

ADVERSARIES AND AUTHORITIES

The strategic aim of the set of studies I have embarked on in collaboration with the sinologist Nathan Sivin is to examine Greek and Chinese philosophy and science afresh. Limiting our main inquiries to the period down to about A.D. 300, when Christianity came to be a major factor in the Graeco-Roman world and Buddhism began to be an important influence in China, we aim to ask questions concerning the differences in the ways in which philosophy and science were done in ancient Greece and China, why there should have been such differences, and what the philosophy and science done owed to the social, political and institutional background of the circumstances in which they were produced. It is high time that historians of Greek and Chinese science stopped treating their subjects principally as happy hunting grounds for point-scoring, chalking up anticipations of modern science, and especially priority claims as to who did what first. For they could clearly not have been a preoccupation of the ancients themselves.

Looking at ancient science in that way just distracts attention from the prior, fundamental, question of what *they*, the ancients, thought they were doing. That is the key question, even though it is not one to which there is a single, univocal, answer applicable to the *whole* of Greek, or the *whole* of Chinese science, but rather there are, obviously, many different answers, in either case, for different fields and for different periods.¹

But questions to do with the sociology of science, with its place in society, and the institutions within which scientists worked, with how they were trained and recruited, and how, indeed, they made a living if they had to, are even less often systematically pursued than what can be said about what their aims were. There are, to be sure, plenty of *idées reçues* about those subjects implicit in many modern discussions, and sometimes explicit in them. My aim here is to tackle a group of interrelated questions to do with styles and modes of intellectual exchange, in different areas of Greek and Chinese philosophy and science, with a view, precisely, to challenging some of those assumptions. I shall focus especially first on issues to do with adversariality, that is with the cultivation, or the avoidance, of polemical confrontation; and secondly on authority, the use of the appeal to authority figures in bids to settle scientific and philosophical questions. By authority figures I mean those who are invoked as support or justification for a particular idea, theory or practice: it is not that such figures are necessarily held to be infallible or immune to criticism, though it is obvious that the more they are criticised, or deemed open to criticism, the less weight they carry for constructive purposes.

These two are not symmetrical subjects. Appeals to authority, for instance, are often overtly or covertly polemical. However the two rubrics together will allow me to discuss a fair number of the salient features of the styles of intellectual exchange I am concerned with.

My argument will proceed in three stages. My starting-point is what I take to be a common view of a fundamental contrast. On the one hand, as has been a recurrent topos at least since Burckhardt, the Greeks exhibited highly developed agonistic traits in every part of their culture, from gymnastic competitions to theatrical ones, across the board in their legal and political experience, and in many aspects of their intellectual life, philosophy and science included. On the other, it has often been claimed that the Chinese were eirenic rather than polemical and rejected aggressive adversariality of any kind.²

The first stage of my discussion will be to see what can be said *for* such a view and also whether analogous contrasts appear *prima facie* plausible with regard to attitudes towards authority. The second stage will then be to submit those suggestions to a severe critique, to point out some of the major qualifications and reservations that have to be entered for any such thesis to be acceptable.

This in turn will lead me, in the third and most substantial part of my study, to revise the central questions we need to focus on, to move from a descriptive to the – admittedly far more difficult – explanatory mode, to consider not just what is the case, but why. Whatever we make of purported contrasts (stage 1) or similarities (stage 2), the key issue throughout is why the diverse styles of attitudes or of exchange should have been cultivated in the forms they were.

In this study I shall concentrate on just two topics especially. The first is the role of what are conventionally, but in certain respects rather misleadingly, called ‘schools’ of philosophy or science in Greece or China – where in Greece one of the chief terms is αἵρεσις, ‘sect’, literally ‘choice’, while in China the main term is 家, *Jia*, one of whose primary meanings is simply ‘family’. The second relates to the typical audience or addressee of scientific and philosophical works: at whom were they targeted, whom were they trying to persuade?

