκμήριον is what causes knowledge (τὸ εἰδέναι ποιοῦν), and his distinction between conclusive and inconclusive σημεῖα is to be found in *Rhet. ad Alexandrum* 1430 b 36 ποιεῖ δὲ τῶν σημεῖων τὸ μὲν οἴεσθαι τὸ δ' εἰδέναι. In *An. Prior.* the example of milk and pregnancy is introduced as if it were familiar, and in Sextus it is associated with other examples from medicine. Perhaps the Stoics had it from a non-Aristotelian source.

(iii)

In the first book of περὶ ῥητορικῆς Chrysippus defended certain kinds of obscurity and solecism (*SVF* II 298). This may have been deliberate opposition to Theophrastus, for whom clarity and good Greek were the first two virtues of style. Their importance had already been recognised by Aristotle, *Rhetoric* 3 1404 b 1, 1407 a 19.

(iv)

Simplicius (*Categ.* 387.17 Kalbfleisch, *SVF* II 172) says that the more eminent commentators (οἱ κλεινότεροι τῶν ἐξηγητῶν) are at pains to show that, whereas the Stoics prided themselves on their development of logic, not least with regard to contraries, Aristotle had, in a single volume entitled *On Opposites* (Περὶ (τῶν) ἀντικειμένων), provided all their starting-points. Simplicius continues by implying that the Stoics were not original, but merely developed Aristotle's teaching (κατὰ πόδας ἠκολούθησαν, ἐκείνου τὰς ἀφορμὰς αὐτοῖς δεδωκότος ἐν τῷ περὶ τῶν ἀντικειμένων συγγράμματι ἃς ἐχειρήσαντο ἐν τοῖς αὐτῶν βιβλίοις, 388.22) and then gives some instances of how they accepted it and even more of how they distorted it. He several times refers to the opinions of Chrysippus.

Zeller II 2.74² identifies Aristotle's Περὶ (or περὶ τῶν) ἀντικειμένων, the only title used by Simplicius (387.21, 387.27, 388.23, 389.5, 390.20, 407.20, 409.30, 410.27), with Περὶ ἐναντίων (Diogenes' Index no.30). P. Moraux, however (1951) 52-3), arguing that already in the second century A.D. Alexander of Aphrodisias could not lay his hands on Περὶ ἐναντίων (*in Metaph.* 250.17-20 Hayduck), maintains that Περὶ τῶν ἀντικειμένων, never heard of elsewhere, was a late forgery designed to convict the Stoics of plagiarism.⁴⁹ This seems to me a possibility not to be overlooked, but equally not to be accepted as certain.

Simplicius appears not himself to have seen the Aristotelian or pseudo-Aristotelian work to which he refers, but to draw his knowledge from 'the commentators', by whom he probably means Iamblichus and authorities quoted by

Iamblichus, whom he represents as having examined the book (403.7, 407.20). These commentators, believing it to be by Aristotle and so finding the Stoics to have been anticipated, probably assumed rather than knew that they had derived their views from him. They may have been right, but even if the work was genuine the similarities which Simplicius records are not enough to establish this.⁵⁰ Any two men who begin to think about opposition are bound to discover the distinction between contraries and contradictions, nor would it be surprising if they independently examined the usage of the word στέρησις (deprivation), which approached the sense of 'negation'.⁵¹

That the Stoics were not dependent on Aristotle is suggested by a difference of vocabulary. Whereas Aristotle in his surviving works uses ἀντικείμενα as an inclusive term, subdivided into ἐναντία, 'contraries' and ἀντιφάσεις, 'contradictories', the Stoics had no inclusive term and by ἀντικείμενα mean 'contradictories'. Pohlenz, *Die Stoa* II 28, says that the Stoics 'transferred' Aristotle's term to their new usage. Why should they thus mutilate his scheme?

(v)

Central to Stoic epistemology is the word φαντασία, traditionally translated as 'presentation'. It is as much at home in psychology, a branch of physics – the soul is a material substance – as in logic, but it may conveniently be treated here. In its basic use the word denotes what happens when a man becomes aware by way of his senses of some external object. There is a change in the soul, which Zeno compared to the imprint of a seal on wax, and the man knows not only of this change but that it is a representation of an object which affected his sense-organs. The φαντασία is therefore a combination of a sense-impression and of a judgment about that impression.

This has some similarity to Plato's analysis of φαντασία at *Soph.* 264 b 2, where it is said to be a combination of αἴσθησις (sensation) and δόξα (judgment), cf. *Tim.* 52a. But the similarity is superficial because Plato's φαντασία is not the same kind of judgment as that involved in the Stoic analysis. Plato thinks of a φαντασία or 'appearance' such as 'that man appears to be Theodorus', which he explains as an impression made by that man plus a judgment that the impression corresponds to one's memory or concept of Theodorus. The Stoic judgment is about the correspondence of the impression to its origin.

Yet too much may be made of this distinction. Although the simplest and original kind of Stoic φαντασία merely tells the recipient that there is an object with certain characteristics, the more developed kind is more informative; one perceives not merely a coiled object but a snake or a rope; this depends on past experience through which have come the concepts of 'snake' and 'rope' (*Pyrrh. Hyp.* 1.227). The φαντασία 'that is a snake' is similar to the φαντασία 'that is Theodorus' (Plato, *Theaet.* 193b, where the word φαντασία is not used.)

But for Plato αἴσθησις, the act of sensation, preceded φαντασία, which was predominantly the judgment supervening on it, and for Plato it could not be either true or false (*Theaet.* 184-7). For the Stoics φαντασία preceded αἴσθησις, which was always true, being the perception of something really there. These are significantly different views.

Like the Stoics, Aristotle, who explicitly rejected the Platonic analysis (*de anima* 428 a 25), stated that αἰσθήσεις were always true (428 a 11). But he differed by making φαντασίαι subsequent to them, as Plato had done (429 a 1). He differed also by restricting the truth of αἰσθήσεις, as the more accurate statement at 427 b 12 shows, to sensations of the proper objects of the senses. In spite of these differences, it must be asked whether there are elements in the Aristotelian account that may have influenced the Stoics.

At the end of his discussion (429 a 2-6) Aristotle concludes that φαντασία is a change that occurs as the effect of an act of sensation and, since vision is sensation par excellence, φαντασία has its name from light (ἀπὸ τοῦ φάους), since we cannot see without light (ἀνεὺ φωτός). According to Aetius 4.12.1 (*SVF* II 54) Chrysippus said that φαντασία was named from light (ἀπὸ τοῦ φωτός) because just as light declares itself and what is in it, so φαντασία declares itself and what has made it. All that is common to these two passages is the derivation of φαντασία from φάος or φῶς. That is to our eyes so fantastic that one is tempted to imagine that two men could not have entertained it independently. Yet most Greeks took this kind of 'etymology' seriously: the sounds of a word, symbolised by its letters, contained hints of its meaning. The Stoics did not disdain it, e.g. *SVF* II 147, 914, 1090, 1094, 1098, Herodian, *gramm. graec.* 3.1.108.9. Chrysippus wrote eleven books on the subject (*SVF* II 16) and it would be no cause for surprise if he invented his origin for φαντασία. After all, φῶς is more appropriate than any other common word beginning with φ and there is no reason why Aristotle, or someone from whom he adopted the idea, should not also have seen φῶς when he looked for a word relevant to φαντασία.

Aristotle's discussions of φαντασία, which are mainly in the third chapter of *de anima* 3, are not very clear.⁵² M. Schofield (1978) 128-30 argues that this is because he made the word apply to a range of connected psychological phenomena; what is true of one of these may not be true of another. Φαντασία often means 'imagination', the conventional translation, but it does not always. Schofield emphasises (106-23) the way in which Aristotle's interpretation corresponds to the use of φαίνεται with a cautious, non-committal, or sceptical force. There is no trace of this in the Stoics' treatment of the word. Their conception of φαντασία starts from a positive origin; it gives a man information about the external world.

Aristotle and the Stoics may be seen to disagree in another way. Aristotle is concerned to establish a difference between sensation and subsequent φαντασία (cf. Schofield 104), whereas for the Stoics φαντασία is the first step in the process of sensation.

Another disagreement is provided by their use of the word φάντασμα. In Aristotle it is the object of imagination and involved in all thought (*de anima* 431 a 17); for the Stoics it is an illusion, such as are experienced by the insane (*SVF* II 54), provided by τὸ φανταστικόν; it is a change in the psyche with no external origin. Aristotle meant something else by τὸ φανταστικόν, namely the faculty of forming φαντασία.

There is so much difference between the whole approach as well as the results of the Aristotelian and Stoic treatment of φαντασία that I am unwilling to accept any likelihood of influence. Rather I would see the Stoics as wrestling in their own way with the problems raised by Plato over what was to be understood by the words αἴσθησις and φαντασία.⁵³

V. ETHICS

Comparatively little effort has been made to detect Aristotelian influence in Stoic ethics, although it is often asserted,⁵⁴ but there are some attempts which deserve attention. I will take first the most important, that of A. A. Long (1968) 72-85, 'Aristotle's legacy to Stoic ethics'. Long prudently refrained from asserting that Zeno knew Aristotle's surviving ethical works, the *Nicomachean Ethics* or the *Eudemian Ethics*, but thought that 'he must have been generally acquainted with his views.' I have argued that though this may be true, it is not to be taken for granted. The question to be asked is not How could the Stoic position have arisen from a knowledge of Aristotle?, but Is there anything in the Stoic position that is most easily explained as the result of knowledge of Aristotle?

(i)

Long found three areas where he thought that Aristotle did exert an influence. The first concerns the relation of what Aristotle calls τὰ ἐκτὸς ἀγαθὰ, external good things, to virtue and to happiness. Among the external good things Aristotle reckons friends, wealth, political power, good birth, good children, beauty (*EN* 1099 a 31-b 3). Some of these he regards as necessary or very useful for the performance of virtuous actions and the attainment of εὐδαιμονία or happiness;⁵⁵ others 'disfigure blessedness' if they are absent. As the discussion proceeds it appears that it is ἀρετή that is responsible for happiness, but that there are degrees of happiness. Its higher grades require the possession of external goods, mainly to facilitate virtuous action, which will be limited without them, but partly as a kind of cosmetic.

For the Stoics the external good things are not *good* at all, for they restrict the word ἀγαθόν to what is morally good. But most have value for leading a 'natural' life, the life appropriate to our human nature. Similarly there are things which are disadvantageous. Virtue consists in making the right selections and rejections among these externals; the appropriate action to obtain or to avoid them will follow automatically. Whether they are in fact obtained or avoided is logically irrelevant to the virtue of the man who makes the selection, and irrelevant to his happiness, which is assured by his virtue. Moreover virtue and happiness are absolute terms; no man can be more virtuous or happier than another; there is no such thing as imperfect virtue or imperfect happiness. The existence of external things that have a value for human life is a necessary condition for virtue, providing the field within which it operates. To possess them, however, is not a requisite for virtue nor an aid to happiness.

Long found it 'hard not to see the Stoics consciously going beyond Aristotle here.' One can agree that if they knew of Aristotle's discussion, they will have thought that they had devised a better solution than his to the problem how virtue and external things were related to happiness. But it is not to be assumed that they knew it: he was not the inventor of the problem. Even if they were aware of the way in which he had treated it, their own solution does not seem to be in any way dependent on his or suggested by his.

The problem what made happiness had long been discussed when Aristotle wrote, as he makes clear at several places. At *EN* 1098 b 23 he says that some think it to be virtue, some practical wisdom, some a form of theoretical wisdom, some a combination of one or all of these things with pleasure, while others associate external prosperity. The view of Xenocrates was that virtue alone created happiness, but could not do so or do so fully in the absence of some external good things (Cic. *Fin.* 4.49, Clement, *Strom.* 2.133b). Of this Aristotle's appears to be a refinement. Starting from the presumption that none of the proffered solutions is entirely wrong, he argues that external things, although they are of themselves incapable of bringing about happiness, do contribute to it in two ways: the possession of some is a necessary pre-condition of the virtue that does bring happiness, while the possession of others makes for greater happiness.

The Stoics start from a different point. For them virtue is the only thing of which the possession is relevant to happiness; this was something they had from the Cynics. But virtue is an empty word if all external things are indifferent, if there is no reason why one should be preferred to another. Zeno met this difficulty by giving value or its opposite to the external things, so that it became reasonable to have and to exercise preferences. Moral action consisted in having the right preferences and it brought happiness. The actual acquisition or possession of external things, however valuable they might be, did not increase that happiness. This solution springs from the dogma that 'good' means 'morally good'. This was not something with which Aristotle was concerned and what he says cannot have been helpful to Zeno in his attempt to solve a different problem.

On one point, and an important one, Aristotle differed from Xenocrates. He insisted (*διαφέρει δ' ἴσως οὐ μικρόν*, *EN* 1098 b 31) that happiness was not a static condition (*ἔξις*) but an activity (*ἐνέργεια*). Long suggests (76) that the Stoics consciously replaced Aristotle's view, that happiness is an activity, by their own, that it is a state that does not admit of degrees (*διάθεσις*). Is it not more likely that they simply took over the Academic view that it was a condition? Plato, *Philebus* 11d, talks of a *ἔξις ψυχῆς καὶ διάθεσις* that can make a man's whole life happy; Speusippus' definition of happiness made it a *ἔξις* (Clement, *Strom.* 2.133.4); and the same thing is implied by Xenocrates' word *κτῆσις* (Clement, *Strom.* 2.133.5). There is no hint that the Stoics criticised Aristotle's arguments intended to show that happiness is an activity, as they might well have done if they had known them.

(ii)

The second area in which Long saw influence was that of the conditions for acting virtuously and the way in which a man becomes virtuous.

It is familiar that for the Stoics an act is a good act only if it is performed by a good man, that is to say the disposition of the agent makes it good. An identical act, if done by a bad man, is not a good act. Aristotle follows normal language: an act is called good if it is the act a good man would do but it is virtuously done only if the agent acts from a virtuous disposition. For example, a just act is justly done only by a just man. The conditions for acting virtuously are that one should act (*EN* 1105 a 31)

1. εἰδώς, knowing what one is doing;
2. προαιρούμενος καὶ προαιρούμενος δι' αὐτά, choosing the act and choosing it for its own sake;
3. βεβαίως καὶ ἀμετακινήτως ἔχων, from a firm and unalterable state.

Long said that the Stoics 'accepted all these conditions'. He supposed that by εἰδώς Aristotle indicated 'practical knowledge' (φρόνησις) of the right goals and how they are to be achieved, and he noted that Zeno was thought to have equated ἐπιστήμη, in terms of which the Stoics defined ἀρετή, with φρόνησις (*SVF* I 201). But Aristotle's meaning is not that of Zeno, for after setting out his three conditions he continues 'These are not reckoned in as conditions of the possession of the arts, except the bare knowledge; but as a condition of the possession of the virtues knowledge has little or no weight' (Ross's translation). His contrast may be illustrated by an example: if one knows how to spell, one has the art of spelling, but if one knows how to be generous one does not thereby possess the virtue of generosity.⁵⁶ Yet one cannot possess the virtue without knowing how it is exercised.

For Zeno to possess φρόνησις is to possess all the virtues; he is still dominated by the Socratic view, against which Aristotle here revolts, that if a man knows what is right he cannot refrain from doing it. Further the virtuous man always acts virtuously, so that φρόνησις alone is adequate to characterise what is virtuously done; there is no need for more conditions.

To turn to the second condition, εὖν προαιρούμενος, it is not certain that the early Stoics used the word προαιρέσθαι⁵⁷ and clearly they did not use Aristotle's analysis (*EN* 1111 b 4ff.), as Long himself noted. Without doubt they believed that virtuously-done action was deliberate action, which is all that Aristotle could expect his hearers to understand by the word at this earlier passage (1105 a 31-2). But the Stoics did not need Aristotle to teach them this obvious fact.

The inflexibility of character which Aristotle expressed by the words βεβαίως and ἀμετακινήτως corresponds to the inflexibility of judgment which the Stoics expressed by the words βέβαιος and ἀμετάπτωτος, e.g. in the description of ἀρετή as λόγος ὁμολογούμενος καὶ βέβαιος καὶ ἀμετάπτωτος (*SVF* I 50). There is a

similarity here, but no need to call in Aristotle to explain it. Rather the Academy lies behind both. Plato in the *Republic* insists on the βεβαιότης that must be possessed by the fully virtuous guardian (503c and 537c). The word ἀμετάπτωτος is also used by him: he speaks at *Tim.* 29b of λόγοι μόνιμοι καὶ ἀμετάπτωτοι. At *Topica* 139 b 32, Aristotle criticises the phrases ἀμετάπτωτος ἐπιστήμη and γῆ τιθήνη as being obscure metaphors; τιθήνη is known to be a Platonic metaphor (*Tim.* 49a) although applied not to earth but to the 'Receptacle', perhaps the other was also used in the Academy. Certainly the word ἀμετάπτωτος is used in all three definitions of ἐπιστήμη given in the pseudo-Platonic Ὅροι 414 b.⁵⁸

It may also be granted to Long that the Stoics and Aristotle return approximately the same answer to the question how virtue is to be obtained. For Aristotle it is acquired by doing virtuous deeds, i.e. by acting as a virtuous man would do, but without having his established disposition. Similarly for the Stoics the road to virtue is the performance of 'appropriate actions', καθήκοντα, which are externally the same as virtuous actions, κατορθώματα, but are not performed with the complete and unshakable understanding of what is consonant with nature that distinguishes the virtuous man. But the common element in these views is Platonic: at *Rep.* 444c we read that 'to do just acts engenders justice in a man, and to do unjust ones injustice.' Here again it is unnecessary to introduce Aristotle to account for Zeno.⁵⁹

(iii)

There is perhaps more force in Long's third topic, the Aristotelian and Stoic treatments of pleasure, although I remain less than convinced. While he very clearly brought out the many differences between them, he found one notably similarity which he took to be evidence of Aristotelian influence.

Diogenes Laertius 7.85, *SVF* III 178, gives it as doctrine of the Stoa that it is false to claim that the first impulse of animals is towards pleasure. 'They say that pleasure, if it is felt, is a consequence or aftergrowth when nature has of itself sought after and found what fits in with the animal's constitution. In this manner animals become lively and plants thrive.' ὁ δὲ λέγουσιν τινες, πρὸς ἡδονὴν γίνεσθαι τὴν πρώτην ὁρμὴν τοῖς ζῴοις, ψεῦδος ἀποφαίνουσιν· ἐπιγένημα γάρ φασιν, εἰ ἄρα ἔστιν, ἡδονὴν εἶναι, ὅταν αὐτὴ καθ' αὐτὴν ἢ φύσιν ἐπιζητήσασα τὰ ἐναρμόζοντα τῇ συστάσει ἀπολάβῃ, ὃν τρόπον ἀφιλαρύνεται τὰ ζῶα καὶ θάλλει τὰ φυτὰ. This must recall a sentence of Aristotle's *EN* 1174 b 31, which has become famous: τελειοὶ δὲ τὴν ἐνέργειαν ἢ ἡδονή, οὐχ ὡς ἡ ἕξις ἐνυπάρχουσα ἀλλ' ὡς ἐπιγιγνόμενόν τι τέλος, οἷον τοῖς ἀκμαίοις ἡ ὥρα. 'Pleasure completes the activity, not being immanent in it like its ἕξις,⁶¹ but a supervening perfection, like the bloom of youth on men in their prime.'

Clearly there is some similarity here⁶² and one cannot quite confidently deny Aristotelian influence on the Stoic view, which may have originated with

Chrysippus,⁶³ whose book on *Ends* (in life) is cited at the beginning of Diogenes' chapter. Nevertheless there are differences not to be overlooked. The concepts of 'perfecting' and 'activity' are absent from the Stoic statement.

The absence of 'perfection' is not to be wondered at. The essence of the Stoic position is that pleasure is not a τέλος, something which can be aimed at, but an automatic consequence of having attained one's aim. Associated with this is another difference. While for Aristotle pleasure accompanies an activity, for the Stoic it seems to be a sequel, something that follows the state of having acquired what suits one's constitution.⁶⁴

There are also historical reasons for hesitating to accept an Aristotelian origin for the doctrine that pleasure is an ἐπιγένημα. Clear evidence of knowledge of *EN* outside the Peripatetic school before the first century B.C. is lacking.⁶⁵ Secondly, the concept of pleasure as an ἐπιγιγνόμενόν τι τέλος is not to be found either in *Magna Moralia* or in Arius Didymus' abstract of Peripatetic ethics.⁶⁶ It is unlikely therefore to have been part of the school's tradition, so enabling Chrysippus to learn it from there.

(iv)

D. Tsekourakis, *Studies in the Terminology of early Stoic ethics* (1974), says in his preface that 'it is striking how many Stoic ethical terms are found in Aristotle, while they are not met earlier', but the book does little or nothing to substantiate this claim, which I do not think can be substantiated. The only words Tsekourakis adduces are κατόρθωμα, κατόρθωσις, καθήκει, and καθῆκον, which he says 'do not occur in Plato at all, while they are not uncommon in Aristotle.' κατόρθωμα occurs in the Aristotelian Corpus only at *MM* 1199 a 13 and then not in the Stoic sense, τὰ γὰρ ἀνεὺ τοῦ λόγου τοῦ κρίνοντος γινόμενα κατορθώματα εὐτυχήματά ἐστιν. κατόρθωσις also occurs once, at *Rhet.* B 1380 b 4. κατορθοῦν itself is not uncommon (but there are at least 10 instances in Plato), generally in its current sense of 'to be successful' (cf. the verse quoted by Demosthenes 18.290, μηδὲν ἁμαρτεῖν ἐστὶ θεῶν καὶ πάντα κατορθοῦν) and well illustrated by *EE* 1247 a 4, ἄφρονες γὰρ ὄντες κατορθοῦσι πολλά. Tsekourakis thinks (45) that the Stoic use is in a way prefigured by *EN* 1107 a 14, where Aristotle says of theft, murder etc. οὐκ ἐστὶν οὖν οὐδέποτε περὶ αὐτὰ κατορθοῦν, ἀλλ' ἀεὶ ἁμαρτεῖν. 'In a way' are the important words here; he does not claim that the Stoics derived their usage from this passage. καθήκει, καθῆκον do occur several times in Aristotle, but never in the context of morality. As Tsekourakis himself admits (45), for anticipations of the Stoic use we must go to Xenophon. My conclusion is that there is no reason for supposing that the Stoics derived any of their ethical vocabulary from Aristotle.

(v)

The first chapter of J. M. Rist's *Stoic Philosophy*, 'Aristotle and the Stoic good',

remarks on certain similarities between the *Nicomachean Ethics* and Stoic doctrine and also contrasts their divergences. He concludes (20-1): 'we have tried to show ... that the very originality of the Stoics is best understood in terms of an attempt to resolve certain (in their view) half-truths in the Aristotelian account ... many of these positions arise from an attempt to pursue the logical consequences of Aristotelian theories.'

In fact the chapter makes little attempt, certainly no organised attempt, to show these conclusions to be true. It is not always easy to determine exactly what Rist wishes to maintain, but I hope that I do not do him an injustice by saying that his treatment appears to me to suffer from two fundamental weaknesses which rob it of force: the first is that he overlooks the possibility that similarities between Aristotle and the Stoics may be due to a common origin in the Academy or in widely-held notions or even to coincidence: the other is that he takes divergence to mean that the Stoics arrived at their position by criticising Aristotle; he does not reflect that similar reasoning would show that since they differed from Polemo in the same respects they must have started from criticisms of him.

The questions that Rist regards as seen by the Stoics to have been unanswered or unsatisfactorily answered by Aristotle are the following: It is right to call both happiness and things which can promote happiness 'good'? Do we need external 'goods' for the moral life? What place is there for choice in the good man's actions, when he cannot do anything but what is right? Can wisdom and happiness be lost? It was not necessary to read the *Nicomachean Ethics* before asking oneself these questions.

(vi)

The attempt of H. von Arnim (1926) 157-61, and F. Dirlmeier (1937) 47-75, to find a basis in Theophrastus for the important Stoic concept of *οἰκείωσις* is adequately rejected by M. Pohlenz (1940) 1-47, C.O. Brink (1956) 123-45, and S. G. Pembroke (1971) 132-7. Support for their conclusion can be found in the long discussion, in reference to Arius Didymus, by P. Moraux (1973) 1 316-50.

A. von Fragstein (1974) 68 writes 'es ist offensichtlich, dass die stoische Affektlehre in Hinblick auf Aristoteles' Πάθη-schrift [i.e. the lost work no. 61 in Diogenes Laertius' list] entwickelt wurde.' This will be found less obvious by those not gifted with a miraculous knowledge of the contents of this work.

Another author who finds an Aristotelian origin for the Stoic doctrines concerning *πάθη* is A. C. Lloyd (1978) 233-46. He begins by declaring that the Stoic psychology of action and their treatment of emotions (by which word he understands what would better be called 'passions') 'arise from Aristotle'. He points out certain similarities and differences, but he never puts the question whether they are most easily accounted for by supposing Stoic knowledge of the Aristotelian position. Indeed at one point (238) he writes 'Far from explaining the major

difficulties of the Stoic account Aristotle's account only brings them to the forefront.'

Similarly M. Forschner (1981) 134 begins his account of the Stoic theory of *πάθη* by saying that it is only intelligible as a result of a critical treatment of Aristotle's theory. He then calls attention to several differences, but makes no attempt to show that they were caused by intentional rejection of the Aristotelian position.

I believe that all attempts to see Stoic ethics as a development from Aristotelian or Peripatetic thought have been unsuccessful. Zeno's forerunners were the men of the Academy, whose opinions were of course often shared by Aristotle. Naturally I do not deny that he received his initial impulse from the tradition about Socrates and from the Cynics. But these did not provide a systematic philosophy. The connexions of Stoic ethics with views held in the Academy are well brought out by H. J. Krämer (1971) 220-30. Cf. also K. von Fritz, *RE*xxi 2527-9, and Z. Stewart (1976) 276, 'the influence of Platonism was immense at the beginning as at the end of the heyday of Stoicism.'

VI. PHYSICS

The belief that the early Stoics formed their philosophy in reaction to the views of Aristotle is widespread and allusions to it en passant are common. But it is in the field of physics above all that his influence is seen. No doubt this is in part due to the authority of Zeller (III I. 364-70), who saw little trace of Aristotle in Stoic ethics, which he regarded as most indebted to the Academy, but was moved in respect of physics by the arguments of H. Siebeck, *Untersuchungen zur Philosophie der Griechen*² (Freiburg 1888, ed. 1 1873), 'Die Umbildung der peripatetischen Naturphilosophie in die der Stoiker', 181-252. Siebeck took it for granted that the Stoics knew many of the principal Aristotelian doctrines, not necessarily by direct acquaintance with the school-works. Several passages suggest rather that he thought of the Peripatetic school, and in particular of Theophrastus, as intermediaries, and as intermediaries who had already made some modifications, which were accepted or extended by the Stoics (e.g. 182, 218, 223, 229). He was aware of the exoteric work *Περὶ φιλοσοφίας* and of the Academy, but gives no sign of recognising their possible importance.

The authors of two valuable books, E. Bréhier, *Chrysippe et l'ancien stoicisme* (Paris 1910, revised edition 1951) and M. Pohlenz, *Die Stoa* (Göttingen 1948), both take it for granted that the early Stoics knew the work of Aristotle and Theophrastus. For example, the former says that they 'disregarded' the Aristotelian distinction between the higher and sublunary spheres (142), the latter that Zeno will certainly have known Theophrastus' criticism of the Aristotelian theory of motion, but went his own way (1 68). This ready assumption of Stoic knowledge of the Peripatetics lies behind many of these scholars' statements. Yet when it is said that Zeno or Chrysippus 'followed' Aristotle, the word may be ambiguous. It may mean no more than that these philosophers expressed the same view as he had previously expressed; but one may suspect that the intention is that the reader should understand them to have known and accepted Aristotle's view. Sometimes this is clear, as when Bréhier says that they 'faithfully followed' Aristotle in having a central earth, then water, then air, and then aether (149). It will be noted below (p. 43) that the scheme was an old one and that the Stoics followed the *Timaeus* more closely than *de caelo*. The most important modern author systematically to explore the supposed Aristotelian influence is D. E. Hahm, whose useful and learned work *The Origins of Stoic Cosmology* (Ohio 1977), confined to this one aspect of Stoic philosophy, but written by a man deeply versed in the ancient sources and familiar with modern scholarship, proceeds on the assumption that Zeno and Chrysippus were as interested in Aristotle and Theophrastus as are scholars of today, and that

they read widely and attentively in the works of the Aristotelian Corpus.⁶⁷ He fully recognises, however, that they were exposed, or may have been exposed, to other influences.

The first systematic open attack on belief in Aristotelian influence came from W. Wiersma in *Mnemosyne* n.s. 3. 11 (1943) 191-216, 'Die Physik des Stoikers Zenon'. He accepted that traces of Peripatetic influence were to be found everywhere in Chrysippus' physics, although he did not identify them; but he argued that Zeno made no reference to many essential doctrines to be found in the school-works and that he will have known nothing of Aristotle but the published exoteric writings. The only Aristotelian material Wiersma recognised was the view that soul was a kind of fire, πνεῦμα, a 'breath', and even this he thought perhaps not to have been a direct borrowing. There are weaknesses in his argument. We are ill-informed about Zeno, and much that our sources ascribe to Chrysippus may have originated with the school's founder; accordingly if Chrysippus shows Aristotle's influence, that influence may originally have been exerted on Zeno. Further some details are not convincing. Nevertheless the article is valuable.

Wiersma had in some ways been preceded by J. Moreau (1939), who while admitting that the Stoics' definitions of matter echoed Aristotelian formulas (160) saw their cosmology as essentially a development of Platonic concerns (158-186). The Platonic and Academic origins of Stoic physics were again emphasised by H. J. Krämer (1971) 75-131, whose book unfortunately seems not to have been known to Hahm.

(i) *Preliminary considerations*

Following Xenocrates (fr. 1) the Stoics divided philosophy into logic, ethics, and physics, by the last meaning not our modern subject but an enquiry into the world of nature. Aristotle had spread his studies of nature over a very wide field: he was interested not only in establishing general principles, as in *Physics* and *de generatione et corruptione*, but also in description of the universe, as in *de caelo*, and of weather processes in *Meteorologica*, and in the collection of facts, as in *Historia animalium*. His pupil Theophrastus set down a mass of botanical observations and engaged in factual research on other subjects. Although Xenocrates, of whom Zeno's teacher Polemo was an ardent admirer, did not neglect 'physics', there can be no doubt that of all the philosophers in the second half of the fourth century Aristotle and his followers were those with the most active and detailed interest in the subjects covered by that word. Accordingly it would not be surprising if the early Stoics, Zeno, Cleanthes, and Chrysippus, enquired into their views and were influenced by them. Many scholars, as has been seen, have been convinced that there was a wide-ranging influence.

It may be desirable to repeat here what was said in a sporadic manner at the beginning of this essay. Aristotelian views may have been available, and his influence exerted, in more than one way. The early Stoics may have known his opinions from tradition in the Peripatetic school, a tradition which may have been oral or based on Aristotle's writings or a combination of both. They may have met his views as reported and criticised by members of other schools. Finally, they may themselves have read Aristotle's writings. For my part, I am sceptical about many of the claims to detect Aristotelian influence, however it was exerted. But in particular I shall argue that, with a very few possible exceptions, what evidence we have does not suggest that the early Stoics had any acquaintance with the books that constitute our Aristotelian Corpus. The passages which have been adduced to support the opposite view are, I believe, quite insufficient. It will be convenient to begin by examining what Pohlenz (1947) II 42 treats as his prime witness for Stoic knowledge of the school-works.

Aristotle in *gen. et corr.* 328 a 26 wrote that a drop of wine could not be mixed with 10,000 χόες (about 7,000 gallons) of water, but would be overpowered and disappear: σταλαγμὸς οἴνου μυριοῖς χοεῦσιν ὕδατος οὐ μίγνυται · λύεται γὰρ τὸ εἶδος. Chrysippus, says Pohlenz, replied (*SVF* II 480) that there was no reason why one drop of wine should not mingle with the whole sea, οὐδὲν ἀπέχειν φάμενος οἴνου σταλαγμὸν ἓνα κεράσαι τὴν θάλατταν, 'one of the numerous proofs that the Stoa knew the school-works of Aristotle also and studied them keenly.' Note how Chrysippus becomes the Stoa. And what are Pohlenz's 'numerous' proofs of keen study? He never adduces any others.

Now if we turn to the passage of Plutarch which reports this statement of Chrysippus (*comm. not.* 1078 C-E) we find that he represents it not as a criticism of Aristotle but as the acceptance of a paradox originally enunciated by Arcesilaus. In his lectures Arcesilaus had often made fun of the Stoic doctrine of κρᾶσις δι' ὄλων, according to which a small body could completely penetrate a larger one while retaining its identity, by saying that if a human leg were cut off and then decayed and were thrown into the sea, the fleet of Antigonus could sail through it. Plutarch continues that one could go further and imagine the fleets of the Greeks and the Persians of the second Persian war fighting a battle in that leg; then, noting that this requires the previous putrefaction of the leg, he goes on to say that a single ladleful or drop will, without any change of nature (αὐτόθεν), reach the Atlantic when it has fallen into the Aegean. (The word he used for ladle (κύαθος) predominantly means a wine-ladle and he clearly means a ladleful or a drop of wine, in contrast with the leg, which ceases to be a leg before it can be mixed with the sea.)⁶⁸ This, he concludes, was accepted by Chrysippus, who wrote that there is no reason why a single drop of wine should not mingle with the sea, and that the drop will in fact extend through the whole universe.

Chrysippus was, before becoming a Stoic, a pupil of Arcesilaus and his follower Lacydes (*Diog. Laert.* 7. 184); he will no doubt have heard the jest about the

amputated leg. That jest was open to the humourless objection that it would not be the leg itself through which the fleet sailed or in which the battle was fought, but the product of the leg's decay. This reply could be avoided by substituting a measure of wine for the leg, a substitution which may well have been made by Lacydes or some other Academic. Chrysippus would then have no ground for resisting the conclusion that the smallest measure of wine could extend through not merely a part of the Aegean, but through the whole of the Mediterranean. He showed that he accepted it gladly by carrying it to its logical extremity: a drop of wine could be co-extensive with the universe. I see no more reason than did Plutarch for introducing Aristotle to account for Chrysippus; there is a simple straightforward line of development from Arcesilaus.⁶⁹

Even if we had never heard of Arcesilaus' jest, there would be no need to bring Aristotle in. The most familiar form of κρᾶσις is that of wine and water, an everyday event in Greece. How can one suppose that Chrysippus, wishing to express forcibly the idea that difference of volume was no obstacle to the complete blending of two ingredients, would not have thought of saying that a drop of wine would blend with the ocean, the greatest known mass of water, unless he had read in *gen. et corr.* that a drop of wine would be killed, so to speak, if mixed with some six or seven thousand gallons of water?⁷⁰

In this instance one can confidently deny that any influence, direct or indirect, came from Aristotle. More frequently there is some similarity between Aristotle and the Stoics, without there being enough likeness to make knowledge of the school-work probable. But, as has been seen, there were other routes through which his views could become known;⁷¹ they could have been transmitted through Theophrastus and the Peripatetics or attacked by the Academy, although the likelihood of influence's being exerted in these ways is not enhanced by the absence of any explicit evidence of Stoic contact with the Peripatos or of Academic interest in it, but the possibility is there and must be reckoned with. Yet one should not immediately assume that, because Aristotle's views could have been known to the Stoics, they also were known. The first question to ask is whether the Stoic position requires Aristotelian influence to explain it at all or whether some other explanation may be perfectly adequate.

To record all the points where Stoic physics have been supposed to have originated from or to criticise Aristotle would be difficult and certainly tedious. The following discussion will be confined to questions where the supposition has some element of plausibility.

(ii) *Principles and Elements*

Zeno accepted the usual Greek view that there were four elements (στοιχεῖα), earth, water, air, and fire. In the modern world, before the discovery of isotopes, elements were thought of as identical substances: one molecule of carbon was exactly like another. The Stoics thought otherwise; different kinds of fire are

enumerated,⁷² and similarly 'earth', 'air', and 'water' must each have covered a range of like but distinguishable substances. An element could be accounted for by two 'principles' (ἀρχαί), its 'matter' (ὕλη), which of itself had no qualities, and that which produced qualities in the matter. Zeno seems to have approached the subject not from a consideration of the elements in themselves but by looking at the whole universe:

They hold that there are two principles of the whole of things, that which acts and that which is acted upon. That which is acted upon is the substance without qualities, matter (ὕλη); that which acts is the *logos* in it, God. He, being eternal, fashions (δημιουργεῖ) everything throughout all matter. Zeno sets out this doctrine in his book *On Substance*. (Diog. Laert.7. 134, *SVF* I 85).

Another passage (Diog. Laert.7. 150, *SVF* I 87) adds that the substance of the universe is eternal and suffers neither increase nor decrease, unlike that of each of the individual things which constitute it.

Unqualified matter is a mental construct; all matter is in fact qualified, because it is acted upon by the *logos* in it. That word is hard to translate. One may try 'formula', that is a definition of what it is that makes this particular piece of matter what we call 'water', and this other what we call 'fire'. Similarly there are formulas which define what it is that makes blood blood and milk milk, a snail a snail, a man a man, and Socrates Socrates. But it is more important that the word *logos* has as one of its meanings 'reason'. The world in which we live is a rational construction, so the Stoics believed, the work of intelligence. That is why its formula can be identified with God.

Aristotle made much use of the analysis of objects into matter or material (ὕλη) and form (εἶδος). A statue is made by imposition of form on the material bronze; bronze is a form imposed on the material copper and tin; copper a form imposed on the elements. In this way by stripping off layers of form or qualities one could arrive in thought at the concept of unqualified material, ἄποιος ὕλη. It has been denied that Aristotle did in fact make use of this concept, most recently by W. Charlton (1970) 129-45, but this has not been widely accepted. The phrase ἄποιος ὕλη does not occur in his writings, it is true, but there may be passages which imply the conception.⁷³ That it was from Aristotle that Zeno acquired the concept of unqualified matter has often been supposed, and the supposition is lent plausibility by the fact that Aristotle is the first philosopher known to have used ὕλη as a technical term. Yet one must observe that Zeno's belief that the two principles necessary to explain the cosmos were God and matter is in its totality more like what we know of the Academy of his time than it is to Aristotle's logical method.

Xenocrates took as his first principles the One, which he also called Zeus and Mind,⁷⁴ and the Ever-flowing, which later doxographers identified with matter (Aetius 1.3.23, Diels *Dox.* 288). Another passage of Aetius (1.7.30, Diels 304) ascribes to Xenocrates a belief in two gods, the One, which he also called Zeus and

mind, his primary god (ὁ πρῶτος θεός), and another, which was the soul of the universe. The continuation of the passage is mutilated, but contains the phrase 'immanently pass through the material elements' (ἐνδιήκειν τοῖς ὕλικοῖς στοιχείοις), and ends with 'supplying the Stoics with these ideas,'⁷⁵ he paraphrased the earlier part from Plato' (ταῦτα χορηγήσας τοῖς Στωικοῖς τὰ πρότερα μεταπέφρακεν παρὰ Πλάτωνος).

The only other ancient author to suggest an origin of Zeno's two principles, which became orthodox Stoic doctrine, is Aristocles, who in the second century A.D. could write of the Stoics that 'they say that the elementary stuff of things is fire, as Heraclitus did, and that its principles are matter and God, like Plato' (*SVF* I 98). It is now generally believed that the doctrine of fire as the elementary stuff was not learned from Heraclitus, but supported by appeal to him. In the same way the alleged similarity between Plato and the Stoics does not necessarily imply that they learned from him. Moreover it is not true that Plato recognised matter and God as principles of fire or of the sensible world in general, or indeed that he had the concept of matter, later expressed by the word ὕλη.

Nevertheless later Platonists believed that he had the concept, so interpreting the *Timaeus*.⁷⁶ There Plato had pictured a divine craftsman (δημιουργός), who made reflections of Forms appear in a Receptacle 'itself devoid of qualities.' This Receptacle was in Plato's thought more like space than matter; yet it was not just empty space, for it contained 'disorganised movements.' Plato did not call it 'matter', but the later Platonists made the identification, and had the excuse that he had *compared* it to the gold which is the material (ὕλη) out of which various objects can be fashioned.⁷⁷ The identification is at least as early as Aristotle, who writes that 'Plato says in the *Timaeus* that matter and space are one and the same' (*Physics* 4.209 b 11, cf. 210 a 1). It is possible that this is his own misinterpretation,⁷⁸ in his own language, of what Plato said. On the other hand he may repeat a line already taken in the Academy, where from the first the *Timaeus* had been the subject of study and discussion; if so, the word (ὕλη) may already have been used there as a technical term.⁷⁹

However that may be, Zeno's approach differs from that of Aristotle in two respects. The first is that his two principles are starting-points for his cosmology; he sees them as the basic constituents of the universe. For Aristotle the concepts of matter and form are tools for logical analysis. The other is that Aristotle's pair, form and matter, are not enough to explain anything; an agent is needed, an 'efficient' cause, which in his view will act with a purpose, the 'final' cause. The principle which Zeno pairs with matter is an active rational force, which will create qualities in matter. Now it may be that he arrived at his principles ὕλη + λόγος or θεός by considering the inadequacy of the Aristotelian ὕλη + εἶδος, but it is noteworthy that, as we have seen, a very similar pair to his was familiar in the Academy; it seems more likely that he developed his thought from that precedent than from a criticism of Aristotle.

A more difficult question is whether it was from Aristotle that he derived the use of the word ὕλη as a technical term. The Stoics did not adopt the word εἶδος in its Aristotelian sense⁸⁰ (nor did Epicurus); did they take over ὕλη from him or was it already used in the Academy? There seems to be no clear answer.⁸¹

In these circumstances we should resign ourselves to confessing that we can with confidence neither assert nor deny that Zeno was directly influenced or even influenced at all by Aristotle's distinction of ὕλη and εἶδος. But if there was any influence, it was unimportant in comparison with that of the Platonic tradition in the Academy.⁸²

(iii) *Activity and Passivity*

Zeno's two principles, λόγος and ὕλη, were contrasted as active and passive, τὸ ποιῶν and τὸ πάσχον. Aristotle makes much use of the opposition between ποιεῖν and πάσχειν, and this has been seen as confirming his influence on Zeno.⁸³ He even associates πάσχειν with ὕλη at *gen. an.* 724 b. 7 πότερον ὡς ὕλην καὶ πάσχον ἢ ὡς εἶδος τι καὶ ποιῶν. But the pairing of these words was an old tool of thought, several times used by Plato (*Rep.* 436b, *Parm.* 138b, *Theaet.* 156a, 159a, *Soph.* 247d, cf. *Epinomis* 982b). A passage in Aetius, referring to Pythagoras, may be particularly relevant: σπεύδει δ' αὐτῷ τῶν ἀρχῶν ἡ μὲν ἐπὶ τὸ ποιητικὸν αἴτιον καὶ εἰδικόν, ὅπερ ἐστὶ νοῦς ὁ θεός, ἡ δὲ ἐπὶ τὸ παθητικόν τε καὶ ὑλικόν, ὅπερ ἐστὶν ὁ ὄρατος κόσμος (1.3.8, Diels 281). This interpretation of Pythagoras is thought by H. J. Krämer (1971) 119-21 to be of Academic origin (he ascribes it to Xenocrates). If that is right, we have here something close to, and very possibly the inspiration of, the doctrine of Zeno, who is known to have written a book entitled Πυθαγορικά. To say, as Bréhier does (115), that the pair 'active' and 'passive' were 'very certainly borrowed from Aristotle' is characteristic of a blinkered approach that has been too frequent.

(iv) *Elements and their qualities*

Aristotle was exercised by the difficulty of imagining how one element could change into another. If the first was not to cease to exist and the second not to come into being from nothing, there must be some continuing factor common to both. He could not find that in unqualified matter, for that has no real existence: all matter is qualified. He solved the conundrum by ascribing two qualities to each element: fire was hot and dry, air hot and fluid (wet), water cold and (fluid) wet, earth cold and dry. Thus fire may become air by the substitution of wetness for dryness, while heat remains; air becomes water by the substitution of cold for heat, while wetness remains, and the disappearance of wetness turns water to earth. There were also more complicated forms of transmutation: for example, air and earth, if combined, might by each dropping one quality become either cold and wet or hot and dry, that is to say water or fire.

The Stoics did not use this complicated scheme. They assigned one quality to each element, hotness to fire, coldness to air, wetness to water, and dryness to earth. Critics who believe them to have studied Aristotle represent this as a deliberate simplification of his doctrine.⁸⁴ If they are right in their assumption, their conclusion is necessary. But there is no other evidence to support it. There is no hint that the Stoics gave any reasons for not accepting Aristotle's scheme, or that they were aware of any problem involved in the change of one element into another. For them the question of continuity did not arise, because god is always present in matter and responsible for the changes which bodies, including the elements, undergo.

At the same time the Stoic scheme of four elements each characterised by one quality does not require the Aristotelian scheme to beget it. The four elements were familiar to Greek thought, and it was an easy step to associate with each element one of the four qualities which were traditionally the primary ones. Fire was obviously hot and water wet. Even in England earth may appear to be naturally dry; in sun-baked Greece there would be no question. By elimination air must be cold, although this is not so evidently true, in spite of the arguments adduced by Plutarch, *de primo frigido* 948D-949F, and Aristotle had even thought it hot (and wet).

It is therefore unnecessary to look for any predecessor, let alone Aristotle, for the Stoic association of one quality with each element. Anyone could have done that without any prompting. Yet the Stoics were not in fact pioneers; the doctor Philistion, who belongs to the first half of the fourth century and who visited the Academy (see p. 47 below), is recorded as having done the same (frag. 4): εἶναι δὲ καὶ ἐκάστου (sc. στοιχείου) δυνάμεις, τοῦ μὲν πυρὸς τὸ θερμόν, τοῦ δὲ ἀέρος τὸ ψυχρόν, τοῦ δὲ ὕδατος τὸ ὑγρόν, τῆς δὲ γῆς τὸ ξηρόν.