It goes without saying that, on issues as complex as this, any ambition to offer a decent general analysis, let alone one that could claim to have explanatory power, has to be tempered by a due recognition of the diversity of the material under consideration and of the difficulties of interpretation it poses. Further problems, to do with the inadequacy of our sources, and their bias, have been sufficiently aired on other occasions³ to need, I trust, no further rehearsal here.

I

For our first stage we may begin with the famously agonistic Greeks and the less famously irenic Chinese of our chosen period. Any acquaintance with early Greek philosophy immediately brings to light a very large number of instances of

philosophers criticising other thinkers – whether perceived as fellow philosophers or not.⁴ Thus Xenophanes attacks Homer and Hesiod by name (fr. 11, 12, 14–16), and Heraclitus attacks not just Homer, Hesiod and Archilochus, but also Xenophanes, Pythagoras and Hecataeus.⁵ Possible implicit criticisms are even commoner and may even go back to points at which Anaximander diverges from Thales.⁶ Xenophanes satirises Pythagoras' belief in metempsychosis in fr. 7, Heraclitus may have Anaximander in mind in fr. 80,⁷ Empedocles implies disagreement with Parmenides,⁸ and so on.

This is not just a feature of *early* Greek philosophy. Plato is generous, sometimes, to some of his predecessors, notably Parmenides, but he criticises most of the Presocratics, including him, as well as the poets and the sophists, both as collectivities and as individuals. Homer, in particular, though much used, is subjected to blistering attack. Those who engaged in the inquiry into nature in the mechanistic, anti-teleological, mode are labelled atheists in *Laws* 10, 885c–d, 888e–90a, where the Athenian Stranger recommends dire sanctions for any who do not mend their ways, imprisonment first, followed by death if they do not recant, 907d–9d.

Aristotle, too, one of our major sources for his predecessors, of course, criticises them all more or less severely, not least Plato himself. Although in that case it is sometimes difficult to distinguish criticisms of Plato himself from those of views held by Platonists,⁹ he attacks Plato by name often enough for the point to be made. From the list of occasions when philosophers are attacked by name in the Hellenistic period, by Epicureans, Stoics, Sceptics and the rest, one could pretty well reconstruct the main lines of the development of Hellenistic philosophy itself. Indeed in several cases that is precisely how we have to proceed, to reconstruct the contributions of individual Hellenistic philosophers, when we do not have their own writings.

Nor is this just a matter of 'philosophy', howsoever understood. Hippocratic texts join in the criticism of named Presocratics, Melissus in *On the nature of man* ch. 1, Empedocles in *On ancient medicine* ch. 20. They attack fellow doctors and their writings, naturally, even more commonly, beginning with the criticism of the authors and revisers of the (lost) work called *Cnidian sentences* in *On regimen in acute diseases*, and including attacks that imply that *every* other doctor is wrong.¹⁰ Much later, Hippocrates, idolised by some, was criticised extensively by, among others, Celsus and Soranus, while Galen uses his interpretation of Hippocrates as a stick to beat his rivals and opponents with, not just Lycus, the 'bastard of the Hippocratic sect', and other favourite enemies of Galen's, such as Julian, but also Sabinus, Quintus, Numesianus, Stratonicus, Aephicianus, and even his own teachers, Satyrus and Pelops.¹¹

One might think, perhaps, that Greek mathematics at least might be an exception. Since we have almost no extant texts from before Euclid, that can hardly be confirmed or refuted there. Euclid himself, to be sure, adopts a studiously impersonal style in the *Elements* and his other works. But for evidence for hard-hitting polemic in Greek mathematics one need go no further than Pappus, who in the *Collectio* not only offers criticisms of Archimedes and Apollonius, no less, but as Serafina Cuomo has now

shown in detail, engages in a sustained debate with contemporary and near-contemporary mathematicians, both the admittedly unnamed mathematician whose study of the problem of the mean proportionals is criticised at length in book 3, and also named individuals such as Carpus and Sporus.¹²

As for my companion topic of authority, it is certainly true that the use of authority figures grows very considerably in the Hellenistic period, Euclid, Archimedes in mathematics, Hippocrates in medicine, Socrates and Plato in philosophy and so on.¹³ Yet two points have to be borne in mind. First it is well known that what is attributed to those and other worthies is often very much the construct of the Hellenistic writer doing the attributing. I showed that in some detail where Galen and Hippocrates are concerned – claiming that if Hippocrates had not existed, Galen would certainly have had to invent him, but then also that in a sense he did.¹⁴ But the treatment of Plato by ‘Platonists’ of one type or another would also exemplify the point.

Moreover, secondly, the *lack* of great authority figures for the writers of the classical period is striking. Homer was so treated in certain quarters, but is attacked more often than revered by Xenophanes, Heraclitus, Plato, as we have noted. Of course the Greeks had their Seven Wise Men, though there was never complete agreement about who the Seven were. But with the exception of Thales, it is not as if their teaching cut much ice in natural philosophy or science. Parmenides, as remarked, was much respected, but it was not as if the invocation of his name was warranty enough for the positions with which he was associated.

But what about the less famously irenic Chinese? Two of the earliest extant texts that mention the differences between different philosophical groups and individuals both make the point. These are the ‘syncretist’ *Tian Xia* chapter (‘Below in the Empire’ in Graham’s translation) in the *Zhuangzi* compilation, a text that dates maybe from the second century B.C.,¹⁵ and the account of the philosophical groups in the final chapter of Sima Qian’s *Shi Ji*, where Sima Qian records the views of his father Sima Tan. Sima Tan died in 110 B.C., and Sima Qian was writing not much later, around 90 B.C.

The *Tian Xia* chapter refers sweepingly to ‘100 *Jia*’ but also to named individuals, the legendary Lao Dan (putative author of the *Dao De Jing*), but also several historically more reliably attested persons, Mo Di (founder of the Mohists), Sung Xing, Yin Wen and indeed Zhuang Zhou (Zhuangzi) himself. Each of these is criticised at points, but each is said to have grasped some part of the ancient tradition of the Way and to have ‘got wind of’ and to have delighted in this. Precisely the same expression is used no less than five times throughout the chapter in order to make the point.¹⁶

In a similar fashion, in Sima Qian’s *Shi Ji* ch. 130, Sima Tan first goes through the ideas of the groups he calls by the titles (1) *Yin Yang*, (2) Confucians, (3) Mohists, (4) then the *Jia* labelled after the law (*Fa Jia*: the conventional translation is ‘Legalists’), and then (5) the *Jia* labelled as that of ‘names’ (*Ming Jia*: the common rendering ‘Sophists’ is a typically disastrous attempt to assimilate Chinese thinkers to Greek models).¹⁷ Then he turns to the *Dao*, 道, as he recommends it. All five of the groups first mentioned come in for criticism, but again all five are said to have taught things

that are 'not to be neglected', 'not to be changed', 'not to be dispensed with', 'not to be altered' or 'to which one cannot not pay attention'.¹⁸ Moreover one of the great strengths of the *Dao* Sima Tan himself recommends is that, according to him, it encompasses the best in all the other groups' teachings.¹⁹

There are, to be sure, serious problems about the extent to which either of these two accounts can be accepted as historically reliable: we shall come back to some of these later. But that does not affect the point we are concerned with here, and at this stage in our argument, namely the way in which the interactions of the groups are *represented*. Certainly in both *Zhuangzi* and the *Shi Ji* the emphasis is not on points at which the groups in question disagreed, proposed ideas that are incompatible with one another, or were otherwise competing with one another, but rather on what each of them had positively to contribute, how each succeeded, at least in part, in grasping something of the *Dao*.