(v) *Nature*

Zeno defined *physis*, 'nature', as 'a craftsmanlike fire, proceeding methodically to creation' (πῦρ τεχνικὸν ὁδῶ βαδίζον εἰς γένεσιν, *SVF* I 171). It is not immediately obvious to the modern mind what he intended to denote by the word *physis*. He did not have in view merely what we call the living world, the world of the *naturalists*; he was concerned with the whole world, the subject of the *natural sciences*. This he saw not as a static object but as a changing construction, and he gave the name of 'nature' to the dynamic force which brought it into being and directed all its processes. This 'nature' is sometimes called that of the universe (ἡ τῶν ὅλων) or common nature (ἡ κοινὴ φύσις), as distinguished from the nature of the individual things that are the parts that compose the universe (ἡ ἐπὶ μέρους). But the distinction is not an opposition; the fire that organises the universe also organises each of its parts.

Although this is a new conception, Hahn and others see in it elements that have

been derived from Aristotle. First, the idea that nature resembles a craftsman is typically Aristotelian. Secondly Aristotle treats nature as the source of movement (*Phys.* 2.192 b 8ff.), whereas Plato had ascribed movement to self-moving soul. Hence 'we can say that the dynamic character of nature in Zeno's definition owes its existence to Aristotle's conception of nature as a principle of movement' (Hahn 206). Similarly E. Grumach 47, writes 'hence Aristotle defines φύσις as the immanent purpose that subdues and shapes matter from inside. Thus the Stoic conception of nature goes back in its essential determination to Aristotle, and is only possible by way of the Aristotelian.'⁸⁵

One cannot deny the possibility of influence, but one may deny its necessity, at any rate by way of the 'school-books'. Already in the *Protrepticus* Aristotle had associated nature and craft, μιμείται γὰρ οὐ τὴν τέχνην ἢ φύσις ἀλλ' αὐτὴ τὴν φύσιν (frag. 11 Ross, Jaeger (1923) 75-6). This was always his view of their relation, and it should be noted that for Zeno it was not the same; for him craft is not something that *imitates* nature, but something that is *possessed* by nature. The same fragment of the *Protrepticus* treats nature as a primary cause; ζῶων γὰρ καὶ φυτῶν αἰτία φύσις and τὰ μὲν γὰρ ἔοικεν αὐτῇ δύνασθαι δι' αὐτῆς ἢ φύσις ἐπιτελεῖν καὶ βοηθείας οὐδὲν δεῖσθαι. It would be possible, then, to see in the *Protrepticus*, of which Zeno is known to have been aware (see above p. 13), the ground in which there grew his conception of nature as a directing force with the skills of a craftsman. It is not necessary, therefore, to suppose him to have also been acquainted with the school-works.

But we must also enquire whether any Aristotelian influence is needed to account for the Stoic conception. That conception has a notable connection with Platonism. Zeno's definition of nature was used by the Stoics to describe God, who was according to Aetius 1, 7, 33, *SVF* II 1027, πῦρ τεχνικὸν ὁδῶ βαδιζὼν ἐπὶ γένεσιν κόσμου. That is to say cosmic, universal φύσις, what makes all things grow as they do, is identical with God, the architect and builder of the universe. God was also the soul of the universe (*SVF* I 532 (Cleanthes), II 604 (Chrysippus), III 216. 32 (Diogenes)). Now Plato had made soul the source of movement (finally in *Laws* 892-899), and for the Stoics God, being soul, was the source of movement. For Plato soul was a self-moved mover. Aristotle was unable to accept that concept (*Physics* VIII); for him everything that moved must be moved by something else. He found himself led by the necessity of avoiding an infinite regress to posit as the ultimate source of motion an unmoved mover that caused movement by being an object of desire. There is among the Stoics no trace of awareness of this dispute. They found no difficulty in conceiving God as a self-moved mover.⁸⁶

It having been thus established that the Stoic conception of nature agrees in one respect with Platonic rather than Aristotelian thought, the question must be faced whether Platonic influence alone would be adequate to account for it. There are two features which may be seen to demand an Aristotelian origin, the similarity of nature and craft implied in the definition of φύσις as πῦρ τεχνικόν, and the

dynamic character of nature. So far as the latter point goes, it is impossible to find in Plato (or for that matter in the *ipsissima verba* of any of the pre-Socratics) any direct statement that attributes such a character to nature. Indeed if φύσις, as being opposed to τέχνη, is to be identified with τύχη, Plato would deny that it is a ruling force in the universe (*Laws* 889). Yet it was common Greek practice to say that things happened φύσει, 'by nature'⁸⁷ and the word was associated with γένεσις, 'becoming'. Plato argued that nature and its products were the offspring of craft and intelligence (ἐκ τέχνης ... καὶ νοῦ, *Laws* 892b). By 'nature' he meant the basic physical entities of the universe, entities to which soul, and therefore τέχνη, were prior.

No evidence shows how, or even whether, these ideas were developed in the Academy. But perhaps Zeno's position can be seen as directly derived from them. He did not share Plato's belief that soul was something immaterial; for him it was a corporeal thing; soul could not be prior to matter. The material universe could not then be derived from soul or soul's qualities, craft and intelligence. But if what Plato had separated were to be amalgamated, then φύσις would not be directed by τέχνη, but itself possess τέχνη; it would be τεχνικός. It would itself possess νοῦς, itself be the source of change.⁸⁸

It may be worth notice that the adjective τεχνικός, found in the definition of φύσις as πῦρ τεχνικόν, occurs almost 40 times in Plato, usually implying knowledge how to make something or to bring something about. It is therefore very apposite in the Stoic definition of 'nature'; φύσις knows how to change the universe. Aristotle's view that τέχνη *imitates* φύσις is on the other hand not relevant. Incidentally that view plays little part elsewhere in Stoic philosophy or Stoic literature;⁸⁹ it does not appear in anything that is there said specifically about τέχνη. I should not wish to deny the *possibility* of Aristotelian influence, but I remain sceptical of its necessity or even of its probability.

(vi) *Categories*⁹⁰

The name 'categories' is applied by modern writers to four terms used by Stoic philosophers: ὑποκείμενον 'substrate', ποιόν 'qualified thing', πως ἔχον 'thing in a certain state', πρὸς τι πως ἔχον 'thing in a relative state'. The word κατηγορία is never applied to them in any ancient text, and it is therefore improbable that it was used by the Stoics themselves.⁹¹ But this Stoic quartet was seen by Simplicius as a rival to Aristotle's ten categories,⁹² and modern scholars who have taken it to be an intended improvement on his scheme⁹³ think it appropriate to use the name 'categories' of the Stoic terms also. Whether that is misleading must now be considered.

The four terms are not associated in any text earlier than Plotinus (*Enn.* 6.1.25, *SVF* II 371), who treats them as an exhaustive division. The only other author to associate them is Simplicius *in categ.* 66. 32 Kalbfleisch, *SVF* II 369, who ascribes the division to the Stoics. But it may be implied by Plutarch, *comm. not.* 1083 E

τέσσαρά γε ποιούσιν ὑποκείμενα περὶ ἕκαστον; this is of course a hostile and incorrect interpretation of Stoic doctrine.

A few scholars have remained sceptical of any connection between the Aristotelian categories and the Stoic 'categories'. For example S. Sambursky (1959) 17 notes that the Stoic categories have 'hardly anything in common with the Aristotelian classification' and that they belong to physics, not to logic, cf. Bréhier (1957) 132; Pohlenz (1947) II 39: 'Die grundsätzliche Verschiedenheit zwischen der stoischen Vierteilung der γένη τοῦ ὄντος und der aristotelischen Kategorienlehre wird meist verkannt'. Gould (1970) 107 writes 'this material does not provide sufficient evidence for ascribing to Chrysippus a *doctrine* of categories. Rather does he seem to have employed them occasionally without giving them any special significance'. With them I agree and would add some further considerations.

The first term, ὑποκείμενον, 'substrate', would seem to be an 'odd man out' in the group, as Plotinus argues (*Enn.* 6.1.25, *SVF* II 373). Whereas the other terms refer to corporeal objects, primarily it refers, so it is said, to a constituent, ἀποτιος ὕλη, of such objects, which does not exist as such but is always in fact qualified. Secondly it refers to real things, like the bronze of a statue. This distinction between two kinds of ὑποκείμενον comes from Dexippus *in categ.* 23 25 Busse (*SVF* II 374) = Porphyry quoted in Simplicius *in categ.* 48. 11 Kalbfleisch, who ascribes it to 'the Stoics and the older philosophers'. If this is to be believed, it must be on Porphyry's word. The distinction is not found elsewhere.

It is in fact remarkable how little evidence there is for the use in Stoic sources of the word ὑποκείμενον to mean 'substrate',⁹⁴ although another meaning is found. The word is not used at all by Epictetus. In Marcus Aurelius it is fairly frequent, but always in the sense of 'external object', 'object of attention' (5.10.3, 6.4, 6.23.1, 7.29.5, 8.22.1, 8.24, 9.3.5, 10.18, 11.17, 12.20.5). Sextus, talking of the Stoics, uses the phrase τὸ ἐκτὸς ὑποκείμενον, 'the external object' (*adv. M.* 8.12, *SVF* II 166, cf. *ibid.* 9.353, *SVF* II 80 and Galen in *SVF* II 79). It occurs similarly in non-Stoic contexts, Sextus, *PH* 1.54, 48, cf. Lucian, *quomodo historia* 43. Chrysippus used the word ὑποκείμενον in the same way, *SVF* III 466 ὅταν μὴ ὁμοίας τὰ ὑποκείμενα φαντασίας ποιῆ. Whatever it means in the title of a book by Chrysippus, Περὶ τῶν κατὰ τὸ ὑποκείμενον ὀρισμένων ἐκφορῶν (*SVF* II 14), it is not 'substrate'. The only other instance I have found in *SVF* is in a verbatim quotation, never to my mind explained, from Chrysippus, where the sense 'substrate' is generally accepted and seems probable (Philo *de aeternitate mundi* 48-9, *SVF* II 397)⁹⁵.

The three other terms are all used by Aristotle, but one need not see him as a pioneer. They were quite possibly part of the Academy's philosophic vocabulary. ποιόν is one of Aristotle's categories, unlike ὑποκείμενον, but the indefinite ποιός is not uncommon in Plato, e.g. *Theaet.* 182a 7, τὸ δὲ ποιοῦν ποιόν τι, ἀλλ' οὐ ποιότητα. In the seventh *Letter* at 343b 8, there is a contrast between ποιόν and ὄν that recalls the Stoic distinction between ποιός and οὐσία: δυοῖν ὄντων, τοῦ τε ὄντος καὶ τοῦ ποιού τινος, 'although Plato's ὄν is not that of the Stoics. The phrase

πρός τι πως ἔχειν is thrice repeated in the *Categories* (8 a 32, b 1, b3); Aristotle has it also at least at *EN* 1101 b 13 τῷ ποιόν τι εἶναι καὶ πρὸς τι πως ἔχειν and *Physics* 7. 247 a 2), but he introduces it as if it were familiar, and indeed uses it in the same way in the *Topica* (142 a 28, 146 b 4), and one may guess that it was a term known in the Academy and that Zeno learned it there. The third term, πως ἔχειν, does not occur in the *Categories* and is (I think) not common in Aristotle; the only instances given in Bonitz's Index have the reverse order of words, ἔχειν πως (*Pol.* 1302 a 23), ἔχοντων πως (*Met.* 1048 a 18), but it omits πως ἔχοντα (*EN* 1105 a 28), πως ἔχων (*EN* 1105 a 31), and possibly others.

(vii) *Void*

I include this subject with hesitation, since I find it hard to see any plausibility in the supposition of Aristotelian influence. But the fact that the Stoics did not so far as is known concern themselves with his claim that void is impossible may indicate that they did not know it.

The Stoics maintained that there was infinite void, or empty space, outside the cosmos. That there was some void was made necessary by their doctrine of periodic world-conflagrations. Fire occupies more space than an equivalent amount of any of the other elements which are then transmuted to it. Accordingly, when the world is all fire it must take up more room than when it is, as now, a mixture of the four elements; there must be room into which it can expand. That the void stretched away limitlessly⁹⁶ was established by an argument used by Plato's Pythagorean friend Archytas (*SVF* II 535; *DK* 47A 24): if a man be imagined at the edge of the cosmos, can he push his arm outside it? if he can, there must be space to receive it; if he cannot, there must be some resistant body that occupies space outside; he may then, whichever is true, be placed in imagination at the outer edge of the space thus established; again he thrusts out his arm, and so on ad infinitum. Archytas' use of the argument was reported by Eudemus in his *Physics* (fr. 30), and a sharper version of it, spear substituted for arm, appears in Lucretius (l. 968), who (*pace* Bailey) may well have had it from Epicurus. It is more likely that the argument was one in current circulation than that the Stoics, or Zeno if he used it, had it from Eudemus, who rejected it and gave grounds for the rejection.

Aristotle argued against the existence of void anywhere, and at two places reasons are given by him for rejecting the idea of a void outside the cosmos. (1) At *de caelo* 1.279 a 11-18 he says that a void is a place in which a body could be, but he has shown that there can never be any body outside the cosmos. Therefore there can be no void either. This argument assumes the truth of his belief that what is possible must sometimes occur. (2) At *Physics* 3. 203 b 28-30 he says that 'if there is void and infinite space [outside the cosmos], there must also be body; in things that are eternal there is no difference between possibility and existence'.

There is no sign that the Stoics paid any attention to these passages, and even if they knew them, they would have regarded them as having no force, since they

neither believed the cosmos to be eternal in its present form nor accepted the view of possibility that Aristotle adopted.⁹⁷ Hahm, however, is not deterred. He constructs from Aristotelian premises an argument which Aristotle would doubtless have accepted, although he did not use it. Two bodies are required to define place, a container and a contained; since there never is any body outside the cosmos, there can be no place and so no void, which is defined as place deprived of body. Hahm maintains (105) that Chrysippus consciously avoided this difficulty by not defining void in terms of place; for him void was 'what can be occupied, but is not occupied, by something that exists, i.e. something corporeal (*SVF* II 535, cf. 505, 543)'. This is more ingenious than convincing. In ordinary usage τόπος is not space but the position of some thing; accordingly Chrysippus, and for all we know Zeno, would be under no temptation to use the word in defining void.

(viii) *Cosmology*

The Stoic cosmos, in the sense of διακόσμησις, had a sphere of earth around its centre, surrounded by hollow spheres of water, air, and aether (a form of fire), in that order. This was an obvious and traditional description, already given by Empedocles and probably assumed by Plato in the *Timaeus* (F. M. Cornford (1937) 246, 265). It was also Aristotle's model, except that he had five spheres, for beyond that of fire was one of an unnamed element which, unlike the other four, had a circular, not a rectilinear, motion.⁹⁸ Is there any reason for believing that he affected the Stoics?

Their outmost sphere revolved, like his; this was perhaps a natural concept, the rotating sphere of fire accounting for the visible rotation of the fiery sun and stars. But Plato had gone further, making circular motion an attribute of the world-soul, which communicated it to the whole cosmos. The Stoics, like Aristotle, contrasted the rectilinear motion toward or away from the centre characteristic of air, water, and earth with the circular motion of the aether in their case, of the unnamed fifth element in his. It seems very possible that they adopted his scheme with a slight simplification. But they need not have known *de caelo*. The scheme was already in *Περὶ φιλοσοφίας* (frag. 19b and 21 Ross, 20 and 24 Rose³).

Zeno, who was followed in this by Chrysippus, explained the stability of the cosmos by an argument that earth and water moved towards its centre because they were heavy, while air and fire, although weightless and therefore given to mount upwards and occupy a place towards the circumference, were also drawn towards the centre. This is reported by Stobaeus, *Ecl.* 1.19.4, taken from Arius Didymus (fr. phys. 23 Diels, *SVF* I 99): 'Zeno's view. The parts of every thing that in the cosmos has come into being with its own peculiar condition have their motion towards the centre of the whole thing' [i.e. every identifiable object is cohesive], 'and similarly with the parts of the cosmos itself. Therefore it is rightly said that all the parts of the cosmos have their motion towards the centre of the cosmos, and particularly those

that have weight. The same thing is responsible for the cosmos's being stationary in the boundless void and for the earth's being similarly stationary in the cosmos, established in an equally-balanced manner around its centre. But body does not necessarily have weight; air and fire are weightless (ἄβαρῆ). But these also are in some way drawn (τείνεσθαι Diels; γίνεσθαι MSS: κινεῖσθαι Meineke) to the centre of the whole sphere of the cosmos, yet they accumulate towards its circumference, since they naturally mount upwards through having no weight. In the same way they deny that the cosmos itself has weight, because its whole composition is of elements that have weight and others that are weightless (ἄβαρῆ). They hold that the earth of itself has weight, but in view of its position, because it occupies the middle ground (and the motion of bodies of this kind is towards the centre) it remains in that place'.

Hahm writes (113) 'it is surely obvious that the fundamental concepts in Zeno's argument, namely weight, weightlessness, natural movement and cosmic places are derived from Aristotle'. This claim must be examined. One indication he neglects, perhaps rightly thinking it of little value: the word ἄβαρῆς first occurs in surviving literature at *de caelo* 1. 277 b 19 and there with regard to the position of the elements in the cosmic sphere; it is also to be found at *Met.* 1004 b 14. The possibility of Zeno's having learnt the word from Aristotle cannot be excluded, but the coincidence would have more force if they had both used the word deliberately, making it something other than a synonym of κοῦφος 'light'. But there is no sign of this; later Stoics used κοῦφος of air and fire without hesitation (*SVF* II 571, 473, 555).

It is to be noticed that, as Hahm himself points out, Aristotle uses the 'fundamental concepts' otherwise than Zeno. He starts from the natural positions of the elements; those cause their natural movements, as each tries to reach its natural place; and weight is caused by the tendency of earth always to move downwards and of water to move downwards if in air. For the Stoics the relations are reversed. It is weight that causes the centripetal motion, and it is the centripetal motion that brings about the position of the elements. It is conceivable that they arrived at their view by a deliberate rearrangement of the Aristotelian concepts, but hardly necessary. The idea that weight would cause a centripetal motion was all that was needed to give rise to Zeno's scheme.

Now Hahm argues that it was Aristotle who first made weight an absolute quality of things, so that Zeno must have been dependent upon him (133 n.60). It is true that for Plato heaviness, a better translation of βάρος than 'weight', was in Cornford's words (266) the name of 'an affection we feel, rather than of any property independently existing in the bodies outside'. It is also true that for Democritus weight was, in the view of many scholars, not an absolute quality of atoms but first contributed to them by their movement in the vortex. But the careful discussion of D. O'Brien (1979) 401-26, shows that the majority of the evidence is against that view.⁹⁹ In earlier literature the words βαρύς and βάρος are

predominantly used of things which are a burden on something else. But that does not mean that the writers did not think the thing that was βαρύ to be heavy in itself. That is the common-sense view against which Plato's relativism may be seen as a philosopher's protest. So when Parmenides wrote αἰθέριον πῦρ, ἤπιον ὄν μέγ' ἔλαφρόν and νύκτ' ἄδαῆ, πυκνὸν δέμας, ἔμβριθές τε (DK 28 B 8.56-9) he did not mean that in the illusory world of seeming fire and night seemed to *seem* light and heavy, but that they seemed to *be* light and heavy. I do not think therefore that Zeno had to read *de caelo* before he could find absolute qualities in lightness and heaviness.

What may be more plausibly ascribed to Aristotelian influence is the Stoic belief that κοῦφος is absolutely opposed to βαρύς. A thing that is light is not less heavy than one that is weighty; it is not heavy at all, it has a natural movement upwards, whereas what is weighty or heavy has a natural movement downwards. This is the Aristotelian view in *de caelo*,¹⁰⁰ which he distinguishes from that of previous thinkers, of whom some had believed that everything had weight (*de caelo* 4. 311 b 16 οἴονταί τινες πάντ' ἔχειν βάρος); for them 'light' must have meant 'less heavy'.

The second opinion ascribed by Arius, perhaps to Zeno, certainly to the Stoics, according to which the cosmos has no weight, as being compounded of weighty and weightless elements, must have been intended to support its immobility in the infinite void. It was so used by Chrysippus (*SVF* II 555, Achilles, *Isagoge* 4): 'just as the cosmos would be carried downwards if heavy, so upwards if light; but it remains where it is because it has what is heavy equal to what is light'.

What is for our purposes most striking about this argument¹⁰¹ is that it assumes the effect of weight to be movement downwards in the void, whereas in the earlier part of what Arius ascribed to Zeno its effect was movement towards the centre of the cosmos, and that was considered to be adequate reason for the immobility of the cosmos in the void. Adequate it would have been, if there was no up and down in the void. Weight causing a downward movement, down being towards the centre of the cosmos and up away from it, its only effect would be movement towards the centre, and the forces resulting from the surrounding sphere would be in equilibrium.

But the centripetal effect of weight is not logically incompatible with its also causing a fall downwards through the void. An object might in theory simultaneously fall towards the centre of the cosmos and down in the void along with the cosmos as a whole. The Stoics seem to have held that the cosmos did not in fact fall because it was, taken as a whole, weightless. The earth, however, was weighty; why should it not fall through the void, while fire and air rose? The answer would be that the cosmos was a unity, a living being held together by the airs which penetrated it, so that its heavy and light parts would no more come apart than would the limbs of a man thrown into the sea.

This would have been a satisfactory reply were it not that the Stoics held that in the infinite void there is no up and down. Plutarch wrote: 'It is frequently asserted by Chrysippus that outside of the universe there is infinite void and that what is

infinite has no beginning, middle, or end; and this the Stoics use especially to annihilate the downward motion which Epicurus says the atom has of itself, their contention being that in an infinite there is no difference (*διαφορᾶς*) by which to distinguish one part as being up and the other down' (*Stoic. Rep.* 1054 B-C, trans. Cherniss, *SVF* II 539). Now this is very similar to something in Aristotle. In arguing that motion in a void was impossible, he had said (*Phys.* 215 a 8-10) that 'inasmuch as it is boundless, there will be no up or down or centre, and inasmuch as it is void, there will be no difference between up and down (for just as no difference exists in nothing, so there is none in void)': ἡ μὲν γὰρ ἄπειρον, οὐδὲν ἔσται ἄνω οὐδὲ κάτω οὐδὲ μέσον, ἡ δὲ κενόν, οὐδὲν διάφορον τὸ ἄνω τοῦ κάτω (ὥσπερ γὰρ τοῦ μηδένοιο οὐδεμία ἐστὶ διαφορὰ, οὕτω καὶ τοῦ κενοῦ). This was part of his case against the existence of void. The possibility must be admitted that Chrysippus was stimulated by this one sentence in an argument that otherwise carried no conviction with him, although in view of our incomplete information it would be hard to feel confident that Aristotle was the first philosopher to make the point.