As for the topic of the authority of the past, that might be thought to be equally easy to show, at this first stage in our discussion. Chinese thinkers of many different philosophical persuasions were repeatedly harking back to the teachings of the Sage Kings. Sometimes, to be sure, that is just for form's sake, and sometimes it masks covert criticisms of contemporary figures, shown up as inferior by contrast to the great models of the past. Nevertheless the idea that there is past wisdom, that there were, once, Sage Kings, is a commonplace.

Thus Confucius already presents himself not as an innovator, but as a transmitter – later he was to be represented as the recoverer – of earlier wisdom, a wisdom associated with the pre-dynastic reigns of Yao and Shun, and the three dynasties of Xin, Shang and Zhou. The Mohists, too, often invoke the Sage Kings, and even otherwise idiosyncratic characters such as Zhuangzi and the first-century A.D. sceptic Wang Chong also cite ancient authorities with apparent respect. In the *Tian Xia* chapter I have already cited, what each of the philosophers mentioned is *praised* for is getting some part (if not the whole) of the *ancient* tradition of the Way.

II

So, at the first stage in the argument, it may seem that a major contrast can be suggested between ancient Greek and ancient Chinese intellectuals, the former constantly criticising one another, the latter seeking the common ground, often under the banner of the revival of past wisdom. However, it is easy to see that the thesis suffers from serious limitations and weaknesses.

Take first the Chinese and authority. Just as there are some texts that praise the Sage Kings, so there are other that problematise that move. Han Fei (of the third century B.C.) bases an argument on the time that has elapsed since the founding of the Zhou – seven hundred years – so people are unable to fix which is the genuine wisdom of that time: nor can they be sure of the genuine Confucianism or Mohism. As for

inquiring into the Way of Yao and Shun, three thousand years ago, 'may I suggest that one can hardly be certain of it? To be certain of it without evidence is foolishness, to appeal to it though unable to be certain of it is fraud.'²⁰

Again the *Lü Shi Chunqiu* (also of the third century B.C.) has a chapter entitled 'Scrutinising the present', that suggests that the standards or principles (法, *fa*) laid down by former kings were important for their times: but the times did not come down with the standards. So the only thing to do is to ask *why* they set the standards they did. The answer is man, but 'I myself am a man. Therefore if I scrutinise myself, I may know other men, if I scrutinise the present I may know the past.' This is not a rejection of the value of ancient wisdom, but you should not follow the 'fixed' standards and ignore the times they were for, even though in a sense past and present are one. Besides, the canons (books) of the principles of the former kings have come down through earlier generations – and 'some people have added to them, others have subtracted from them'. So there are problems of authenticity, and textual criticism should not be neglected.²¹

Even more importantly, the relations between different Chinese intellectuals were sometimes very far from being irenic. The *Zhuangzi* compilation contains plenty of lampoons of Confucius.²² According to the *Tian Xia* chapter, the Mohists were divided among themselves, with different groups interpreting the Mohist canon differently, but each claiming that they were right,²³ and according to Han Fei, sectionalism or factionalism characterised contemporary Confucians²⁴ as well as Mohists.²⁵ The chief representatives of the *Ming Jia*, Hui Shi and Gongsun Long, are not only renowned for their disputatiousness but are treated with near contempt by many of the writers who refer to them.²⁶

There are, too, specific issues on which different thinkers took up diametrically opposed positions in explicit opposition to one another. One of the best known is the conflict on whether human nature is good, bad, or indifferent. Gaozi had argued that human nature is inherently indifferent, but Mencius held that it is good, while his view was later contradicted, in turn, by Xunzi, who thought that human nature is bad. Mencius quotes Gaozi (and is our main evidence for him) and Xunzi is explicit in citing and disagreeing with Mencius.²⁷

This is not just a feature of ethical disagreements. In cosmology, one view (*Gai Tian*) held that the heavens are a circular canopy set over a central square earth, but another (*Hun Tian*) held that the heavens are a sphere. These views are each related to observational procedures and instruments, and they were sometimes combined. However, they did not always just live in amicable harmony, since, as Cullen has shown,²⁸ there were distinct attempts to settle the issue between them. As for calendar studies and the establishment of cycles of eclipses, overt disputes over the competing claims of one system over another punctuate the two-thousand-year history of the Astronomical Bureau from Han times down to the last imperial dynasty, the Qing.²⁹

In mathematics, too, Chinese mathematicians frequently criticise the work of their predecessors. Liu Hui, in the third century A.D., points out the inaccuracies in the *Nine*

Chapters, the text from the first century A.D. on which he is commenting, and then, two centuries later, Zu Geng in turn congratulates himself on being able to solve problems that had defeated everyone else, Liu Hui included.³⁰

In medicine, finally, we have some detailed evidence of disagreements not just on points of theory, but at the level of clinical practice. Chunyu Yi's biography, the *Canggongzhuan*, as presented in Sima Qian's *Shi Ji* (ch. 105), in particular, contains the records of 25 case-histories. On no fewer than nine occasions Chunyu Yi distinguishes his own prognoses and treatments from those of other practitioners, sometimes just certain unnamed doctors, but twice other doctors whom he names. In one case (20) his own account of an illness is greeted with derision by a doctor called Xin, though Chunyu Yi's predictions turn out to be correct. Another case (22) is even more revealing. There Chunyu Yi treats a patient who is himself a doctor, called Sui, who had already begun treating himself. Called in by Sui to examine him, Chunyu Yi comments that the treatment begun is quite inappropriate: but Sui then justifies it by citing the authority of a legendary figure from the past, Bian Que. That in turn elicits from Chunyu Yi the response: 'How far your account is [from the truth].' Although Bian Que spoke as he did, there is a whole range of diagnostic questions that have to be evaluated before trying to apply his ideas. There are certainly rules for examination, but when the practitioners who apply them are ignorant, they are no use at all. Here a dispute about a particular case leads Chunyu Yi to draw a more general methodological moral: knowledge of the learned texts is evidently far from enough on its own to make one a successful practitioner.³¹

So much by way of just some of the qualifications to the picture of the purportedly irenic and authority-oriented Chinese that I sketched at the outset. But the account I originally proposed on the Greek side, too, could be criticised for downplaying important factors, not just the increasing role of appeals to authority in the Hellenistic period, but also the syncretist tendencies that are prominent at least in certain writers and traditions.

Thus in medicine, it is well known that, when it suits him, Galen represents Hippocrates, Plato, Aristotle, and even sometimes the Stoics, as being broadly in agreement with one another, especially when the point on which they are taken to agree is one that Galen himself endorses. Such a move also enables him, on such occasions, to claim priority for Hippocrates, and at the same time to rebut any charge that he, Galen, suffers from the φιλοτιμία that afflicts his rivals, in their zeal to introduce new theories.³²

But in philosophy, the most notable example of attempts to reconcile past authorities is the bid, in many neo-Platonist commentators, to have Plato and Aristotle agree. They do this sometimes, it is true, by way of an argument that distinguishes levels of comprehension, for which certain Platonic precedents could be cited. In that view, the Aristotelian theory can be said to be correct, but at a lower level of understanding than Plato's highest insights. But however justified, the synthesis produces some, to us quite strange, amalgams of Aristotelian physics and Platonic metaphysics.³³

III

But if we find, as we do, that many of the generalisations initially suggested about Greek and Chinese attitudes stand in need of substantial qualification, that is bound to make more complex our next task of trying to understand the underlying factors at work. What kind of explanatory schemata should we be looking for here in the first place?

Evidently, first, no account in the purely psychologising mode will do – as if it were a matter of the Greeks as a whole, or groups of them, or particular individuals, just being more disputatious than the Chinese, all of them or some of them. That would, in any event, merely redescribe – or rather misdescribe – the explananda, and all that does is to push the problem one stage further back. For *why* the Greeks, or some of them, should have been (if they were) so particularly disputatious, why the Chinese, or some of them, not, still remains totally unclear.