When Chrysippus employed the argument that the cosmos did not fall because it was weightless, was he unaware that it was invalid as using the terms 'up' and 'down', inapplicable to the infinite void? If so, perhaps he had not yet met and adopted the view expressed by Aristotle that there was no up and down in the void. Or was he using an *ad hominem* argument against anyone¹⁰² who did not go along with that view? Perhaps he said 'if there is 'up' and 'down' in the void, as Epicurus maintains, the cosmos will nevertheless not fall, as he thinks'. One must find it improbable that he used the argument of weightlessness, inconsistent as it is with his normal doctrine that in the void there is no up and down, in knowledge of that doctrine, as if the argument were sound.¹⁰³

(ix) *The Soul*

There is no sign that the Stoics were aware of the revolutionary theory of Aristotle's *de anima*, which made the soul (*psyche*) 'the first actuality of a natural body with organs and possessing life'.¹⁰⁴ At first sight their own view, which made it a material thing, a 'breath', described as a compound of air and fire, is diametrically opposed. Yet *pneuma* was for Aristotle something without which there would be no life, no *psyche*. So far as we know, it was he who invented the idea of σύμφυτον πνεῦμα, 'connate breath', something found in all living creatures and distinct from the breath of respiration, which is absent from e.g. insects and the embryos of mammals. The phrase occurs not infrequently in his biological writings.

The same two words were used by Chrysippus at the beginning of a verbatim extract from the first section of his *Περὶ ψυχῆς* (Galen, *Plac. Hipp. et Plat.* 5.251, *SVF* II 885): ἡ ψυχὴ πνεῦμά ἐστι σύμφυτον ἡμῖν συνεχὲς παντὶ τῷ σώματι, διήκον ἔστ' ἄν ἡ τῆς ζώης εὐπνοία παρῆ ἐν τῷ σώματι. 'Our soul is a connate breath, continuous with the whole of the body,¹⁰⁵ through which it passes so long as the fair

breath¹⁰⁶ of life is present in the body'. Here then Chrysippus used Aristotle's phrase *σύμφυτον πνεῦμα*. He may have inherited it from Zeno, from whom he certainly had the idea of a connate breath.¹⁰⁷ Did the idea and the name both come from Aristotle? If Aristotle was the first to speak of a *σύμφυτον πνεῦμα*, it would seem mere obstinacy to deny his influence on the Stoics, and Wiersma admits, (1943) 199-200, that Zeno owed the notion of *pneuma* to him.¹⁰⁸ Although the functions of the Aristotelian 'innate breath' are much more limited than those of the Stoic, there is in common the basic feature of being distinct from the breath of respiration. Yet the differences are large. For the Stoics it is the soul, for Aristotle only the tool of the soul. For them it is responsible for movement, sensation, and thought; for him for movement only. For them it is absolutely warm; for him something that can give warmth, but that can also cool overheated blood. In view of these differences one may at least canvass the possibility that both were independently influenced by theories proposed by doctors.

The close association of medicine and philosophy has often been remarked. The latter part of the *Timaeus* evidences Plato's debt to the doctors. The eminent Sicilian physician Philistion seems to have visited the Academy (Diog. Laert. 8.86, [Plato] *Ep.* 314e, and possibly Epicrates, frag. 10 Kock). W. Jaeger has shown in *Diokles von Karystos* (1938) that Diocles, so famous in Athens as to be called a younger Hippocrates, exhibits connexions with the thought of Aristotle, whose pupil he believed him to have been. Although there is no evidence of personal contact between an early Stoic and a famous doctor, Diocles' pupil Praxagoras was roughly Zeno's contemporary, although perhaps a few years older, and influential in Athens.¹¹⁰ Praxagoras seems to have identified the soul with a *pneuma* that stretched through the body. No fragment states this explicitly, but it seems a reasonable inference. F. Steckerl (1958) 21 writes 'for Praxagoras the soul, obviously, was nothing other than the *pneuma* or even better the *pneuma* in the heart'. By this he must mean that the controlling element of the soul was in the heart (cf. frag.62, 'the natural function of the heart is thinking', cf. frag.72), from which the *pneuma* that, as he maintained, filled the arteries carried instructions.

Unfortunately there is no evidence that any of these doctors used the phrase *σύμφυτον πνεῦμα*. According to Galen, *de trem. palp. conv.* 6 (7.14 Kühn) Praxagoras was one of innumerable doctors *ἄσσοι τὸ θερμὸν οὐκ ἐμφυτον ἀλλ' ἐπίκτητον εἶναι νομίζουσιν*. Since the *πνεῦμα* of animals is warm, this may imply that it is not *σύμφυτον*.¹¹¹ Galen, it is true, ascribes to him a belief in *ἐμφυτος θερμασία* at *de nat. fac.* 2.8, but Steckerl argues that to be a mistake.

Although Philistion and Diocles did believe in an innate warmth, the phrase *σύμφυτον πνεῦμα* does not occur in any of the fragments of Philistion or Diocles, yet there is nothing to indicate that they did not accept the idea. They even said that breathing was *τῆς ἐμφύτου θερμασίας ἀνάψυξις τις*, Galen, *de usu respir.* (1.1.ii, 4.471 Kühn).¹¹² W. Jaeger (1938) 215-6 argues that the absence of the phrase may be no more than accident; he feels that 'one does not get the impression that Aristotle is

introducing for the first time ideas that were later to be so much used; he seems to suppose them to be current among his hearers.' Whatever the justification for Jaeger's feeling and whatever the similarity of Zeno's views to medical thought, the fact remains that Aristotle is the only man actually known to have used the phrase σύμφυτον πνεῦμα before him. Whether we must see direct or indirect influence or even none at all is a question on which it will be prudent to keep an open mind.¹¹³

(x) *Cosmobiology*

Under the heading of cosmobiology Hahm discusses the Stoic belief that the cosmos, as a living being, has a ψυχή, a 'soul'. This was in the Platonic tradition, and like Plato (cf. Sextus Empiricus, *adv. M.* 9. 104-7, *SVF* I 110-1) Zeno held this 'life-force' to be rational. He also argued that it was possessed of sensation (*SVF* I 114), which was for a Stoic inextricably connected with reason. Whether Plato ascribed sensation to his world-soul is not an altogether easy question. He seems never to do so in so many words, and Aristotle confidently writes of him at *de anima* 407 a 3 τὴν γὰρ τοῦ παντός (sc. ψυχὴν) δῆλον ὅτι τοιαύτην εἶναι βούλεται οἷον πότ' ἐστὶν ὁ καλούμενος νοῦς· οὐ γὰρ δὴ οἷόν γ' ἡ αἰσθητικὴ. Some, e.g. Hicks *ad loc.*, think that sensation arose only when bits of soul were embodied in man or beast, but Cornford 96 is of other opinion: 'But the World's soul is not pure intelligence; being united with a perceptible body, it may be imagined as having internal feelings, which would be covered by the word *aisthesis*'. When Zeno called the world-soul sentient he must have thought of such 'internal feelings', for it too is united with a perceptible body.

We are better informed about Cleanthes, although it cannot be known how much of his treatment was in fact inherited from Zeno. It may have been he who borrowed two arguments from Aristotle's *περὶ φιλοσοφίας* (see above p. 14), although this is not certain.¹¹⁴ Are there other traces of Aristotelian influence? Hahm is unable to find much, except for one claim. He believes that Cicero, *N. D.* 2.23-44, is in large part derived from Cleanthes, who is twice appealed to as a witness. This is probably right. A basic thread in the Stoic Balbus' discourse here is that God, who is the world's soul and is fire and warmth, has three consequences parallel to those of soul in man: he is responsible for the world's maintenance, for its sensation, and for its intelligence. Hahm (146) sees a remarkable coincidence here with Aristotle's distinction between the nutritive, perceptive, and rational faculties of the soul. Although according to Balbus the soul 'holds together' and 'preserves' the world rather than 'nourishes' it, preservation as well as nutrition is for Aristotle part of the work of τὸ θεραπευτικόν (*de anima* 416 b 11-19), and for Balbus 'feeding' of the microcosm is parallel to preservation of the macrocosm. So there is no difference here. Where there is a difference is in the fact that Cleanthes identifies soul with fire, whereas Aristotle insists that fire is the *tool* of soul in its nutritive aspect, and gives it no role at all in the sensitive and intellectual aspects. So if Cleanthes was affected by

Aristotle, he accepted only what suited him and disregarded the rest. That may be thought no improbability.

Accordingly, Aristotelian influence on Cleanthes must be kept in mind as possible. But that does not mean that it is a necessity. Other possibilities must be considered. Sensation and intelligence as activities of the world-soul were inherited from Zeno; did Cleanthes need Aristotle's psychology before adding that it maintained the world? When the ψυχή leaves the body of an animal, the body decays; it was natural therefore to think that the ψυχή maintains the animal's body (cf. Plato, *Phaedo* 87d-e). Analogy would easily suggest that the world-soul performed the same function for the world. There is no need to bring Aristotle in.

Perhaps Zeno already made the world-soul hold the cosmos together and it is mere chance that our sources do not mention it. If so, considerations of the same kind apply. The sensation and the intelligence of the world-soul were legacies from Plato; maintenance by it of the world would be an easy addition. Aristotelian influence on him cannot be excluded, nor is it necessary.

(xi) *Cosmic cycle*

At first sight the Stoic belief that the world goes through an eternally repeated cycle, by which it turns completely to fire in a conflagration and is quenched into water and from that water spring the elements to constitute another world identical with the preceding one in form and change and events, appears to be a contradiction of the Aristotelian world, which is eternal in structure and subject to irregularity only in the sublunary regions. Hahm, however, argues (190-5) that the Stoics were affected not only by the Pythagorean doctrine of cyclical recurrence and by the conflagration which they, like Aristotle, read into the sayings of Heraclitus, but also by Aristotle's *de caelo* I. 279 b 17-280a 34, where he reviews the question of the eternity of the cosmos. Aristotle there concedes that the cosmos may be eternal, even if subject to cyclical change; its body (σῶμα) will exist continuously, but its dispositions (διαθέσεις) will perish (280 a 11-23). He seems to regard this as a view that is logically possible, although untrue of the universe as it is. Something similar was the view that the Stoics accepted as a true account, but did they arrive at it independently or by reading Aristotle or hearing his opinion?

Hahm thinks that they 'appropriated Aristotle's theory completely' (193)... 'with only slight changes in some of the terminology'. The supposed change is perhaps not so slight. They did not distinguish, as did his theory, between an eternal cosmos and perishing dispositions of the cosmos, but said that κόσμος had two or more senses: in one sense, τὸ ἐξ ἀπάσης οὐσίας ἰδίως ποιόν, it was eternal, in another, heaven and earth and all that lies between, it was perishable (*SVF* II 526, 527). What was eternal in Aristotle's theoretically-possible scheme was the material, the body of the cosmos; in theirs it was the principle or force that made the cosmos what it uniquely was, what we call god or Zeus, who is the ἰδίως ποιός of the cosmos (*SVF*

II 396, 1064 Plut. *comm. not.* 1077 D-E). On the other hand I cannot see in Aristotle's words anything ignorance of which would have hindered the formation of the Stoic doctrine.

Hahm finds significance in the fact that the Stoics frequently used the words διακοσμεῖν and διακόσμησις of the passing order created in the cosmos, since Aristotle used the phrase ὅτε μὲν οὕτως ὅτε δὲ ἐκείνως διατίθεται καὶ διακεκόσμηται (*de caelo* I.280 a 20). But it is easier to suppose both to have taken the word from current usage than that the Stoics learnt it from Aristotle. They had an excellent precedent in Anaxagoras, who had written (DK 59 B 12) καὶ ὅποια ἔμελλεν ἔσσεσθαι καὶ ὅποια ἦν ἄσσα νῦν μὴ ἔστι, καὶ ὅσα νῦν ἔστι καὶ ὅποια ἔσται, πάντα διεκόσμησε νοῦς. Aristotle himself uses διακόσμησις in *Metaph.* A 986 a 6 as if it were a familiar word. The variant διάκοσμος is in Parmenides (DK 28 B 8.60) and was used as a title for works by Leucippus and Democritus.

(xii) Time

Stoic views of time, when discussed at all, have usually been seen as developed from the Aristotelian.¹¹⁵ The derivation has some plausibility, but is less secure than its proponents imagine. We possess in *Physics* 4. 217b-219b Aristotle's careful argument, which leads him to the conclusion that time is 'the measure and number of movement with regard to earlier and later'. From Zeno we have simply his conclusion that time was 'the interval of movement' (*SVF* 193). We can only guess how he arrived at it.¹¹⁶ S. Sambursky suggested ((1959) 101) that he substituted 'interval of movement' (διάστημα κινήσεως) for 'number of movement' (ἀριθμὸς κινήσεως) because of Strato's criticism of the Aristotelian phrase, based among other things on the observation that number is discrete, while time is continuous (Simplicius, in *Physica* 788.36-790.29 Diels). This is of course possible, but another possibility is at least as likely, namely that Zeno proceeded from discussions in the Academy, which may have originated in the treatment of time in the *Timaeus*, where it had been seen as something caused by the movements of the heavenly bodies. Interest in time there is confirmed by Speusippus' definition of it as τὸ ἐν κινήσει ποσόν, 'the quantity contained in movement', (Plutarch, *Quaest. Plat.* 1007 A, *SVF* II 515). Strato himself went back to this, saying that time was τῶν ἐν κινήσει καὶ ἡρεμίᾳ ποσόν (frag. 78 Wehrli, Aetius I.22.4).

Speusippus' definition already almost contains the two concepts of Zeno's. Movement is common to both, and Zeno's 'interval' or 'dimension' involves Speusippus' 'quantity'. But both definitions suffer from ambiguity because they do not specify the field in which measurement is to take place. Time is not the measure of movement in space. Aristotle had avoided this ambiguity by including in his definition the words 'with regard to earlier and later'. If Zeno had taken his start from Aristotle, surely he would have retained this essential addition.

Chrysippus argued that since time was infinitely divisible what we call present

time consists in fact of time that has passed and time that is to come (*SVF* II 509). Strictly speaking there is no such thing as present time (μηθένα κατ' ἀπαρτισμὸν ἐνεστάναι χρόνον, *SVF* II 509; ἐνεστῶτα δὲ μὴ εἶναι χρόνον, *SVF* II 519).¹¹⁷

: This view has a great similarity to the conclusions reached by Aristotle in *Physics* 4, that there is no smallest unit of time (220 a 31) and that 'now' is not a time but a moving point or boundary between two stretches of time (222 a 33-b2., 219 b 10-12.). Chrysippus may have borrowed Aristotle's conclusions with or without acknowledgment. But this is an instance where it would be by no means improbable for two thinkers to arrive at the same result independently. It may be significant that there is no evidence that Chrysippus identified 'now' as a point or boundary: this may merely mean that we are ill-informed. But according to our sources he simply denied the existence of present time, a less subtle procedure.

Dr Sedley has drawn my attention to Plato, *Parmenides* 152c and 156c as passages from which the idea of an instantaneous present as a moving borderline between past and future could have been developed. It has also been made clear by N. C. Denyer (1981) 34 that Diodorus Cronus was the origin of Sextus, *adv. Math.* 10.119, where it is argued that if present time is (infinitely) divisible, it will be divided wholly into past and future. If Chrysippus needed prompting, one may think it more likely that he was stimulated by Diodorus, with whose arguments he elsewhere concerned himself and with whom Zeno had studied, than by Aristotle's *Physics*. Diodorus may of course have known Aristotle's treatment of the subject; he may have been in Athens during Aristotle's last years (Sedley (1977) 80). Sedley also believes Diodorus to have read Aristotle's *Physics* VI (ibid. 86). If this is right, he may also have read *Physics* IV; but he may have heard reports of Aristotle's teaching, or even heard some of his lectures. But that is a matter for speculation. Aristotle is the first philosopher known to have maintained the infinite divisibility of time; but even if he was also in fact the first, it does not follow that others did not independently discuss its possibility and consequences.

(xiii) *The road from Sensation to Reason*

There is a striking similarity between the Stoic account of the formation of conceptions and of reason and that given by Aristotle in *Posterior Analytics* 2.19.99b35-100a9. Aetius 4.11, under the rubric 'How sensation and the conception and internal thought arise', writes:

The Stoic statement: when man is born he has the controlling part of his soul like a sheet of paper suitable for writing on. On this he gets each of his conceptions inscribed. The first way of inscription is by way of his sensations. For sensing something, e.g. white, men have a memory of it when it has gone. And when there are many memories of the same kind, then we say we have experience. For experience is a number of presentations of the same kind. But of conceptions some arise naturally in the aforesaid ways and without

contrivance, while others come through our instruction and attention. The latter have no name but that of conceptions (ἐννοιαί), the former are also called preconceptions (προλήψεις). But reason, by virtue of which we are called rational, is said to be made up from the preconceptions in the first seven years (*S/F* II 83).¹¹⁸

The parallel passage in Aristotle is as follows (99 b 36):

Animals have the power of sensation. In some there is persistence of the object of sensation, in others not. In those where there is none there is no knowledge beyond sensation, either absolutely or in those instances where there is no persistence. Where it does occur, it is possible for them when having a sensation to retain something in their soul. There are many animals of this sort, but they differ in that in some of them reason arises from the persistence of such things, and in others it does not. So from sensation comes memory, as we say, and from frequently occurring memory of the same thing experience; many memories make one experience. From experience or from [does this mean *And from* or *that is from?*] every universal that has become established in the soul, (the one beside the many, whatever is identical in all those things), comes the origin of skill (τέχνη) and knowledge (ἐπιστήμη).¹¹⁹

The similarity between Aristotle and the Stoics is plain and it may be right to suppose that they developed what he had begun, whether they were aware of it directly or indirectly. We have seen that the *Analytics* may have been available: Epicurus had heard of them at the least and they are in Diogenes Laertius' (?Hermippus') list of Aristotle's works. But there was another work, and a well-known one, from which the Stoics may have learned Aristotle's views. The story of the development from sensation to knowledge is told with the same stages in the first chapter of *Metaphysics* A, 980a 27-981 a 2. Now this chapter contains matter from the *Protrepticus* (Jaeger (1923) 68-72), notably 980 a 21-26 and 981 b 13-982 a 2. Although it cannot be shown that the scheme of development was to be found there also, that seems at least possible.

VII. DISREGARD OF PECULIARLY ARISTOTELIAN IDEAS

A general consideration can be dealt with briefly but is of great weight. The Stoics show no awareness of a number of conceptions that were important to Aristotle. They neither use them nor attack them nor even allude to them. It is tempting to conclude that they did not know them. Perhaps too little attention has been paid to this unconcern because Stoics were far too long widely thought of as philosophically uninteresting: it was no matter for surprise if they did not attend with care to the wisdom of their great predecessor. In the last generation attitudes have changed: there is general recognition that the early Stoics were intellectually serious and it has become easier to believe that disregard of important Aristotelian views was due to ignorance rather than to idle dismissal.

Some of these have already been mentioned: the two qualities of each element (p. 37), the impossibility of void (p. 42), the soul as actuality of the body (p. 46).

Of the others the most striking is the pair *δύναμις* and *ἐνέργεια*. They seem never to be opposed in a Stoic context. The word *ἐνέργεια* is found in some passages dealing with Stoicism, but there is no evidence that it was used by early Stoics. It is found in Epictetus and fairly frequently in Marcus Aurelius, but always with the meaning 'act' or 'activity', never 'actuality'. The authors who use it when speaking of Stoicism are Arius Didymus, Plutarch, Clement of Alexandria, Alexander of Aphrodisias, Origenes, and Simplicius. All of these may be using Aristotelian language, with which they were familiar, to expound Stoic doctrine. However that may be, the opposition between *ἐνέργεια* and *δύναμις* never appears. Consistently with this the word *δύναμις* itself never seems to carry the meaning 'potentiality'; rather it means a 'force', an 'active power', as when Zeno called fate *δύναμις κινητική τῆς ὕλης* (*SVF* I 176). Consonant also with this ignorance of the idea of potentiality and actuality is the absence of the word *ἐντελέχεια* from the Stoic vocabulary. The word may have been invented by Aristotle, who uses it not infrequently in *Physics* and *Metaphysics*.

Essential to Aristotelian meteorology was the novel view that the earth gave off not one kind but two kinds of exhalation; to the unmistakable exhalations from water were added dry exhalations from other sources. Exhalations from water play their part in Stoic meteorology, but nothing is heard of the dry ones. If they were known about, did they not deserve a mention, even if not accepted? Düring's note, (1966) 386, that the word *ἀναθυμίασις*, often used in accounts of Stoic meteorology and psychology, first occurs in Aristotle and may have been his invention, seems to me to be unimportant. The verb *ἀναθυμιάσθαι*, later to be common, is also first found in Aristotle, but it would be hasty to suppose that he invented it, or that Chrysippus learned it from him (*SVF* II 579).

There is no mention of Aristotle's distinction between the irregular sublunary and regular supralunary regions.

Noteworthy is the fact that no use or mention is made of the doctrine that virtues are means between extremes. To accommodate this would not have been difficult, but it would have been a complication that did not strengthen Stoic ethical theory. The absence of any mention may lack significance, but that is not so easy to believe in view of the central position of ethics in the Stoic philosophy.

Some words were assigned meanings other than those given them by Aristotle. In some cases it may be that Aristotle was the innovator and the Stoics preserved an earlier use or developed it in their own way.

Nothing shows whether ἀντικείμενα in Aristotle's sense of opposites preceded the Stoic meaning 'contradictories'; here however Aristotle's threefold distinction of opposites, contraries, and contradictories is clearer than the Stoic scheme and one sees no reason for their abandoning the distinction if they knew it (above p. 21).

Plato could use the words ἕξις and διάθεσις as synonyms, *Laws* 792d, cf. *Philebus* 11d. Aristotle distinguished ἕξις as an enduring state, διάθεσις as a transient condition (*Categ.* 8 b 27 - 9 a 13), and his use of διάθεσις usually accords with this, although he slips back at *EN* 1107 b 16 to making the words synonymous. The Stoics also distinguished the words, but in a different way. For them a ἕξις admitted of degrees, a διάθεσις did not. Simplicius, *in categ.* 237, 27 Kalbfleisch makes this very plain, rejecting the view held by some that ἕξις was transient, διάθεσις enduring. Transience and duration were accidental properties of many, but by no means of all, ἕξεις and διαθέσεις. It is impossible to say whether the Stoics were ignorant of Aristotle's distinction or knew it, but thought their own more useful and less vulnerable to criticism of the Sorites type.

Discordance over φαντασία, φάντασμα, and φανταστικόν was noted above (pp. 22-3).

VIII. CONCLUSION

An eminent scholar, A. Momigliano, wrote (730) that Syme is inconceivable without Namier as a predecessor ('ohne Namier als Vorgänger ist Syme nicht zu denken'). In the *Times Literary Supplement* of 28 January 1977, p. 99, Fergus Millar stated that when Syme wrote *The Roman Republic* he had not read Namier. If there are similarities between them, this leaves two alternatives: either Syme knew from talk among historians the principles of historiography associated with Namier's name, or he independently employed some of the same principles and so is, after all, conceivable without Namier. The considerations here involved are applicable to our enquiry.