I am not, to be sure, claiming that anything like a full-scale causal explanation is going to be possible with regard to the subjects we are dealing with – not even with the most thorough exploration of the whole gamut of social, political, technological and economic factors influencing those two ancient societies through their complex and varied histories – factors which, in any case, themselves pose further problems for understanding. What I offer here is merely two possible lines of argument that relate to the institutions of science and philosophy. These are first, the role of more or less well-defined groups – ‘schools’ or sects – of scientists and philosophers, and secondly, the question of different types of targeted audiences for philosophical or scientific work.

As I noted at the beginning, it is customary to speak of ‘schools’ in both China and Greece, but in both cases we have to proceed with the utmost caution. First, China. It is obvious that the reference to one hundred *Jia* in the passage from *Zhuangzi* that I cited is mere hand-waving.³⁴ Even the six groups mentioned in Sima Tan’s account, in Sima Qian, are a very mixed bunch. The idea that there is a *Jia* of ‘Daoists’ is, as Sivin has shown,³⁵ quite chimerical – not least because just about every philosopher, and not just philosophers, claimed to follow the Dao. In some writers (though not, to be sure, in *Shi Ji* ch. 130 itself), the term ‘Daoist’ tends to become a residual category, applied to those who appear to show no other affiliation. Again the word for ‘Confucian’ (儒, *ru*) sometimes seems to imply no more than membership of the learned elite, and as for ‘neo-Confucian’, that modern term has been applied to quite different periods and to revivals of very diverse types.³⁶

Obviously those who were charged with the responsibility of cataloguing the works of earlier writers found it convenient (they still do) to have labels to attach to them. Some such factor is at work already in the Han dynasty bibliographical compilations, such as in the *Han Shu*.³⁷ But there is sometimes little real justification for the labels thus applied.

But in the cases where we can talk of more coherent groups, we must ask two fundamental questions: first did you have to belong to a *Jia*? Secondly, what did it mean to do so?

Evidently some individualists, both in the Warring States period (c. 480 to 221 B.C.) and later, fit very uneasily into any of the main conventional categories, even when we can accept these as meaningful for more than merely bibliographical purposes. I mentioned Wang Chong in the first century A.D., and even Zhuangzi himself (who lived much earlier, in the fourth century B.C.) might be considered a further example, although he and the writings named after him are usually labelled Daoist. But the contrast is with the Mohists, where the *Tian Xia* chapter informs us that the same canon of texts was adopted by various later-generation Mohists even when they are there represented as diverging in their interpretations (above, p. 32).

Outside philosophy, the circumstances are rather different. In medicine, the important groupings are less prominently labelled. Research on the various recensions of the *Huangdi Nei Jing* and their relations to even earlier medicine, as documented in the Mawangdui texts, is now beginning to reveal something of the work of synthesis and the appropriation of earlier ideas and practices in the versions of the *Huangdi Nei Jing* that have come down to us.³⁸ Again, in astronomy, from some points of view the most important dividing line comes not between one *Jia* and another, but between those who were, and those who were not, officials of the Astronomical Bureau. The running was made very much by those who were. When an outsider suggested an innovation, a revision of an eclipse cycle, for example, then if it won acceptance, he often found himself converted into an insider with a post within the Bureau.³⁹

But what did it mean to belong to a *Jia*? The essential points come out of a recent study by Sivin.⁴⁰ The chief role of the *Jia* was, undoubtedly, to preserve and transmit the teachings of a master, generally in the form of a canon, 經, *Jing*. For that reason, Sivin's preferred rendering of *Jia*, in some contexts at least though certainly not in all, is 'lineage', taking lineage to refer to 'a relationship between masters and disciples over several generations that is ritually centred on the transmission of a charismatic written text. It is no coincidence that the word *Jia* designates this relationship, since it was used from the Zhou on for many fictive kinship relations, i.e. those patterned on the ties between fathers and sons that involve passing on some patrimony (*ye*). It *implies* that the transmission will continue, but there is no literal expectation that it must do so.'⁴¹