Many writers have maintained that some Stoic doctrines can only have arisen in reply to Aristotle's or as a development of them, and some have believed that early Stoics made a close study of his school-works. The investigations of the foregoing sections discourage such a belief and support the view that the school-works were, with few exceptions, unknown to them. There are, however, similarities with passages in the school-works and these must be explained. One possibility is that the same ideas were also expressed in an exoteric work and that a Stoic philosopher read them there. But there are two other alternatives. The Stoics may have heard reports of Aristotle's teaching, whether explicitly acknowledged as being his or given as accepted Peripatetic doctrine; on the other hand, they may independently have thought in the same way as he had done, whether each reached the same conclusion or each adopted some idea that had already been proposed.

The striking absence of explicit evidence that the early Stoics took an interest in the work of Aristotle or of his following in the Peripatos makes me the readier to accept independent thought as the explanation of similarities. The similarities, moreover, are often only partial and accompanied by divergences. Those who wish to see Aristotelian influence may explain these differences as changes necessitated by unalterable Stoic dogma or as the results of a desire for simplification. They can equally well be understood as the natural consequences of the independent reaction of two men to the same problems.

No one will doubt that Stoicism was formed as an amalgam of original thought and of material which its founders learned from earlier and contemporary philosophers. Unfortunately any attempt to separate these factors is condemned to a great measure of uncertainty because we are so inadequately informed about what was available to the early Stoics. It is probable that they could read Aristotle's *Protrepticus*, *Eudemus*, *On Justice*, and *On Philosophy*, perhaps other exoteric works. But of the contents of these books there is very inadequate information, and it can only be guessed how much attention they received. This ignorance is not the

only handicap to hinder anyone who wishes to estimate the possible contribution of Aristotle's thought to the development of Stoicism; we also know all too little about other philosophers whose influence ought to be taken into account. Zeno was undoubtedly much affected by the Platonic tradition of the Academy. But what may he have learned from Polemo, with whom he is reported to have studied? Polemo is now remembered for his unexciting contributions to ethics, but he is said to have greatly admired Xenocrates, whom he was always mentioning (Diog. Laert. 4.19). Xenocrates had a very wide range of interest and it would not be surprising if Polemo passed on some of his views, whatever they may have been.¹²⁰

We ought constantly to remind ourselves how much is not known about the intellectual life immediately preceding and contemporary with the rise of Stoicism; we should not forget the precarious nature of many conclusions about the Stoics' sources. In the concluding paragraph of his study of Diodorus ((1977) 104) D. N. Sedley writes that 'those ancient philosophical systems which we rank supreme from our own peculiar historical perspective, further blinkered by the scanty survival of their competitors, by no means dominated the conversation of the young men who thronged the philosophical schools of Athens in the first fifty years of the Hellenistic era'.

Visitors to the Vatican galleries may see a magnificent painting by Raphael entitled *The School of Athens*, familiar through frequent reproduction. Amid a great concourse the composition picks out two figures in the centre. They are in earnest conversation as they come forward to descend a short flight of steps. One is a vigorous old man, the other in the prime of life; the first is Plato, the idealist, who points to heaven, Aristotle is the other, the realist, who turns his hand firmly downwards. It is a beautiful picture, but not a historical one. The modern world sees the two men as equals, outstanding stars in the heavens of ancient philosophy. Some of us may be Platonists, others Aristotelians, but common sense joins the pair in a class that has no other members. That is not the way in which they were regarded by their contemporaries and their immediate successors. For the generality of what may be called the intellectual public Aristotle was a welcome target for scandal and his views largely unknown or misrepresented. There is no proof that even philosophers recognised his greatness. Almost no sign, perhaps no sign, survives that the men of the Academy were affected by him; not Xenocrates, not Polemo, not the innovator Arcesilaus. It is a matter of dispute how much Epicureans and Stoics knew of him, but whether through ignorance or deliberate rejection they seem simply to have disregarded many of his most dearly-held opinions and valuable innovations.

To prove a negative is often difficult or impossible, especially if the evidence is limited. Often the best that can be done is to argue that the negative is, although not proven, still probable. The concern of this paper has been to set out the support for what I believe to be a probable negative thesis, namely that Aristotle was not a significant influence on early, that is on third-century, Stoicism. New evidence, if

must be admitted, might change the picture. Recovery of one of Zeno's writings, of which hardly a line now survives, might reveal that he made many explicit or otherwise indisputable references to Aristotle. But as things stand, it seems to me that such indications as there are point only rarely to Aristotle as the probable, let alone the certain, origin of Stoic doctrines. However that may be, I hold even more strongly that it is a mistake to proceed on the a priori assumptions that the Stoics must have known the opinions expressed in his school-works, must have understood his importance *sub specie aeternitatis*, and must therefore have been influenced by him.

PANAETIUS AND POSIDONIUS

Although these authors did not contribute to Stoic orthodoxy, there may be some interest in enquiring into the influence exerted on them by Aristotle. Both worked in Rhodes, to which island, two centuries earlier, Eudemus had moved from Athens, taking with him a copy of at least the first six books of Aristotle's *Physics*, and perhaps of other school-works (cf. 3). This suggests a possibility that some of these works were available in Rhodes and may have been read by these Stoics. Panaetius is said to have been ἰσχυρῶς φιλοπλάτων καὶ φιλαριστοτέλης (Stoic. Ind. Herc. 61) and of Posidonius Strabo says (2.3.8) πολὺ γὰρ ἔστι τὸ αἰτιολογικὸν παρ' αὐτῶ καὶ τὸ ἀριστοτελεῖζον. D. J. Allan writes ((1975) 249): 'there is no good reason for doubting that both were acquainted with Aristotle's treatises'.¹²¹

Yet with one exception there is in fact very little positive reason for believing either to have been acquainted with anything but some of the exoteric works and what the tradition of the Peripatetic school represented as Aristotle's views. That conclusion was reached by O. Regenbogen (1940) 1374. The lack of evidence may be due to chance and the inadequacy of our records. But for what it is worth such information as we have does not suggest knowledge of any work of the Corpus except *Meteorologica*, the first three books of which were very probably used by Posidonius.

Panaetius

Why did the author of the Index Stoicorum call Panaetius 'a lover of Aristotle'? The phrase does not necessarily imply any knowledge of the works of the Corpus, any more than does Cicero's statement (*Fin.* 4.79) *semperque habuit in ore Platonem, Aristotelem, Xenocratem, Theophrastum, Dicaearchum*. It would be quite enough if Panaetius admired some exoteric works which were in general circulation. The remains of Panaetius, incomplete and unrepresentative as they are, provide no evidence of knowledge of the school-works. One may suspect too that the love of Aristotle was manifested by an interest in the teaching of later Peripatetics, since the Index continues that 'he even made some modification in Zeno's doctrines because of the Academy and the Peripatos', ἀ[λλά] καὶ παρε[νέδ]ω[κ]ε τῶν Ζηνων[είω]ν [τι διὰ τῆ]ν Ἀκαδημίαν [καὶ τὸν Περί]πατον. On the other hand it is noteworthy that M. van Straaten (1946) finds Peripatetic influence at two points only, acceptance of the eternity of the world-order (78) and (more doubtfully and perhaps less plausibly¹²²) the conception of virtues as the development of innate instincts (171). Similarly N. Tataakis (1931) almost without

exception mentions Aristotle only to contrast him with Panaetius. M. Pohlenz, (1947) 1 195, says that Panaetius could allow the spirit of a Plato or an Aristotle to affect him, and (1 197) that he took over empirical material from Aristotle; but the only instance he gives is the likeness of Cicero, *N.D.* 2.125-7, which he ascribes to Panaetius, to passages in Ps.-Aristotle *Hist.An.* IX; the ascription is uncertain at the least, see van Straaten 251-2.

Another inconclusive attempt to show knowledge by Panaetius of an Aristotelian school-work is that of F.A. Steinmetz (1967) 50-1. He maintains that Cicero made use in writing *de amicitia* not only of Theophrastus *Περὶ φιλίας* but also of some work in which Panaetius drew upon the discussion of *φιλία* in *EN* 8 and 9. That Cicero used Theophrastus' *Περὶ φιλίας* is a solid island in the sea of *Quellenkritik*, since it is affirmed by Aulus Gellius (1.3.11) who, or whose authority, had the advantage of being able to compare the two books in detail. But direct knowledge by Panaetius of *EN* cannot be assumed; he too could read Theophrastus' *Περὶ φιλίας*, which may have repeated elements of Aristotle's views, whether they were to be found in *EN* 8 and 9 or in *EE* 7 or remembered by tradition.

Posidonius

The words of Strabo 2.3.8 are often cited by modern scholars: πολὺ γάρ ἐστι τὸ αἰτιολογικὸν παρ' αὐτῷ καὶ τὸ ἀριστοτελίζον· ὅπερ ἐκκλίνουσιν οἱ ἡμέτεροι διὰ τὴν ἐπίκρουσιν τῶν αἰτιῶν. 'There is in him much enquiry into causes, that is much in the manner of Aristotle, from which men of our philosophy abstain because causes are hidden from us'. Exactly what he intended by τὸ ἀριστοτελίζον is uncertain: at the one extreme he could be saying that Posidonius conducted much enquiry into causes in the manner of Aristotle, at the other that Posidonius took over material from Aristotle. My own guess is that Strabo wished to represent him as consciously following Aristotle's lead in trying to find the causes of things.¹²³ But that does not show him to have been familiar with the works of the Corpus. He could have found the interest in causation either displayed in Aristotelian or pseudo-Aristotelian works that are now lost or indeed simply preserved in the Peripatetic tradition. Thus Diogenes Laertius says (4.32) of Aristotle that 'In the sphere of natural science there was no one who had greater concern to investigate causes, so that he explained the causes of even the most trivial things. For this reason he even wrote not a few books of *Memoirs* (or *Notes*) on Nature': ἔν τε τοῖς φυσικοῖς αἰτιολογικώτατος πάντων ἐγένετο μάλιστα, ὥστε καὶ περὶ τῶν ἐλαχίστων τὰς αἰτίας ἀποδίδοναι, διόπερ καὶ οὐκ ὀλίγα βιβλία συνέγραψε φυσικῶν ἀπομνημονευμάτων (ὑπομνημάτων Cobet). These books are probably to be identified with the φυσικά προβλήματα used by Plutarch and Aulus Gellius (3.6) and the φυσικά in 36 volumes recorded in Diogenes' list of Aristotle's writings. Aristotle may have had a hand in them, but there must have been contributions

from members of the school. Strabo's words then provide no evidence for direct knowledge of works that survive today. Elsewhere, however, he may testify to Posidonius' acquaintance with one work of the Corpus.

That work is Aristotle's *Meteorologica*.¹²⁴ Strabo 2.2.2 (F 49 Edelstein-Kidd) says that he reported and criticised Aristotle on the terrestrial zones. Aristotle's view is to be found in *Meteor.* 2. 362 a 32ff. Hence the following passage probably shows that Posidonius knew and accepted the Aristotelian explanation of haloes (*Meteor.* 3, 372 b 12ff.), not merely that Alexander believed him to have been influenced by Aristotle. ἡ μὲν γὰρ Ἀριστοτέλους δόξα περὶ τῆς ἄλω ὡς ἐπὶ κεφαλαίων τοιαύτη, ἐπηκολούθησε δὲ αὐτῷ καὶ Ποσειδώνιος πάντων σχεδὸν τῶν ἄλλων οὐ κατὰ ἀνάκλασιν ἀλλὰ κατὰ κλάσεις ὄψεων αἰτιωμένων (Alexander, in *Meteorologica*, pp. 142.21-143.11 Hayduck, F133 E-K).

Three other passages do not prove, but suggest knowledge of *Meteorologica*. (1) The scholia on Aratus, *Phaenomena* 1091, F 131 a E-K, give the views on comets of the Pythagoreans, Democritus, Anaxagoras, and Posidonius. Just before the last a personal observation made by Aristotle and recorded in *Meteor.* 1. 343 b 12ff. is cited; it may have been quoted by Posidonius. (2) The same scholia, on line 881, F 121 E-K, give Posidonius' explanation of mock suns. At the end of this Aristotle's different explanation (*Meteor.* 3.377 a 29ff.) is briefly stated; the scholiast may have derived it from Posidonius. (3) Strabo 4.1.7, F 229 E-K, talking of the so-called 'Stony Plain' west of Massilia, concludes Ἀριστοτέλης μὲν οὖν φησιν ὑπὸ σεισμῶν τῶν καλουμένων βραστῶν ἐκπεσόντας τοὺς λίθους εἰς τὴν ἐπιφάνειαν συνολίσθαι εἰς τὰ κοῖλα τῶν χωρίων· Ποσειδώνιος δέ... Once again, it is likely that Strabo's information about Aristotle was derived from Posidonius. Edelstein-Kidd refer to *Meteor.* 2. 368 b 28 and that may be right. Aristotle, however, does not there use the name βραστής or say anything about slipping into hollows. All he says is ὅπου δ' ἂν γένηται τοιοῦτος σεισμός, ἐπιπολάζει πλῆθος λίθων ὥσπερ τῶν ἐν λίκνοις ἀναβραττομένων and that this happened περὶ τὴν Λιγυστικὴν χώραν. Perhaps Posidonius, who appears to have associated Ligurians with the Stony Plain, if responsible for Strabo's information about Aristotle, himself drew it from *Meteorologica*, adding details which he believed Aristotle, had he so wished, might have inserted;¹²⁵ it may be more likely that his source was not the *Meteorologica*, but the lost *Problemata Physica*.¹²⁶

On the other hand the juxtaposition of Aristotle and Posidonius in Plutarch, *de facie* 932 B, F 125 E-K, is not to be explained as due to quotation from the latter. The *Meteorologica* is not involved, but the *Problemata*, of which Plutarch makes extensive use elsewhere.¹²⁷ The careful analysis by H. Görgemanns (1970) 140-6, 148 shows that it was Plutarch himself who combined Aristotle and Posidonius.

Posidonius believed that Apellicon had bought, as well as a number of other libraries, that of Aristotle, that is to say the library taken, according to Strabo and Plutarch, by Neleus to Scepsis (Athenaeus 4.214d, F 153.150 Edelstein-Kidd). He shows no sign of knowledge of what its contents were or of what had become of it;

hence one cannot safely argue, as has been done,¹²⁸ that because he mentions no novelty it contained nothing that was previously unknown.

Apart from the references, certain, probable, or possible, to *Meteorologica* just discussed there are four passages in which Posidonius is said to have referred to Aristotle; in none is the reference clearly to a school-work. (1) Strabo 3.3.3, F 220 E-K, reports criticism of Aristotle for his views on Spanish tides; these are certainly not in the Corpus. (2) Strabo 17.1.5, F 222 E-K, reports a statement that Callisthenes' view that the rising of the Nile was caused by summer rains had its source in Aristotle (cf. frags. 246, 247 Rose, from *περὶ τῆς τοῦ Νείλου ἀναβάσεως*). (3) Strabo 1.2.21, F 137 a E-K, reports a denial that any recognised authority on winds, e.g. Aristotle, Timosthenes, or the astronomer Bion, regarded the North and South winds as pre-eminent. The reference is perhaps to Ps-Aristotle *Περὶ τῶν σημείων* (frag. 250 Rose). (4) Athenaeus 5.214a, F 253.119 E-K, cites Posidonius verbatim: the 'Peripatetic' Athenion at once got rid of the sensible citizens, *παρὰ τὰ Ἀριστοτέλους καὶ Θεοφράστου δόγματα*. The view that states are best directed by 'sensible' men may derive ultimately from Aristotle's and Theophrastus' *Politics*, but it was probably standard Peripatetic doctrine, accepted as that of the founders.

Three passages state that Posidonius followed Aristotle with regard to some specific point. It is possible that he acknowledged a debt to his predecessor. On the other hand the writer may simply have assumed that the later philosopher must have been influenced by the earlier.¹²⁹ One cannot therefore treat these passages as secure evidence for knowledge of Aristotle.

(1) Simplicius, *in Aristotelica Physica* 193 b 23, 291.21-292.31 Diels, F 18 E-K: *ὁ δὲ Ἀλέξανδρος φιλοπόνως λέξιν τινὰ τοῦ Γεμίνου παρατίθησιν ἐκ τῆς ἐπιτομῆς τῶν Ποσειδωνίου Μετεωρολογικῶν ἐξηγήσεως τὰς ἀφορμὰς ἀπὸ Ἀριστοτέλους λαβοῦσαν... οὕτως μὲν οὖν καὶ ὁ Γέμινος ἦτοι ὁ παρὰ τῷ Γεμίνῳ Ποσειδώνιος τὴν διαφορὰν τῆς τε φυσιολογίας καὶ τῆς ἀστρολογίας παραδίδωσιν ἀπὸ τοῦ Ἀριστοτέλους τὰς ἀφορμὰς λαβὼν*. Posidonius, assuming that it is he, not Geminus, who is responsible, provides a long discussion of the differences between ὁ φυσικός and the astronomer. Aristotle in the *Physics* distinguishes the two, but says only a few words about astronomy; he is principally concerned to contrast the φυσικός with the mathematician. There is no close similarity between the two treatments.¹³⁰ It is unnecessary to suppose that Posidonius, who was interested in astronomy, needed stimulus from Aristotle to attempt to define its sphere. (2) Simplicius, *in Aristotelis de caelo* 310 b 1, 700.5-8 Heiberg, F 93a E-K: *ἄλλος δὲ οὗτος ὁ τρόπος καὶ ἄλλος ἐκεῖνος, καθ' ὃν τὰ μὲν βαρέα καὶ ψυχρὰ ὕλης λόγον ἔχειν, τὰ δὲ κοῦφα καὶ θερμὰ εἶδους <ὡς> αὐτὸς τε Ἀριστοτέλης ἐν ἄλλοις λέγει καὶ Θεόφραστος ἐν τῷ περὶ τῶν στοιχείων γενέσεως· καὶ Ποσειδώνιος ὁ Στωικός παρὰ τούτων λαβὼν πανταχοῦ χρῆται*. Some scholars assert this passage to show that Posidonius was acquainted with *de generatione et corruptione*. But Aristotle does not say this at 335 a 5, to which Theiler refers, nor anywhere else in *gen. et corr.* 2.8 adduced by Heiberg, followed by Edelstein-Kidd. I do not know where he does,

if anywhere. Professor Kidd remarks to me that the statement about Posidonius is also puzzling since for a Stoic the formative elements are fire and air, and air, although light, is cold, a view to which he seems elsewhere to have adhered (F 94 E-K). Simplicius may of course be right in supposing that Posidonius borrowed this thought from Aristotle and Theophrastus, but he may have done no more than draw his own inference from the similarities he detected. (3) Galen, *Plac. Hipp. et Plat.*¹³¹ 5.481, 462.12 M, F 144 E-K, F 183 E-K, says that Posidonius 'followed' Plato and Aristotle to a greater extent than he did Chrysippus in distinguishing calculation, spirit, and appetite. Again, Posidonius may have cited Plato and Aristotle as authorities, but he may have done no more than use a tripartition familiar in philosophical circles.¹³²

In three other passages Galen notes an identity of view between Posidonius and Aristotle, without necessarily implying influence: *Plac. Hipp. et Plat.* 4.343, 432.9-15 M; 5.493, 476.2-6 M; 6.515, 501.7-14 M; F 142 E-K, F 145 E-K, F 146 E-K. In all three he observes that Aristotle and Posidonius both speak of δυνάμεις, not parts, of the soul.

Finally there is a passage in which it is not clear whether the reference to Aristotle is Galen's own (so Laffranque 399) or that of Posidonius, as Professor Kidd tells me he is inclined to believe. *Plac. Hipp. et Plat.* 5.464, 443 M, F 169: καὶ γὰρ δὴ καὶ τὸ αἷμα διαφέρειν ἐν τοῖς ζῷοις φησὶ θερμότητι καὶ ψυχρότητι καὶ πάχει καὶ λεπτότητι καὶ ἄλλαις, φησὶ, διαφοραῖς οὐκ ὀλίγαις ὑπὲρ ὧν Ἀριστοτέλης ἐπὶ πλεῖστον διήλθεν. ἡμεῖς δὲ κατὰ τὸν οἰκείον καιρὸν ἐπὶ προήκοντι τῷ λόγῳ μνημονεύσομεν αὐτῶν, ἥνικα ἂν καὶ αὐτὰς τὰς Ἱπποκράτους τε καὶ Πλάτωνος ῥήσεις περὶ τούτων παραγράψωμεν. ἐν δὲ τῷ παρόντι πρὸς τοὺς περὶ τὸν Χρῦσιππον ὁ λόγος ἐνέστηκε μοι μήτε ἄλλο τι γινώσκοντας τῶν κατὰ τὰ πάθη μήθ' ὡς αἱ τοῦ σώματος κράσεις οἰκείας ἑαυταῖς ἐργάζονται τὰς παθητικὰς κινήσεις· οὕτω γὰρ ὁ Ποσειδώνιος ὀνομάζειν εἶωθεν. Ἀριστοτέλης δὲ ἀντίκρυς ἦθη (De Lacy: ἦδη MSS) καλεῖ τῶν ζῶων ἀπάσας τὰς τοιαύτας τῆς ψυχῆς καταστάσεις, ἐξηγεῖται δὲ καθ' ὄντινα τρόπον ἐπὶ ταῖς διαφορούσαις κράσεσι συνίστανται.

The reference may be to *De Partibus Animalium* 647 b 30-648 a 13 and 650 b 19-651 a 19. It may be relevant that the only works of the Corpus quoted by Athenaeus (although he mentions the *Nicomachean Ethics*) are *Historia Animalium* and *De Partibus Animalium*. This suggests that the latter, like the former, were known before the work of Andronicus. But the passage of Galen is not one which allows any certain inferences about Posidonius' knowledge of Aristotle.

The conclusion must be that there is no *positive* evidence that Posidonius knew any of the school-works, except perhaps the *Meteorologica*.

APPENDIX

Ocellus Lucanus

Since claims that Stoics were affected by Aristotle's *de generatione et corruptione* have been treated sceptically above (pp. 33, 61) it is only fair to notice that proof of knowledge of that work before the time of Andronicus has been claimed for the book we know by the name of its alleged author, Ocellus Lucanus. The book contains a few undeniable quotations from *de generatione*, but it is not so easy to determine what exactly can be deduced. Ascribed to an early Pythagorean named Ocellus or Ocelus, it was originally written in literary Doric, but apart from extracts preserved by Stobaeus (1.20.3-5) exists only in a translation into standard Greek, which is generally but not indubitably assigned to Byzantine times. Composed with the intention of showing that Aristotle had borrowed some of his doctrines from early Pythagoreanism, notably the eternity of the world, the fifth element, and the paired qualities of the four terrestrial elements, it contains verbatim quotations from *de generatione* which may provide evidence for knowledge of that work before the activity of Andronicus. The author's purpose need not have been to brand Aristotle with plagiarism. On the contrary, he may have wished to recommend Aristotle's doctrines by emphasising their antiquity and their identity with those of a man recognised to have been a great teacher.

Although the date of the original pseudo-Doric version cannot be determined with complete certainty, probability favours one before the first century B.C. The earliest writer to refer to the work is Philo, *de aeternitate mundi* 12, but a mention in Censorinus, *de die natali* 4.3, is almost certainly derived from Varro. R. Harder, the editor of the surviving version, believing Varro to have had his information from the so-called *Vetusta Placita*, a lost doxographical work of about 100 B.C., would date the original to the earlier half of the second century ((1926) 150). In his review of Harder's book W. Theiler shows the writer of 'Ocellus' to have been strongly affected by Critolaus and supposes him to have written in his time ((1926) 585); R. Beutler ((1937) 2380) would also choose a date of about 150 B.C. I find this dating very probable, and it is consistent with the considerations advanced by H. Thesleff (1961) 102. It must therefore be asked whether Ocellus provides evidence of knowledge of *de generatione* at that time.

The quotations from Aristotle occur in paragraphs 24 to 29 and consist of four almost verbatim extracts from *de generatione* B: 329a 32 – b 3, 329b 18–20, 330b 25 – 331a 1, and 330b 3 – 5. The first is quoted in 'Doric' form by Stobaeus, so that there can be no suspicion that they were absent from the original version and first introduced into the later version written in standard Greek. There is no acknowledgment that they are quotations; they are presented as if they were the

words of Ocellus himself.

Did the author know that he was quoting Aristotle? If he did, presumably he included these Doricised extracts to clinch the case for Aristotle's dependence on the early Pythagorean. He must then have imagined readers who were, or some of whom were, so familiar with *de generatione* that they would recognise the supposed borrowing. If he wrote before Andronicus, this is noteworthy. But it is perhaps more likely that in his source the extracts carried no indication of Aristotelian authorship and that he did not observe it.

It is generally agreed that paragraphs 20 and 35 have their origin in teaching in the Peripatos. If that is so, neither the writer nor his teachers need have directly consulted *de generatione*; these quotations may have been part of the material inherited from the early days of the school when knowledge of that work is easier to credit. It is noteworthy that all four extracts deal with basic pieces of the Aristotelian system. The fourth, which gives the dual qualities of the four elements, might have been written in the same words by any Peripatetic. The second, which is a list of opposites, does not follow Aristotle's wording exactly; it has been extended by the addition of ἀραιόν and πυκνόν, the absence of which from Aristotle's list was to be remarked by Alexander of Aphrodisias as if it were a known problem (Philoponus, *in gen. et corr.* 214.22 Vitelli, Harder 104), and altered by the substitution of ὄξύ and ἀμβλύ for the less common words γλισχρόν and κραῦρον. Harder suggests that the changes were made by the writer of 'Ocellus', but he may have found them made already in some epitome of Peripatetic physics. A motive for a change by him is hard to see, whereas a Peripatetic teacher might well wish to emend Aristotle's text by supplying an omission and avoiding an obscurity. It seems to me that the facts are most easily accounted for by the supposition that the writer recognised and expected his readers to recognise as Aristotelian the views expressed in these quotations, but did not know that he was quoting or nearly quoting Aristotle's own words.

There is another place where there appears at first sight to be a reference to *de generatione*. In paragraph 44 there are the words καθ' ἕκαστον ἀνεπλήρωσεν ὁ θεὸς ἀκατάληκτον ποιήσας καὶ συνεχῆ ταύτην τὴν γένεσιν whereas *de generatione* 336a 31 has συνεπλήρωσε τὸ ὅλον ὁ θεὸς ἐνδελεχῆ ποιήσας τὴν γένεσιν. (Philoponus on this passage read ἀνεπλήρωσε, 297, 14 Vitelli). Harder argues that Ocellus' preceding clause, ἀμήχανον ἦν θνητὸν φύντα θείου βίου κοινωνῆσαι is related to *de anima* 415a 29 ἵνα τοῦ ἀεὶ καὶ τοῦ θείου μετέχωσιν ἢ δύνανται and that the writer will not himself have found and joined the two passages; rather the ideas will have been combined by Aristotle himself in the dialogue Περὶ φιλοσοφίας. This is accepted by Walzer in his collection of the fragments (fr. 31) and by Düring (1966) 381 n.237.

My conclusion is to find improbable the view that the author of 'Ocellus' had direct acquaintance with *de generatione*.

NOTES

1. A handy résumé of the evidence and of the interpretations of modern scholars may be found in Guthrie 53-4.

2. There is little clear evidence on this. He is represented as teaching ἐν Λυκείῳ (Apollodorus, *F.Gr.Hist.* 244 F 38). The Lyceum was a public exercise place, popular with lecturers; we hear of its use by 'sophists' (Isocr. *Panath.* 18, 33; Athenaeus 3.98f, 8.336c-f) and by the Stoic Chrysippus (Diog. Laert. 7.185, on the authority of Demetrius' Ὁμῶνυμοί, early 1st cent. B.C.; on the same authority Chrysippus was the first to dare to hold a class (σχολῆν ἔχειν) in the open air at the Lyceum. This shows that in Demetrius' day at least there were roofed lecture-rooms there). They presumably wished to attract audiences. Did Aristotle also? Or was he listened to by a narrow circle of attached pupils (Aulus Gellius 20.5.4, a passage of dubious credibility), as was Wittgenstein in the garden of Trinity College, Cambridge? But it is difficult to believe that Aristotle's teaching was entirely conducted in this public place. He must have hired a house – not being a citizen, he could not buy one – in which to live and lodge his collection of books, and it is probable that this was where he lectured to his regular associates. A famous article by H. Jackson, *Journal of Philology* 35 (1920) 191-200, showed that he could point to two paintings, one representing the scene described by Plato in *Protagoras* 335c, the other that of the *Phaedo*. A blackboard (or rather a whiteboard) might have been brought by slaves to the public gymnasium, but the pictures strongly suggest a private house. A parallel may be found in the Platonic school. Although the comic poet Epicrates represented Plato as presiding in the public gymnasia of the Academy over the efforts of some young men to classify animals and plants, it is hardly credible that all his activities were carried on there for all to hear. Some must have taken place in the house which he had bought in that neighbourhood and which his successors inherited. On the Lyceum as a place of education, cf. J. P. Lynch, *Aristotle's School* (1972) 45-6. The use of 'Lyceum' as a synonym for the Aristotelian or Peripatetic school is mainly modern, although there are a few ancient examples where the word, although primarily meaning the place, is intended to suggest the school: Cicero *de orat.* 1.98, Lucian *Piscator* 52, Themistius *orat.* 4.60.

3. Demochares, Demosthenes' nephew and anti-Macedonian politician, denounced him as a traitor to Stageira and an informer on the rich men of Olynthus; but the date of this attack (Eusebius, *Praep. Ev.* 15.2.791d) is not known. Aristotle was not the only philosopher slandered by Demochares.

4. Diog. L. 5.35 says that he had many pupils (if that is the meaning of γνῶριμοί) but names none here except Theophrastus. I. Düring (1966) 35 notes that only Theophrastus and Eudemus were of any importance; the former at least had joined him before he returned to teach at Athens, while the latter did not remain there but went to Rhodes. Tradition associated Aristoxenus and Dicaearchus with him; but many of their known views diverge sharply from his.

5. Speusippus was mentioned, probably when no longer alive, at *Met.* 1028 b 19, 1072 b 30, *EN* 1096 b 5, 1153 b 5, Xenocrates in the early *Topica* at 112 a 37, 141 a 6, 152 a 27.

6. The origin of the name Peripatetics for the school founded by Theophrastus is fully discussed by K. O. Brink, *RE* supp. vii 899-904. They were first called οἱ ἀπὸ (or ἐκ) τοῦ περιπάτου, which may have been the περίπατος left by Theophrastus in his will to 'those who wish to study together' (Diog. Laert 5.52). J. P. Lynch 74 prefers derivation from a public 'walk' in the Lyceum. But the school must in any case be regarded as a revival, more firmly established, of the group that had for a dozen years been

centred on Aristotle. Jaeger's belief, (1923) 335, that the buildings bought by Theophrastus were those earlier hired by Aristotle may be true but is entirely unsupported.

7. It may be asked how much of Theophrastus' teaching and how many of his books were known outside his school. Unfortunately the evidence is insufficient to allow an answer. There is nothing to show how much was known by word of mouth. As for the availability of his writings, the long list given by Diogenes Laertius and probably derived from the third-century Alexandrian Hermippus may be taken to show a readiness to allow circulation of those works. But it does not show the extent of circulation in practice or how easy they were to come by. Some at least of the works on moral questions were written for the general public and it must be supposed that at least some of these were copied comparatively often. The famous, or notorious, *Callisthenes* or *On Grief* was one. It may be guessed that Epicurus had met his *Physics* (p. 6) and it is likely enough that other scientific works were known at Athens in the third century. But the *Metaphysics*, critical of Aristotle, is not in Diogenes' list and was, according to a scholion at the end, unknown to Hermippus in the third century and Andronicus in the first. If it had been available earlier, its disappearance would have been most unlikely. But however much opportunity the early Stoics had to listen to, hear about, or read Theophrastus, evidence given below (pp. 13-15) will suggest that they made little use of it.

8. But he was consulted on the text of a passage in the *Physics* by Eudemos, who had taken a copy to Rhodes (Simplicius on *Physics* 923. 7-16 Diels), where he read to some audience a slightly modified and, it would seem, abbreviated version of the first six books. There are stories which suggest that Eudemos also possessed parts of the *Metaphysics* (Asclepius in *Met.* 4.4-11 Hayduck and Ps.-Alexander in *Met.* 515.3-11 Hayduck).

9. P. Moraux, *Der Aristotelismus bei den Griechen* (1973) 20-30, exhaustively treats the credibility of the story and modern attempts to confirm, reject, modify it. It is accepted by W. K. C. Guthrie, *History of Greek Philosophy* vi 59-65, in a clear and to my mind convincing treatment.

10. This argument was used by Zeller II 2.153, and has often been repeated. On the nature of the library of the Peripatos see n. 31.

11. Strabo, when he wrote, counted himself a Stoic, but as a young man he had attended the lectures of a Xenarchus, a Peripatetic (14.5.4), and had also engaged in 'Aristotelian studies' with Boethus of Sidon (16.2.24).

12. Galen, Περὶ τῶν ἰδίων βιβλίων, XIX 10 Kühn, provides a well-known, although much later example. On the meaning of ἐκδοσις cf. R. Pfeiffer, *History of Classical Scholarship* (1968) I 142.

13. Professor Long insists that more may have been visible to Sbordone than can be seen today.

14. Cf. E. Bignone, *L'Aristotele Perduto* (1936) II 106 n.3. E. Schmalzriedt, Περὶ φύσεως, *Zur Frühgeschichte der Buchtitel* (1970) 105, says that in Peripatetic circles 'es bei Wendungen wie τὰ περὶ φύσεως ... nicht nur um eine Art von Titelzitat, sondern ... um eine generalisierende Themaangabe handelt'. Cf. Simplicius in *Physica* 924.15 Diels φυσικὰ δὲ ἐκάλουν οὐ τὰ ὀκτῶ μόνον ἀλλὰ καὶ τὰ περὶ οὐρανοῦ καὶ περὶ ψυχῆς καὶ ἄλλα πλεῖστα, J. M. Rist (1972) ix 'a fragment of Epicurus which speaks of Aristotle's physical treatises – though not necessarily of our *Physics*'.

15. I. Düring (1966) 35 thinks it proves that Theophrastus edited some works of Aristotle and put them in the book trade and states that Epicurus speaks of *Analytics* and *Physics*. P. Moraux (1973) I 11 says that Epicurus used and excerpted *Analytics*, *Physics* and *De Caelo*. Sbordone 127 is certain that the

writer of the letter had a thorough knowledge of the works he mentions, 'cum de ipsa fide et auctoritate illorum sententiam ferret. Crates Cynicus [why the Cynic and not the Academic?], praesertim vero Aristippus ab eo sine dubio diligenter excussus erat'. None of the passages he then cites (Cic. *Tusc.* 2.15, Diog. Laert 10.4, Euseb. *praep.ev.* 14.16.763d) mentions Crates or does more than repeat the improbable view that Epicurus derived his hedonism from Aristippus. Moraux, however, (1973) 11, accepts that it can be proved that Epicurus had 'so treated', i.e. excerpted, Crates and Aristippus. F. Grayeff (1974) 70 reports that 'an Epicurean acquired or wished to acquire the Aristotelian *Analytics* and *Physics* no doubt including at least parts of the *Metaphysics*'. J. Mau (1955) 106 states that 'the papyrus expressly says that the works named were well-known to the writer of the letter'. Arrighetti sees in it testimony that Epicurus read 'the great Aristotelian treatises', L. Tarán (1981) 726 that 'copies of Aristotle's treatises must have been available in Athens'.

It should be noted that ἐκλέγομεν is by no means certain – Diano's ἐπεύρομεν and Croenert's ἐγκρίνομεν are not impossible, nor perhaps is ἐλέγχομεν – and even if right does not necessarily or even probably mean 'we excerpt'. Arrighetti originally translated it 'abbiamo scelto' and in his second edition uses 'preferiamo'. But if 'excerpt' is right, the natural translation is 'such material concerning nature as we excerpt', which gives no indication of the source *from* which the material was taken. Moreover, when οἶδαμεν and πιστόν have taken their departure, the simplest way of understanding what remains is '... of Crates and Aristippus, the discourses of Plato on some subjects, and Aristotle's *Analytics*'. Epicurus, who had no use for formal logic, may have expressed disapproval of all the writings here assembled.

16. This is not the place, nor I the man, to pursue this subject. I note only that on ethics A. Kenny, *The Aristotelian Ethics* (1978) 15, writes 'I am unconvinced that we have any evidence that Epicurus knew any of Aristotle's surviving ethical treatises at first hand'. Belief that Epicurus knew the *Physics* is widespread. The studies most frequently quoted are those of W. Schmid, *Epikurs Kritik der platonischen Elementenlehre* (1936) = *Klassisch-philologische Studien* 9, J. Mau, *Philologus* 99 (1955) 99-111, and D. J. Furley, *Two Studies in the Greek Atomists* (1967) ch.8. Schmid himself recognised that περί φιλοσοφίας could be substituted for *Physics* in his argument, *Rh.Mus.* N.F. 92 (1943) 44, an article less frequently remembered. Mau overlooks Diodorus as a more likely influence than the *Physics* (D. N. Sedley (1977) 86-7). Furley's arguments are skilful and exacting, but may be dependent on the assumption that Epicurus studied Aristotle; it ought to be considered whether that is necessary. I think that the same assumption is made by B. Inwood, *Class. Phil.* 76 (1981) 273-85. A-H. Chroust, for what it is worth, writes (1976) 103 that 'it is fairly reasonable to assume that Epicureans had no direct knowledge of Aristotle's "acroamatic" writings'; and F. Solmsen, *Aristotle's System of the Physical World* (1960) 142 that 'there is no evidence for Epicurus' having first-hand acquaintance with the *Physics*'. Such statements leave open the possibility of unspecified indirect influence. Criticisms of Furley are to be found in H. J. Krämer, *Platonismus und hellenistische Philosophie* (1971) 231-362, and H. J. Mette, *Lustrum* 21 (1978) 101-2.

17. The exact meaning of the words τὴν θεωρουμένην ἐξ<iv> (the emendation is Usener's) must be uncertain. The verb θεωρεῖν ranges from 'perceive' to 'discuss', and in this passage the persons who have Aristotle in view may be either anybody who is interested or, perhaps more likely, Epicurus and his readers. The word was a favourite with Epicurus, both in the active and in the passive; the passive present participle occurs in *Epist. ad Herodotum* 59, 73, 74, 78 and *ad Pythoclem* 91, 103, 113. Curiously enough several translators, perhaps by confusion with θεᾶσθαι, understand θεωρουμένην to be a middle, seemingly an unparalleled usage, not registered in LSJ and occurring according to TGL only 'errore librarium'. Thus Yonge has 'speculative philosopher', Gulick 'contemplative state', and Arrighetti 'abito contemplativo'.

18. This passage is probably part of Theophrastus' *Physics*, not of the doxographical φυσικῶν δόξαι, see P. Steinmetz, *Die Physik des Theophrastos von Eresos* (1964) 350.

19. I. Düring, 'Aristotle in the ancient biographical tradition', *Göteborgs Universitets Årsskrift* 63 (1957) 324, who inclines to see Colotes as unscrupulous rather than ignorant.
20. Discussions of this passage are conveniently summarised by C. W. Chilton, *Diogenes of Oenoanda, The fragments* (1971) 40-42; add H. J. Krämer (1971) 63-5. Ross, *Aristotelis fragmenta selecta* (1955) 5 follows Walzer in assigning the alleged Aristotelian doctrine to some dialogue.
21. Professor A. A. Long, who kindly called my attention to Timon, writes (1978) 79 'If the Peripatetics were as prominent and influential in the early third century as some suppose, it is at least surprising that their names do not make an appearance in the passages of Timon quoted by our main sources, Athenaeus, Diogenes Laertius, and Sextus Empiricus'.
22. Düring suggests (106) that the 'destruction' of Plato's books refers to the criticism of Plato in *περὶ φιλοσοφίας*. It may be more likely, as G. E. L. Owen argues (*Oxford Studies in Ancient Philosophy*, ed. J. Annas, I (1983) 12), that literal destruction of copies in Aristotle's possession was meant. Such accusations occur elsewhere in slanderous attacks; they were part of the repertoire.
23. Other references to the attack are to be found in Diog. Laert. 2.109, Athen. 8. 354c and Themistius *Or.* 23. 285 C. With Eubulides Themistius associates, as enemies of Aristotle, Cephisodorus, and Timaeus, both historians, and Dicaearchus. There is no other evidence of Dicaearchus' hostility.
24. Düring understands in the latter way, (1957) 387, 'drawn from Epicurus and Timon's *Silloi*', cf. F. W. Walbank II 343-4. The meaning of *ἐπὶ στόμα φερόμενον* is uncertain. The context suggests 'always concerned with eating' (*omnia ad gulam referens*, Schweighauser), but the regular sense of *ἐπὶ* (τὸ) στόμα is 'to fall, or lie, with face to ground', sometimes in supplication (Plutarch *Artaxerxes* 29 fin. *ἐπὶ στόμα πεσόντα δεῖσθαι καὶ ἱκετεύειν*). So perhaps here the meaning is that Aristotle constantly humiliated himself to get favours from his Macedonian friends.
25. Hesitantly by Zeller II 2.87², confidently by Düring (1966) 36, who writes 'Philochoros zitiert recht genau einige Wörter aus Meteor. IV'.
26. On Cephisodorus see Düring (1957) 389-90, G. E. L. Owen (1983) 13-14.
27. The inscription is not completely preserved and there is a gap at the place where Plato's death would have been recorded, if recorded at all. The possibility that he was mentioned cannot therefore be excluded.
28. Yet L. Tarán (1981) 724 speaks of 'the fact that the availability of all or most of Aristotle's treatises during the Hellenistic age is guaranteed by the ancient lists of his writings'. The rest of his 'evidence that most if not all the Aristotelian treatises were available during Hellenistic times at least in Athens, Rhodes, Alexandria' is equally flimsy. With equal assurance H. Flashar (1981) 56 asserts the opposite: 'nach dem Tode des Theophrast verschwanden die Lehrschriften des Aristoteles *bekanntlich* zwar nicht vollständig aber doch weitgehend aus Athen'. (In both quotations the italics are mine. My identifications are taken from Düring (1957) 41-50.)
29. A. Kenny 40-42 argues that 38 is *EE* I-V, 37 (*περὶ παθῶν ὀργῆς* [sic: ὀρμῆς Kenny] α') *EE* VI, 24 (*περὶ φιλίας* α') *EE* VII.
30. K. Ohly, *Stichometrische Untersuchungen* (1928), 89-92. By 'line' was meant not 'line of writing', but a standard measure of 15-16 syllables.

31. Peripatos: P. Moraux (1973) 1 4. Alexandria: I. Düring, *Classica et mediaevalia* 17 (1956) 11. Pergamum: F. Grayeff 71-4. I name recent, rather than the first, proponents of these views. I. Düring (1966) 36 holds that there was no library distinct from that of its head, and H. B. Gottschalk, *Hermes* 100 (1972) 333, argues that as the scholarch was the legal owner of the school's property he could not transfer anything away from himself to it. This suits well with Strato's will which left to his successor Lycon 'all the books except what I have written myself'. But Lycon's will is more puzzling. He left τὰ ἐμὰ βιβλία τὰ ἀνεγνωσμένα to Chares and τὰ ἀνέκδοτα to Callinus to publish. It is more probable that τὰ ἐμὰ βιβλία means 'the books I have written' than 'the books I possess'. In that case he said nothing of what he had inherited. What had become of them? Perhaps it was taken for granted that they would pass to Ariston, his successor as scholarch (Moraux (1973) 1 17).

32. Ohly 101, F. Schmidt, *Die Pinakes des Kallimachos* (1922) 39. Moraux (1973) 1 13 suggests that the occasion for the stichometry was the copying for the Alexandrian library. Cf. E. Howald, *Hermes* 55 (1920) 204.

33. R. Stark, *Aristotelesstudien*² (1972) 163 = *Zetemata* 8.

34. Diog. L. 7.2, Strabo 13.1.67, Numenius apud Eusebium, *Praep. Ev.* 14.5 729b, Cicero *Ac. Post.* 1.34, *Fin.* 4.3. D. E. Hahm, *The Origins of Stoic cosmology* (1977) 221-3, maintains that this report may not be true, but have originated with Antiochus of Ascalon, who liked to represent Zeno as essentially a Platonist. He points out that if Zeno came to Athens in 312/11, the usually accepted date, he came ἐπὶ Πολέμωνος, another Polemo being archon eponymos in that year. This might have led to confusion and a belief that he came to study under Polemo the Platonist. All this is *possible*, but in view of the reputation of the long-established Academy and of its apparent influence on Stoicism, it remains likely enough that Zeno did listen to Polemo.

35. Hahm (1977) 224-5 suggests confusion with Xenophilus the Pythagorean.

36. Cf. W. Wiersma, *Mnemosyne* N.S. 3. 11 (1943) 192, D. N. Sedley in *Doubt and Dogmatism* ed. Schofield and others (1980) 5.

37. Hahm 176, 269-72, cf. Madvig, *Cicero De Finibus* 844, 'Aristotelis mentionem e Cleanthis libro sumptam esse'. Some scholars believe that knowledge by Cleanthes of Περὶ φιλοσοφίας is to be found elsewhere. He explained men's belief in the existence of gods as due to four causes: precognition of future events, the great advantages conferred on men by the world in which they live, the terror caused by lightning, storms, plagues, earthquakes, etc., and, most importantly, the regularity of the movements of the heavenly bodies (Cicero, *N.D.* 2.13-15, 3.16, *SVF* 1 528). Perhaps I. Bywater was the first to maintain that he was indebted to Περὶ φιλοσοφίας (*Journal of Philology* 7 (1877) 75-87). In *The Stoics* 70 I mistakenly wrote that all but the third of these reasons were to be found in Aristotle's dialogue. In fact only the first and the last are reported as Aristotelian (frag. 12). The last is also Platonic (*Laws* 966d-e). This may diminish the likelihood of Cleanthes' having been moved by Aristotle. Nevertheless the possibility remains.