Each successive generation of scholars had first to memorise the *Jing*. Being able to recite it came before being able to understand it, for explanation of the meaning of the text would only come after the student had shown a mastery of the words of the text itself. In some cases, moreover, access to learning the text is obtained only after a process of initiation. We have an instance of this in the *Ling Shu* recension of the *Huangdi Nei Jing*. There the Thunder Duke purifies himself for three days, and seals his oath by cutting his arm and smearing blood, before having the text of the book put into his hand by the Yellow Emperor.⁴²

Now certain features of the relations both between and within the different *Jia* have already been noted. As we saw in stage 2, there are plenty of cases of Chinese philosophers disagreeing with others and criticising them, including others with a broad allegiance to the same authority figures. We mentioned the divergent views on human nature expressed by Gaozi, Mencius and Xunzi. The last two are separated by sixty years or so, but both represent themselves as in some sense followers of Confucius.⁴³ Factionalism is a charge brought against both 'Confucians' and Mohists: as we saw, Han Fei could develop that point to claim that it was not at all clear what the founding figures were supposed to stand for (above, p.32 at n. 25).

At the same time it should be emphasised that as a general rule allegiance to your own immediate teachers in your *Jia* is unquestioned. This was part of your duty as the transmitter of the *Jing*. Your *Jia* was in a real sense your family, and as such was owed filial respect: so you would no more think of turning against your teacher and criticising him than against your own father.

The case of the doctor Chunyu Yi, who tells us a good deal about his early training and apprenticeship, illustrates that it was perfectly possible, in medicine, to have a succession of teachers, for he mentions that he learnt first from Gongsun Guang and then from Gongsheng Yangqing.⁴⁴ Yet we must also remark, first, that Chunyu passes on to his second teacher on the recommendation, and with the approval, of the first, and secondly, that there is no question of Chunyu criticising either.

In these circumstances, the role of debates in and between different groups in China is rather different from the expectations generated by the title of Graham's book, *Disputers of the Tao*. 'Dispute', 辯, *bian*, is in any case often a highly pejorative term, at least in certain contexts when used intransitively, where its meaning is not 'discriminate between' (as its homophone, 辨, *bian*) but 'to be argumentative or disputatious'.⁴⁵ That use is found not just in Warring States writers, such as Mencius, but also in Han dynasty ones, such as Wang Chong, and in the later 'syncretist' strata of *Zhuangzi*.⁴⁶ 'Discussion', 論, *lun*, is acceptable, though that may be more a matter of explaining a point of view than of arguing. Certainly 'eristic' and other terms are available in Greek to express disapproval of contentious argument: but in one respect at least Greek dialectic leaves more room for acceptable face-to-face argument with partners and opponents than is usually the case in China. This was in that the Greeks eventually came to formalise rules of procedure – for example concerning the roles of questioner and answerer – that allowed dialectic, as a joint endeavour, to be clearly distinguished, in principle at least, from eristic.⁴⁷ A thesis under examination could then formally be dissociated from its proposer – and its attacker – allowing a certain distancing of the ideas under discussion from those doing the discussing.

This is not to deny that argument has an important role in China too, not least as a means of maintaining and defending the position of the *Jia*, even sometimes a position within one. But it is certainly not *fundamental* to the activity of the *Jia*, whose primary role, as noted, was the preservation and transmission of a body of learning. That role places the principal emphasis on the authority of the text. The suggestion would be

that it is the *Jia* structure that leads as a general rule to an emphasis on the irenic and on authority – not that there are not many exceptions to that rule.

Now many more of the features of Chinese *Jia* apply also to Greek philosophical and medical groups than a stage-1 analysis might anticipate. Actually that is true about warnings to the effect that many so-called sects, αἱρέσεις, are the construct of scholars, ancient or modern. There is no need to elaborate on that here, except just to recall how *imaginary* such institutions as the medical ‘schools’ of Cos and of Cnidos, or even the Hellenistic sect of ‘dogmatists’, are.⁴⁸ Again, in Greece as in China, many individuals fall outside any group, particularly in the fifth and fourth centuries.