38. K. Reinhardt, *Poseidonios* (1921) 228-34, *RE* xxii 701 (= *Poseidonios von Apameia* (1954) 701).

39. What did Chrysippus mean by διαλεκτική in this passage, and in the title of his book? There is a strong temptation to suppose that he intended that field of philosophy to which we give the name of 'logic'. As Pohlenz writes, (1947) 1 37, 'die Stoiker gern auch die gesamte Logik als Dialektik bezeichneten'. But it is more likely, and supported by the observations of A. A. Long, 'Dialectic and the

Stoic sage' in *The Stoics* ed. J. M. Rist (1978) 103-4, that he was discussing a philosophical *method*, the original sense of the word, which is interestingly examined by G. Ryle, *Plato's Progress* (1966) 102-45. The Stoics did not forget the derivation of διαλεκτική from διαλέγεσθαι 'to converse' (*SVF* II 131, p. 41.32) and among their definitions of it was 'the science of conversing correctly as regards what is said in question and answer'. (*SVF* II 48). This points to the form of dialectic developed under Plato in the Academy and often reflected in Aristotle's *Topics*. One speaker advanced a thesis and the other attempted by questioning to induce him to contradict this thesis or accept incompatible propositions or to involve him in infinite regress. Socrates, whom Chrysippus sees as the prime example of the practitioner of dialectic, certainly did not deal systematically with formal logic, but he is often represented both by Plato and Xenophon as causing his respondent to advance a definition which he proceeds to attack by the method of question and answer. Among Plato's successors both Xenocrates (*Diog. Laert* 4.13 τῆς περὶ τὸ διαλέγεσθαι πραγματείας βιβλία ἰδ') and Polemo (*Diog. Laert.* 4.18) envisaged this kind of dialectical discussion. The method was continued by Arcesilaus (*Diog. Laert.* 4.28); perhaps Chrysippus did not include him among his list of authorities for the practice of dialectic as being an unrelenting opponent of the Stoa and therefore not to be praised.

40. It would be a possible and interesting task, although it has already essentially been performed by O. Gigon, *Studien zur antiken Philosophie* (1972) 305-25, a revised edition of *Hermes* 87 (1959) 143-62, to trace the evidence for knowledge of Aristotle in the first century B.C. But it would be irrelevant to our more limited aim of considering his influence on the Stoics. For if he was then, in Cicero's phrase (*Topica* 3), 'unknown even to philosophers, with very few exceptions', that might not have been true of those active two centuries earlier. On the other hand, if the first century saw revived interest in him, as seems probable, writings may have then been discovered that had lain unnoticed before.

41. I am tempted to quote the following warning. 'People are quick to look for musical influences. But you have to be careful with Walton. You can say Elgar, Sibelius or Prokofiev but then discover that he had not even heard much of their music when he was first writing' (Alan Frank, *The Times* 29 March 1982, p.5).

42. The other view is taken by J. Longrigg, 'Elementary Physics in the Lyceum and Stoa', *Isis* 66 (1975) 211-29, particularly 222-9. He concludes 'can it be *purely* accidental that these parallels exist between the modifications and changes of Aristotle's cosmology introduced within the Lyceum itself and those made by the Stoa?' I should answer 'yes'.

43. The evidence is to be found in A. Graeser, *Die logischen Fragmente des Theophrast* (1973) F.29. Graeser writes cautiously about a possible relation between Aristotle and Chrysippus (42-6). But he assumes without any evidence that Zeno was one of Theophrastus's pupils.

44. Cf. M. Frede, 'Die stoische Logik', *Abh. d. Akad. d. Wiss. in Göttingen* 83 (1974) 15-18, and M. Pohlenz (1947) II 29, a good review of the evidence. Pohlenz suggests however (II 30) that ἀναπόδεικτος, the term applied by the Stoics to the basic forms of the syllogism, derives from such passages as *An. Post.* 71 b 27, 90 b 27, this in spite of quoting Plato *Def.* 415B, ὑπόθεσις ἀρχὴ ἀναπόδεικτος, which suggests that the word had wider currency.

45. A recently published papyrus of the second century A.D., P. Oxy. 3320, is a fragment of some work very like *An. Prior.* 47 b 29. Its editor suggests that the author was Eudemus or Theophrastus. If that is so, it may have been available to Chrysippus. In any case it provides a reminder that others besides Aristotle wrote about logic.

46. Cf. my remarks in *Illinois Classical Studies* 7 (1982) 213 and A. A. Long, 'it seems to me not at all

impossible that the *Topics* were issued to the public, and that they stimulated Chrysippus'. Chrysippus did sometimes use what was in effect an Aristotelian syllogism. For example, Plutarch *Stoic. rep.* 1041A (*SVF* III 297) reports the following argument 'verbatim': 'every correct action is a lawful action and a just action. But what is done with self-control or endurance or wisdom or bravery is a correct action. Therefore it is a just action'. It may be right to see Aristotelian influence here, but is it necessary? Did it need Aristotle to teach a man to argue thus?

47. Sextus does not explicitly say that Stoics are concerned, but the language is theirs. Nor is there any indication of when the substance of his report became orthodox doctrine. It may have been Chrysippus' work, but that is nothing but a guess. Zeno wrote a book *περὶ σημείων* (*Diog. Laert.* 7.4), but its position in Diogenes' list suggests that it was not of a logical character. He may have done no more than use without analysis the common belief that some things are signs of others in the physical world.

48. Burnyeat in a very interesting note (30) records that a milk-like substance may be exuded from the nipples of a pregnant woman. Aristotle is not advancing the absurd proposition that if any woman has milk in her breasts she is pregnant. He has in mind a real practical case, where it is desired to establish whether some particular woman is pregnant or not. If 'milk' is present, she is. At *Rhet.* 1357 b 15 he disregards this physiological fact, making milk necessarily a sign of having given birth; had he forgotten it, or had he in mind a particular case where it is desired to know whether a woman has had a child (cf. e.g. Menander, *Samia* 266-7)? Sextus' formulation 'has become pregnant (κεκύηκε)' may be intended to cover both pregnancy and consequent motherhood, but I suspect the object to be to exclude the meaning, possible if κύει is retained, 'if she has milk, she is becoming pregnant'.

49. It was already thought by V. Rose (1854) 66 to be subsequent to Chrysippus. Alexander may have been unable to see *περὶ ἐναντίων*, but he does not say so. Aristotle refers (*Met.* 1004 a 2) to ἡ ἐκλογὴ τῶν ἐναντίων, which may have been the same work as *περὶ ἐναντίων*. Alexander's silence almost proves that he had not seen it, but not that it was unavailable in his time.

50. Another place where Simplicius finds ἀφορμαί in Aristotle, this time for Posidonius, is in *Physica* 193 b 23 (see below p. 61); again I remain sceptical.

51. The status of *Περὶ ἀντικειμένων*, original or late forgery, is not affected by the fact that it did not deal with some questions concerning words of deprivation that were tackled by Chrysippus (Simplicius, *in categ.* 396.19 *Kalbfleisch*, *SVF* II 177), but also raised many problems neglected by the Stoics.

52. A useful collection of the material by D. A. Rees is to be found in *Essays in ancient Greek philosophy* ed. J. P. Anton and G. L. Kustas (1971) 497-502.

53. Theophrastus, so far as can be seen from Priscian's account of the fifth book of his *Physics* (3.261-82 Wimmer; ed. I. Bywater, *Supplementum Aristotelicum* 1 2 (1886) 23-5) used material provided by Aristotle, but one cannot determine how closely he followed *de anima*. He accepted the sense given by Aristotle to φάντασμα. If Iamblichus interpreted him correctly (I.1 fin.), he argued that φαντασία was an activity, but not an activity of the faculty of sensation (I.131 init.). It was not to be compared with moulded wax. The simile of wax imprinted by a seal was applied to φαντασία by Cleanthes and probably intended by Zeno's word ἀπεσφραγισμένη. Theophrastus may have seen his account as opposed to that of the Stoics, but there is nothing to show that Chrysippus reacted to it.

54. E.g. I. Düring, (1966) 37, 'The fragments of the Stoics show that they knew the ethical views of Aristotle. As sources they obviously had the dialogues of Aristotle, his ethics (*seine Ethik*) and the doxographical work of Theophrastus at their disposal. In the fragments that are preserved I have been

unable to find any verbal accord with the Aristotelian treatises'. By 'seine Ethik' Düring may have intended to avoid committing himself to Stoic knowledge of any of the *writings* that now survive.

55. In the standard manner I use 'happiness' to represent εὐδαιμονία and 'virtue' for ἀρετή, although it is common knowledge that they are no more than approximate renderings. ἀρετή is excellence and not confined to morality, while εὐδαιμονία is not a subjective feeling, but a state or an activity that can be defined and recognised.

56. The suspicion cannot be avoided that Aristotle is using the word εἰδώς ambiguously, 'in two senses', as J. A. Stewart puts it (*Notes on the Nicomachean Ethics* (1892) 185. When he says that an act can only be done virtuously by one who knows what he is doing, he may have in mind, to take an example, such an act as exposing oneself to danger. That is not bravely done unless the agent knows that he is exposing himself. But a different sense appears in the contrast between the arts and the virtues, that of knowing how to do something.

57. προαίρεσις is a common word in Epictetus, the first Stoic known to have made much use of it. By it he means a general attitude to the moral problems of life, a basic choice of principle. This is not derived from Aristotle. προαίρεσις also occurs in a passage of Stobaeus which contains much matter that originated with Zeno, *Ecl.* 2.7.11 g, *SVF* 1.216. (The passage is an extract from the *Epitome* of Arius Didymus, court philosopher of Augustus, who summarised Academic, Peripatetic, and Stoic doctrine.) When it is said that the good man (σπουδαῖος) is great ὅτι δύναται ἐφικνεῖσθαι τῶν κατὰ προαίρεσιν ὄντων αὐτῷ καὶ προκειμένων, this may be Zeno's own language. J. M. Rist (1969) 232 says that 'when Zeno used the word προαίρεσις, everyone would have thought of Aristotle'. (Rist here seems to allow an exception to what he said on p. 15, 'the early Stoics avoid the Aristotelian word for choice (προαίρεσις)'). I do not see why Aristotle should have sprung to mind. προαίρεσις was, like τὸ προκείμενον, a word in general use and often indicated purpose, plan, policy. It was a favourite with Demosthenes, and phrases like ἡ προαίρεσις τοῦ βίου (23.41, cf. Ps.-Demosthenes 48.56) and ἐν προαίρεσει χρηστή καὶ βίῳ σώφρονι (*Ep.* 3.18) offer precedents for Epictetus' usage.

58. Aristotle also objects to the metaphor involved in calling σωφροσύνη a συμφωνία. This is to be found in [Plat.] "Ὅροι 411 e.

59. When at *EN* 1105 b 9 Aristotle concludes that 'it is well said that the just man arises by doing just things', he is approving a current view, not a discovery of his own.

60. The exact meaning of ἀφιλαρύνεται, perhaps a *hapax*, is obscure. The uncompounded verb is not recorded at all. The senses of the word ἰλαρός suggest that what was in mind was the playfulness of healthy young animals. εἰ ἄρα ἔστιν appears to introduce a sceptical note. Perhaps the writer doubted whether all first impulses and activities were pleasurable.

61. I do not venture to translate this word: 'habit' Stewart, 'formal cause' Burnet, 'permanent state' Ross, 'fixed disposition of character' Rackham.

62. Cf. J. M. Rist, *Phoenix* 28 (1974) 177, who finds 'a distant echo'. See also n.54.

63. J. M. Rist (1974) 178 says that Cleanthes certainly knew the concept that pleasure was an ἐπιγένημα and adds that 'Stoic ethics frequently builds on foundations prepared by Aristotle'. This statement about Cleanthes goes back to A. C. Pearson, *The Fragments of Zeno and Cleanthes* (1891) 310, and is based on Sextus Empiricus *adv. M.* 11.73, *SVF* 1.574 ἀλλὰ Κλεάνθης μὲν μήτε κατὰ φύσιν αὐτὴν (sc. τὴν ἡδονήν) εἶναι μήτ' ἀξίαν ἔχειν αὐτὴν ἐν τῷ βίῳ καθάπερ δὲ τὸ κάλλυτρον κατὰ φύσιν

μη εἶναι. Pearson says 'in short, Cleanthes treats pleasure as an ἐπιγένημα', but this appears to me to be far from certainly established by this passage. The meaning of κάλλυτρον is not clear: the only known sense of the word and of its variant κάλλυθρον is 'brush', 'broom' (except that it is the name of an unknown plant which may have borne some similarity to a brush, Arist. *HA* 553 a 20) but Pearson says that it must here mean 'ornament' and refers to *Suda* s.v. But that entry gives him no support. κάλλυτρα-κόσμητρα (a word otherwise known only from Σ *Peace* 59, where it explains κόρημα), ἀντί δὲ τοῦ δόρατος κάλλυτρον φέρων καὶ κόσκινον ἀντί τῆς ἀσπίδος καὶ κόφινον ἀντί κράνους, ἐπὶ ὄνου καθήμενος, an extract from some unknown author, seemingly describing the humiliation inflicted on, or parody made of, some soldier. A brush is certainly an artificial, not a natural thing, and although it is difficult to see why Cleanthes should have chosen it as a parallel to pleasure, he may have had a reason. Can it have been merely that a brush is not a possession to be highly regarded? If κάλλυτρον as used by Cleanthes has some unknown meaning, the likeliest may be 'aid to beauty', 'cosmetic' (J. M. Rist (1969) 47): as rouge on a woman's cheek makes her appear more beautiful than she really is, so pleasure makes an act seem more desirable than it is. A. Bonhöffer (1890) 314, accepting the Latin *caliendrum* as a corruption, thinks the word means false hair, or a kind of wig, or some form of head-dress.

64. Cicero, *Fin.* 3.32, *SVF* III 504 *posterum quodam modo et consequens putandum est, quod illi επιγεννηματικόν appellanti*. ἐπιγέννημα, perhaps originally a medical term, regularly has the meaning of a *subsequent* phenomenon. Professor Burnyeat points out its use by the doctor Erasistratus, who belongs to the earlier third century (Aetius 4.29).

65. A. Kenny (1978) 15 points out that nothing is heard of *EN* before Cicero (*Fin.* 5.12), who thinks them perhaps to be the work of Nicomachus, an attribution apparently also believed by Diogenes Laertius (8.88), who refers to *EE* as τὰ ἠθικά (5.21). There may, however, be earlier traces of *EE* in Diogenes' list (n.29) and they were used by Xenarchus in the later 1st century B.C. (Simplicius, *de caelo* 55, 25 ~ *EE* 1221a 12). Kenny argues (219-20) that *MM* are a student's notes of a course delivered by Aristotle, who used material from *EE* together with some that was later to be incorporated in *EN* (cf. J. M. Cooper, *AJP* 94 (1973) 327). If this is right, *MM* do not imply knowledge of *EN*. Note, too, that it would be odd if *MM* were given the title τὰ μεγάλα ἠθικά at a time when *EE* and *EN* were widely known. Moraux, however, (1951) 87, explains the word μεγάλα as meaning that the two books of *MM* are exceptionally long.

66. Professor Burnyeat calls my attention to *EN* 1177 a 18, which he would explain as a reference to some exoteric work, but he does not suggest that there is anything to show the appearance in it of the concept of an ἐπιγινόμενον τέλος.

67. Hahn's position is approved by J. B. Gould, *Journal of the History of Philosophy* 18 (1980) 219-22. Although I am basically at odds with it, I gratefully acknowledge a great debt to his book.

68. Cf. H. C. Cherniss, *Plutarch's Moralia* XIII 2.809 (Loeb). But I think he is astray when he says that Chrysippus made his assertion in direct contradiction of Aristotle's *de generatione* 328 a 26-28. Similarly S. Sambursky, *Physical World of the Greeks* (1956) 146, says that Chrysippus 'explicitly alludes to Aristotle's example.' In *Physics of the Stoics* (1959) 13 'explicitly' has become 'obviously'.

69. Another example of the way in which the assumption that the Stoics read and studied Aristotle's school-works causes scholars to shut their eyes is to be found in the belief expressed by M. E. Reesor in *The Stoics* ed. J. M. Rist 196: 'In what must be regarded as a direct response to Aristotle, Chrysippus asserted that it would not have been necessary for Cypselus to reign at Corinth although that had been predicted by the oracle of Apollo a thousand years earlier.' This comes from Cicero, *de fato* 13, who represents Chrysippus as replying, not to Aristotle, but to Diodorus: *at hoc, Chrysippe, minime uis*

maximeque tibi de hoc ipso cum Diodoro certamen est. Ille enim... tu et quae non sint futura posse fieri dicis... neque necesse fuisse Cypselum etc. Cicero's words provide no reason whatever for bringing in Aristotle, who never mentions Cypselus. It may be guessed that Cypselus came from Diodorus, who is known to have been greatly concerned with the definition of possibility and necessity and to have used the possibility of being at Corinth as an example (Alexander in *an.pr.* 184.1 Wallies). D. N. Sedley has argued ((1977) 96) that Cic. *de fato* 39 shows that *de interpr.* 9, where Aristotle deals with these questions, was unknown to the Hellenistic philosophers. (I should prefer 'strongly suggests' to his 'shows plainly'.)

70. I find some support for the view that Chrysippus did not know Aristotle's discussion of κρᾶσις in *gen. et corr.* in Alexander of Aphrodisias, who seems to imply as much at *de mixtione* 3.216.9: τῶν γὰρ [Στωικῶν] μετ' αὐτὸν οἱ μὲν Χρυσίπῳ συμφέρονται, οἱ δὲ τινες αὐτῶν τῆς Ἀριστοτέλους δόξης ὕστερον ἀκοῦσαι δυνήθεντες πολλὰ τῶν εἰρημένων ὑπ' ἐκείνου περὶ κράσεως καὶ αὐτοὶ λέγουσιν, ὧν εἷς ἐστὶ καὶ Σωσιγένης, ἕταιρος Ἀντιπάτρου. Does this mean that a copy of *gen. et corr.* came to light in the second century B.C. or that some Stoics, including Sosigenes, were in contact with Peripatetics who in some way, perhaps by school tradition, knew of Aristotle's views? A similar question arises with regard to Ocellus Lucanus (see p. 63).

71. Cf. M. Lapidge, 'Ἀρχαὶ and Στοιχεῖα', *Phronesis* 18 (1973) 240-75. Lapidge thinks it improbable that Aristotle's writings [i.e. our treatises] were known outside his school in 300 B.C. 'Yet some contact between Aristotle's thought and the early Stoics – even if only oral – seems likely'.

72. *SVF* II 427, 612, cf. 413 λέγεσθαι πῦρ τὸ πυρῶδες πᾶν καὶ ἄερα τὸ ἀερῶδες. Cf. Plato, *Timaeus* 58c-61c, e.g. all fire is pyramidal, but different kinds of fire exist because the triangles that form the pyramids differ in size.

73. *de caelo* 3. 306 b 16-22, 312 a 30-33, *gen. et corr.* 332 a 33 ff. See H. M. Robinson, *Phronesis* 19 (1974) 168-88, J. H. Meyer, *Museum Tusculanum* 40-43 (1980) 257-67. But W. Charlton, *Phronesis* 28 (1983) 197-211, defends his view against his critics, perhaps successfully.

74. Cf. the Stoic doctrine, perhaps Zeno's, Diog. Laert. 7. 135. *SVF* I 102 ἐν τε εἶναι θεὸν καὶ νοῦν καὶ εἰμαρμένην καὶ Δία.

75. Stoics frequently used διήκειν of the penetration of the κόσμος or of the elements by god, world-soul, or breath.

76. Plutarch, *Moralia* 414F, 1013C, 1015D, 1024C, Albinus *Eisagoge* 8, Aetius 1.19.

77. Cf. Plato *Philebus* 54 c, for a possible generalised use of ὕλη to mean 'material'.

78. Cf. R. D. Mohr, *Phoenix* 34 (1980) 138. Theophrastus interpreted Plato in the same, or in an even more Aristotelian way, frag. 48 Wimmer: δύο τὰς ἀρχὰς βούλεται (sc. Πλάτων) ποιεῖν, τὸ μὲν ὑποκείμενον ὡς ὕλην, ὃ προσαγορεύει πανδεχέες, τὸ δὲ ὡς αἴτιον καὶ κινεῖν, ὃ περιάπτει τῇ τοῦ θεοῦ καὶ τῇ τάγαθοῦ δυνάμει (Diels, *Doxographi graeci* 485).

79. A. Graeser, *Plotinus and the Stoics* (1972) 13, 'the Stoics' ideas of ὕλη developed out of continuous discussion of Plato's account in the *Timaeus* of χώρα'.

80. Notice how Alexander, *de mixtione* 226. 10 has to argue that by θεός the Stoics mean εἶδος τῆς ὕλης: εἶδος πῶς ἂν λέγοιεν αὐτῆς τὸν θεόν.

81. H. Happ, *Hyle* (1971) 275, thinks it more likely that Aristotle initiated the use of ὕλη as a technical term than that he learned it from Speusippus, Xenocrates, or common Academic practice. But he admits the possibility that Speusippus did so use the word, in spite of the lack of any evidence that he did. Professor Burnyeat has wondered whether Aristotle initiated the technical use of ὕλη while still a member of the Academy.

82. Cf. H. J. Krämer (1971) 108-131, who on the whole emphasises the likeness of Stoic physics to Platonist rather than Peripatetic views. He concludes (130) that the Stoics were affected by contemporary interpretation of the *Timaeus* rather than the *Timaeus* itself. But he notes (122) that ἄποιος ὕλη is nearer the Peripatetic than the Academic conception of ὕλη.

83. E.g. E. Bréhier (1951) 115 'la dualité de l'agent et du patient est fort certainement empruntée à Aristote, mais elle est interprétée d'une façon tout autre'.

84. Pohlenz (1947) 171, II 41, Hahm 100-102, who argues that in his biological works Aristotle treats air as cold, and that the Stoics, regarding the world as a living being, followed him in this. E. Bréhier 136-7 thinks the change due to the Stoic treatment of fire and air as active, water and earth as passive: elements opposed in this way could not share a quality, as they did in Aristotle's scheme.

85. 'Aristoteles bestimmt die φύσις daher als den immanenten Zweck, welcher den Stoff von innen heraus überwindet und formt. Erst damit macht er den Weg zu einer teleologischen Naturauffassung, wie sie die Stoa vertritt, frei. Der stoische Naturbegriff geht daher in seinen wesentlichen Bestimmungen auf Aristoteles zurück und ist nur durch den aristotelischen möglich.'

86. It is true that the word αὐτοκίνητος itself does not occur with reference to Stoicism before two late sources, Sextus and Origenes (*SVF* II 311, 988), but clearly it would have described the Stoic God, if it had been used. Aristotle may have introduced it, *Physics* 8. 258a 2.

87. Note also Eur. *Troades* 885

δοτις ποτ' εἶ σύ, δυστόπαστος εἰδέναι,
Ζεὺς, εἴτ' ἀνάγκη φύσεος εἶτε νοῦς βροτῶν.

88. *Natura quae per omnem mundum omnia mente et ratione conscians funditur*, Cic. *N.D.* 2. 115, *SVF* II 549.

89. Seneca, *Ep.* 90. 22, reports Posidonius as saying that the original maker of bread imitated nature: millstones are like teeth, etc. (F 284 Edelstein-Kidd). Marcus Aurelius writes (11. 10) αἱ τέχνηαι τὰς φύσεις μιμοῦνται.

90. This is a subject on which there is very little information, mostly drawn from late and hostile sources, Plotinus and commentators on Aristotle. Modern treatments: E. Elorduy, *Die Sozialphilosophie der Stoa* (1936) 90-101, M. E. Reesor, 'The Stoic Categories', *A.J.P.* 78 (1957) 63-82, P. H. De Lacy, 'The Stoic Categories as Methodological Principles', *TAPA* 76 (1945) 246-63, O. Rieth, *Grundbegriffe der stoischen Ethik* (1933), 70-84, 190-91, J. B. Gould, *The Philosophy of Chrysippus* (1970), 103-107, J. M. Rist, *Stoic Philosophy* (1969) 152-72 = *Problems in Stoicism*, ed. A. A. Long (1971) 38-57, A. C. Lloyd, *Problems in Stoicism* ed. A. A. Long, 65-71, H. J. Krämer *Platonismus usw.* (1971) 81-96, A. Graeser, *Plotinus and the Stoics* (1972) 87-100 and in *Les Stoiciens et leur logique*, Actes du colloque de Chantilly

18-22 Septembre 1976 (1978) 199-221, A. A. Long, *Hellenistic Philosophy* (1974) 160-3, M. Forschner *Die stoische Ethik* (1981) 43-53. E. Zeller, *Philosophie der Griechen* III I. 93-105 is still very useful.

91. Zeller III I. 95².

92. *In Categ.* 66. 32 Kalbfleisch εις ἐλάττονα συστέλλειν ἀξιοῦσι τῶν πρῶτων γενῶν ἀριθμῶν. Most of Stoic literature was no longer available to Simplicius (334.1 Kalbfleisch), who seems to have been dependent for their views on Porphyry's commentary on Aristotle's *Categories* (2.5, 3.2 Kalbfleisch), Reesor 63.

93. E.g. Graeser (1972) 88: 'The Stoics' division of τὸ ὄν into four kinds ... had certainly been developed from a very critical reply to Aristotle's approach'. This is the modern version of Dexippus' view, *in categ.* 5.18 Busse (cf. Simplicius *in physica* 94.11 Diels), that the Stoics were trying to upset Aristotle. Some later Stoics – Athenodorus and Cornutus are mentioned – did attack Aristotle's scheme of categories (Simplicius *in categ.* 18.28, 62.24, 66.32, 128.5, 187.28, 359.1), but there is no evidence that they wished to substitute the Stoic 'categories'. As Dr Sedley points out to me, Athenodorus argued that Aristotle's ten categories were too few.

94. This was noticed by P. H. De Lacy, *TAPA* 76 (1945) 247, with regard to Epictetus. He believed that the word οὐσία was used to mean what was alleged to have been called ὑποκείμενον.

95. This is what Philo says: 'Having established [ἐν τοῖς περὶ αὐξανομένου] that it is impracticable for two things uniquely qualified (ἰδίως ποιοί) to exist with the same substance (ἐπὶ τῆς αὐτῆς οὐσίας) he [Chrysippus] continues: "For the sake of argument let us suppose one man with all his parts and another lacking a foot, the complete man called Dion and the incomplete Theon, and then Dion has his foot amputated". The question being put, which of them is destroyed, he alleges that it is more properly Theon. This shows more concern for paradox than for truth. How can the man who has not been mutilated in any way, Theon, have been wiped out, while Dion, whose foot has been cut off, has not been destroyed? "Necessarily", he says, "Dion, whose foot has been severed, has reverted to the incomplete substance of Theon, and two ἰδίως ποιοί cannot be attached to the same substrate (περὶ τὸ αὐτὸ ὑποκείμενον εἶναι). So necessarily Dion remains and Theon is destroyed". Not only is the conclusion paradoxical but the argument also is incoherent. The case imagined would seem to result in the following development: "the same ἰδίως ποιόν cannot be attached to two substances (cf. the familiar Stoic doctrine that no two peas are exactly alike), therefore one substance must be destroyed." But that is not what Chrysippus said.

It can be suspected that the difficulty in understanding Philo's report arises from its incompleteness, which may make the task impossible. Nevertheless here is an attempt. The substance (οὐσία) of a man or any living being is never, according to the Stoics, destroyed, but it changes in quantity as he grows or loses weight: additional substance is not created but drawn from elsewhere; when he loses substance, it is not destroyed but takes another shape outside him. An ἰδίως ποιός is not a unique quality, but the possessor of a unique quality. Theon and Dion are two such persons. There is a unique quality that makes Theon Theon even although he changes physically (*SVF* II 395, cf. Arius Didymus frag. 27, Diels *Dox. Gr.* 462), similarly Dion is Dion. So after the amputation Dion is still one ἰδίως ποιός and Theon is another; there are still two ἰδίως ποιοί. But there also appear to be two substances, that of Dion and that of Theon. How then would there be any danger that the two ἰδίως ποιοί will be attached to the same substrate? Can it be that the substances of the two men are now no more than numerically different, but otherwise identical? It could then be said that the two men, two ἰδίως ποιοί, had the same substrate, a thing which we began by declaring impossible.

But this would involve neglecting the ambiguity of the word 'same'. The substances are the same (quantitatively) and not the same (numerically). But the numerical difference makes possible the

simultaneous existence of *ἰδίως ποιοί*. It is hard to believe that Chrysippus would not have seen the fault in this procedure, which is made slightly more plausible by the substitution of 'substrate' for 'substance', moving from the physical plane, where two different things obviously exist, to the logical, where it is easier to play with words. Moreover, as reported, he provided no reason why, if one man must be eliminated, it should be Theon. Can it be that he put up the argument in order that it should be knocked down, and some controversialist, Philo's authority, took it seriously, whether through a careless mistake or deliberate misinterpretation?

D. N. Sedley, *Phronesis* 27 (1982) 267-70, suggests that Theon and Dion are not two persons but that Theon is a name given to that part of Dion that excludes his foot. If that can be accepted, many of the difficulties disappear, but not all. In what way would the *ποιότης* of Theon differ from that of Dion after the amputation, so that they could both be *ἰδίως ποιοί*? Moreover the language in which Chrysippus introduces Dion and Theon gives no hint that they are not, as would naturally be expected, two different persons, but that Theon is a part of Dion. The fact that they are to be imagined (*ἐπινοεῖσθαι*) is quite insufficient to convey this. The verb is used because it is highly unlikely that any reader would in real life have met a pair whose relation was that postulated by Chrysippus.

96. Achilles, *Isagoge* 8 (*SVF* II 610), states that the Stoics considered there to be only so much void as was necessary to accommodate the expanded cosmos. This is a heretical view, contradicted by all the other evidence. It was ascribed by Aetius to Posidonius (fr. 97 E-K), whom Achilles is known to have used, directly or indirectly, elsewhere (fr. 128, 149, 209 E-K). There is nothing to show why Posidonius departed from the established line. He may have known and wished to accommodate the arguments of Aristotle (see below), as is hesitantly suggested by M. Laffranque, *Poseidonios d'Apamée* (1964) 310; but those arguments were directed against all void whatsoever. Professor Kidd has suggested reading καθ' ὅσον (for ἀλλ' ὅσον) αὐταρκῆς εἰς τὴν διάλυσιν in Aetius: void was limited, not absolutely, but in so far as it was sufficient to accommodate cosmic expansion. I record, but do not accept, this.

97. The question whether what was possible must occur sometime had been made well-known by Diodorus' famous 'Master Argument' (Epictet. 2. 19.1-11).

98. Some modern writers call this aether, as does [Aristotle], *de mundo* 392 a 6. Aristotle himself seems in the school-works to refrain from adopting the word, but to regard it as one used by some earlier philosophers to denote what he himself did not name (*de caelo* 270 b 22, *meteor.* 339 b 20). Perhaps he did not follow them because Anaxagoras had used it to mean fire and Empedocles to mean air. To give it yet another meaning might have been confusing. The evidence about *περὶ φιλοσοφίας* is clear: the phrases of frag. 27, *quintum genus uacans nomine* (Cic. *Tusc.* 1.22) and *elementum quod ἀκατονόμαστον ... nominauit* (Clement, *Recogn.* 8.15) outweigh Cic. *ND.* 2.42 *cum in aethere sidera gignantur* (frag.21), which is Stoic use of Aristotelian material.

99. Aristotle, *gen. et corr.* 326 a 8, Theophrastus, *de sensu* 61, Simplicius, *de caelo* 269.4-14, 569.5-9, 712.27-31, in *physica* 1318.30-1319.5. O'Brien treats the same problem exhaustively in *Theories of Weight in the Ancient World: Democritus, Weight and Size* (1981), particularly 153-248. He concludes that Democritus' atoms always had weight, dependent on their size, and that this caused their movements (not perpendicular movement through the void, which was Epicurus' invention).

100. Professor Burnyeat points out that at *Met.* 1052 b 30 Aristotle himself says that 'the lighter object has some weight'.

101. It will be noted that what is weightless is assumed to have effects opposite to those of what has weight, and that those effects are not merely opposite but also equal and opposite. This is further evidence that *κοῦφος* and *ἀβαρής* are synonymous. For *κοῦφος* is normally the opposite of *βαρὺς*; it is

an absolute quality, not merely 'having less weight'. It must also be understood that to say that the cosmos has no weight does not mean that it is ἀβαρής.

102. Epicurus was one such. Being a flat-earthier, he could understand down in the void as the direction parallel to that from his head to his feet when he was standing upright.

103. Another passage where he apparently contradicted himself is quoted by Plutarch, *Stoic. rep.* 1054 C (SVF II 551) from the fourth book *περὶ δυνάτων*. In it he spoke of the cosmos' being in the middle of the void and therefore immovable. The passage is hard to use, for it may have been torn from its context, of which Plutarch gives no hint. Hahn indeed argues (260-5), although he does not convince me, that Chrysippus was quoting someone else's views.

104. Cf. P. Moraux in *Aristotle on the Mind and Senses* (1978) 284: 'the two centuries after the death of Theophrastus show no trace of the use of *de anima* and we can suppose it was hardly read before Andronicus. What we know of Strato and Critolaus shows that they did not base themselves on Aristotle's treatise'.

105. I.e. it is co-extensive with the body, with which it is completely mixed, so as to occupy the same space, in accord with the Stoic belief in κρᾶσις δι' ὄλου.

106. The word εὐπνοία seems to be associated with the belief that the body breathes through the pores of the skin as well as through the windpipe, cf. Philistion frag. 4 *ἔταν γὰρ εὐπνοῖ ὄλον τὸ σῶμα καὶ διεξίη ἀκωλύτως τὸ πνεῦμα, ὑγίεια γίνεται · οὐ γὰρ μόνον κατὰ τὸ στόμα καὶ τοὺς μυκτῆρας ἢ ἀναπνοὴ γίνεται ἀλλὰ καὶ καθ' ὄλον τὸ σῶμα*, Diocles frag. 141 (p. 178.18 Wellmann) *ποιεῖ δὲ ἡ μὲν τρίψις τὸ δερμάτιον ἰσχυρότερον... ἡ δὲ σμῆξις τοὺς πόρους καθαρωτέρους καὶ εὐπνωτέρους*. [Ar.] *Probl.* 966a 7 *ἡ δὲ τρίψις εὐπνουν καὶ ἀραιὰν ποιεῖ τὴν σάρκα*. This form of breathing was Empedoclean (DK 31B 100) and Platonic (*Tim.* 77e-79e), and presumably accepted by Chrysippus.

107. Zeno is represented by Tertullian, *de anima* 5 (SVF I 137) as defining *anima* as *consitus spiritus* and by Macrobius, in *somnium Scipionis* 1.14.9 as calling it a *concretus corpori spiritus*. The participles *consitus* (from *consero*) and *concretus* (from *concreresco*) have a suggestion of growth which makes them renderings more suitable to σύμφυτος than to συνεχής τῷ σώματι. Yet *concretus corpori* may well represent συνεχής τῷ σώματι in view of Chalcidius' use of *concretio* to imply μίξις δι' ὄλου (in *Tim.* 221, SVF II 796). An allusion to the root φυ- may also be seen in the phrase *naturalis spiritus* ascribed both to Zeno and to Chrysippus by Chalcidius in *Tim.* 220 (SVF I 138, II 879). But Zeno may have used the words *συμφυῆς πνεῦμα*, which appear several times in reports of Stoic doctrine (SVF II 774, 778, III 305), not σύμφυτον πνεῦμα.

108. Wiersma also thinks that Zeno's belief that the soul was nourished by exhalations from the blood (SVF I 140 and 141) came from an Aristotelian belief that the innate breath was so nourished, but no such belief emerges from the passages he quotes (*de respiratione* 480 a 2 ff. and *de gen. anim.* 781 a 23 ff.).

109. F. Steckerl, *The Fragments of Praxagoras of Cos* (1958), places his birth about 340 B.C., Zeno's was probably in 334 or 333.

110. When advances in anatomy had shown the nerves to be connected with the brain and so thrown doubt on Zeno's view, never abandoned by orthodox Stoics, that the 'leading element' of the soul was seated in the heart, Chrysippus was to appeal to him as an authority for the derivation of the nerves from that latter organ (SVF II 897, Galen, *de Hipp. et Plat.* I. 7 (81) p. 145 M.).

111. Notice however that inborn warmth does not necessarily imply connate *pneuma* or a connate soul. Diogenes of Apollonia 64 A 28 Diels γεννάσθαι μὲν τὰ βρέφη ἄψυχα ἐν θερμασίᾳ δὲ (ἐνθερμα δὲ Diels). ὅθεν τὸ ἔμφυτον θερμὸν εὐθὺς προχυθέντος τοῦ βρέφους τὸ ψυχρὸν εἰς τὸν πνεύμονα ἐφέλκεσθαι.

112. In Wellmann's *Fragmentsammlung d. griechischen Aerzte* the word ἀνάψυξις is accidentally omitted in Philistion frag. 6, but correctly retained in Diocles frag. 15.

113. G. Verbeke, *L'évolution de la doctrine du pneuma* (1945) 12-15, remarks on the similarity between the Stoics and Diocles.

114. Hahn 269-72 and F. Solmsen, *Mededelingen d. Koninklijke Nederlandse Akademie Afd. Letterkunde* n.s. 24 (1961) 265-89 (= *Kleine Schriften* 1 436-60) are non-committal. K. Reinhardt, *Poseidonios von Apamea* (1954) 701 (= *RE* xxiii), *Poseidonios* (1921) 228-34, thinks that Posidonios added the Aristotelian arguments. I do not find it impossible that Cicero himself, who knew Περὶ φιλοσοφίας, was responsible.

115. V. Goldschmidt, *Le système stoïcien et l'idée de temps*, (ed. 3 1977) 30-45, J. M. Rist (1969) 273-278, S. Sambursky (1959) 100-105.

116. Similarly we do not know what caused Chrysippus to modify Zeno's definition to the form 'interval of the movement of the cosmos' (*SVF* II 509, 510); presumably he wished to provide a universal time, as opposed to possible private or local times, for example one dependent on the swelling of the Nile and another on the blowing of the etesian winds. In any movement or change two instants can be recognised, between which there is an interval. Whether this interval is or is not time, it is certainly closely connected with time.

117. But he also said that present time ὑπάρχει, while past and future ὑφίστασι, ὑπάρχουσι δ' οὐδαμῶς (*SVF* II 509, 518). There is nothing that explicitly shows that the present time that ὑπάρχει is the extent of time that we call by that name, that which κατὰ πλάτος λέγεται (*SVF* II 509, cf. Posidonius F 98 E-K λέγεσθαι δὲ τὸ νῦν καὶ τὸν ἐλάχιστον πρὸς αἴσθησιν χρόνον περὶ τοῦ διορισμὸν τοῦ μέλλοντος καὶ παρεληλυθότος). But I think that must be what Chrysippus intended. Attempts to explain the difference between ὑπάρχειν and ὑφίστασθαι are made difficult by the tendency to use a modern vocabulary for which there are no Greek equivalents, and by the fact that the words seem not to have been frequently used by the Stoics; they were not technical terms. But what ὑπάρχει is 'really there', in the sense of being to hand and perceptible, so that τὸ ὑπάρχον is what causes a φαντασία καταληπτική (*SVF* II 60, 97), while what ὑφέστηκε 'really exists', as a man does not after he is dead (*SVF* II 202 a), but as the soul does, distinct from the body (*SVF* II 473, p. 155.26). So present time is one in which we are directly aware of movement or change, past and future time have a real existence, but are not to hand, with us, directly perceptible. Chrysippus attempted to clarify the meaning of ὑπάρχει by comparing its application to attributes: 'walking ὑπάρχει μοι when I am walking, but not when I am sitting' (*SVF* II 509). J. B. Gould (1970) 115 sees that this is an imperfect parallel. There may be more illumination than I can find in A. C. Lloyd's discussion in his lecture 'Activity and Description in Aristotle and the Stoa' (1970) 232-4. He translates ὑπάρχει 'actually belongs', but does not indicate to whom present time belongs. R. K. K. Sorabji, in an interesting article 'Is Time Real?', *Proceedings of the British Academy* 68 (1982) 189-213, paralleled in *Time, Creation and the Continuum* (1983) 21-6, treats Chrysippus' views as a reply to Aristotle's puzzles at *Physics* 4. 217 b 29-218 a 30, but does not explicitly maintain that Chrysippus knew the Aristotelian passage. Sorabji appears to me to involve himself in difficulties by not taking sufficient account of the lack of correspondence between Greek and English vocabulary. There is no Greek for the word 'real'. Of course the Stoics did not think time to be real if by real we mean a corporeal thing (ὄν), but they did not take it to be a nullity; the word χρόνος was not without significance. Time was something

real, in another sense of the word. The difference between *ὑπάρχειν* and *ὑφ'εστῆκεναι* is not the same as that between corporeal and incorporeal; both words can be used by Stoics of both kinds of thing. They would not have accepted Plutarch's identification of *εἶναι* and *ὑπάρχειν*, *comm. not.* 1074 D.

118. Although this is not ascribed to any particular author, there is nothing in it to suggest that it is later than Chrysippus. But Aetius' summary does not command complete confidence. When in the middle he talks of 'ways' he may, as Dr Sedley convinces me, mean those of memory and experience; it is not necessary to believe that something has fallen out here (as I did, *Problems in Stoicism* ed. A. A. Long, 26). But at the end the claim that reason is made up (*συνπληροῦσθαι*) in the first seven years is surprising and conflicts with all other sources, which give 14 as the age when it is established. The evidence is set out and discussed, too easily, by L. Stein, *Die Erkenntnistheorie der Stoa* (1888) n. 232. Aetius seems to have confused the beginning of the growth of reason in the first seven years of life with its completion round about the age of fourteen.

119. Aristotle strives after accuracy, but does not attain it entirely. He speaks of memory of the same thing, but then seems to substitute memory of the same characteristic common to a number of different individuals. A little later he says 'the individual is sensed but the sensation is of the universal, e.g. of man, not of the man Callias'. There is a similar shift in the parallel treatment at the opening of *Metaphysics A*. To quote Ross's commentary, 'after having described [experience] as produced by many memories of the same object, Aristotle proceeds to describe it as embracing a memory about Socrates and a memory about Callias. These are not the same object, but only instances of the same universal'.

It will be noted that, if Aetius is to be trusted, the Stoics used the phrase 'memories of the same kind' where Aristotle had said 'of the same thing'. Their version will cover both memories of Socrates, seen on various occasions, and memories of the character *man*, common to Socrates and Callias.

Neither Aristotle nor the Stoics explain how the possession of concepts gives rise to reason. But it is clear that without concepts there could be no thought. It is then a fact of experience that the human mind combines first concepts and then the propositions given by this combination and from that derives further propositions. This is thought and reason.

120. I would not claim that Zeno actually read any of Xenocrates' very numerous writings. H. Dörrie has maintained ((1976) 170) that later writers show no direct acquaintance with them and that this suggests that they were never published.

121. Ibid. 268 he concludes that Posidonius had access to the *Rhetoric*, *Ethics*, *de anima*, and *Metaphysics* and that he wrote for others who could catch an allusion to them. L. Tarán (1981) 729 confidently writes 'Rhodes, where Aristotle's treatises must have been available'.

122. Professor Burnyeat notes Cleanthes, *SVF* 1 566.

123. Conscious imitation is implied by other verbs of the same formation: *πυθαγορίζω*, Antiphanes frag. 226, Alexis frag. 220; *ἡρακλειτίζω*, Arist. *Met.* 1010 a 11; *δημοσθενίζω*, Plut. *Cic.* 24; *εὐριπίδαριστοφανίζω*, Cratinus frag. 307 Kock, 342 Kassel-Austin, cf. *ἀντισθενισμός* and *διογενισμός*, Julian, *Or.* 6.187. I. Düring (1957) 365 says that in Strabo 13.1.54 *ἀριστοτελιζέειν* means 'carry on research and write scholarly treatises'. That is because the context shows those to be the Aristotelian activities imitated. The word must always be understood in its context.

124. There is no sign that he knew Book IV, which is a separate course of lectures (I. Düring (1944)). M. Laffranque, *Poseidonios d'Apamée* (1964) 223, thinks he made 'l'étude approfondie' of *Meteor.* 1-3.

125. Cf. W. Theiler, *Poseidonios, Die Fragmente* (1982) II 44.

126. One cannot perhaps absolutely exclude the possibility that all the material Posidonius seems to have found in the *Meteorologica* was also in the *Problemata* and taken by him from there, but I think it very unlikely.

127. F. H. Sandbach, *Illinois Classical Studies* 7 (1982) 210-11, 223-5.

128. P. Moraux (1973) 1 31.

129. Cf. Laffranque 276.

130. K. Reinhardt, indeed ((1921) 48), says 'so gut wie nichts gemein'.

131. I retain the references to Müller's edition, since his pagination is recorded in that of P. H. De Lacy, which supplants it.

132. P. Moraux in *Aristotle on the Mind and Senses* (1978) 284 says that 'il serait osé de voir dans sa théorie des facultés de l'âme le fruit d'une étude personnelle du *De Anima*'. Compare n. 104 above. L. Tarán (1981) 724 n. 7 too hastily believes that F 149 E-K indicates knowledge of *de anima* 411 b 6-10.

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