At the same time, some features of the operations of most Greek schools or sects are, it has to be said, very un-Chinese. First it is clear that Greek pupils could and did pick and choose between teachers and between institutions. They could and did attend the lectures of more than one teacher before deciding which group to join, or they could join different groups in succession, or they could go it alone and set up one of their own. Secondly, direct criticism of teachers is possible, and even quite common: this will lead us into the question of orthodoxy. Thirdly – the crucial question for this study – argument and debate take on two important roles: first they are one of the means of attracting and holding pupils, and secondly they serve to mark the internal and external boundaries of groups.

All three points should now be elaborated, even if very rapidly. It is true that our evidence for the first is partly anecdotal, from such sources as Diogenes Laertius’ *Lives of the Philosophers*. But it is overwhelming. Theophrastus was reported to have ‘heard’ Plato, but then to have followed Aristotle, whom of course he succeeded as head of the Lyceum. Euclid of Megara (not the mathematician) is said to have associated with both Socrates and Plato, but then to have formed the group known as the Megarians (or Eristics or Dialecticians). The founder of the Stoa, Zeno of Citium, was taught first by Crates the Cynic, and then heard Stilpo the Megarian, as well as Polemo, who was head of Plato’s Academy from around 314 B.C., before setting up his own school. The third head of the Stoa, Chrysippus, was taught by the then head of the Academy (Arcesilaus), but then went on to criticise him. He was also taught by the second head of the Stoa, Cleanthes, not that he agreed with all of his views either.⁴⁹ Those are examples from fourth- and third-century philosophy, but they can be multiplied many times over, from other periods,⁵⁰ and from medicine.⁵¹

With so much movement between schools and criticism both between and within them, one is forced to ask what held any of these groups together at all. Some of the schools, at least, had an institutional basis, buildings, a library, an official or quasi-official head. They were perceived by outsiders as holding certain views in common, and as having some kind of allegiance to whoever it was who was recognised as Founder.⁵² These points, too, however, need qualifying.

Thus membership of a school may often have involved contributing to its upkeep, and pupils (however defined, and in whatever discipline) usually paid for instruction. However, the distinction between a regular pupil paying for regular instruction, in

philosophy or medicine, say, and just anyone paying to hear a particular public lecture or debate, may have been no hard and fast one. Those associated with a particular school, whether as pupils or not, evidently felt *no life-long commitment* to it. Anyone could leave whenever they liked, and many did, whether to join another group, or to set one up for themselves.

It is true that when the question of the succession to the headship arose, more was at stake. It seems that heads were mostly elected by current members, though who exactly qualified to vote is unclear. But it is not as if the sole criterion for the new head was perceived doctrinal purity. Plato was succeeded first by Speusippus, then by Xenocrates, neither of whom agreed wholeheartedly with Plato's own philosophical positions.⁵³ When Chrysippus succeeded Cleanthes as head of the Stoa, we hear of a rivalry, and a debate, between Chrysippus (who had not been taught by Zeno himself) and Ariston (who had), as to who should represent Stoic doctrine in its disputes with its main rivals – a debate that Chrysippus won. Ariston, and two others, Herillus and Dionysius, are said by Diogenes Laertius to have 'differed' from the other Stoics, and it is easy to slip into thinking of them as heterodox. But we have to be careful, for that term may suggest there was more of a fixed orthodoxy for them to diverge from than we are really entitled to suppose existed. Ariston's teaching may have 'differed' from Zeno's at more important points than did Chrysippus'. But Chrysippus too was recognised to have 'differed' from Zeno (Diogenes uses exactly the same word), as also from Cleanthes, whom he is said to have left while Cleanthes was still alive.⁵⁴

While some allegiance to the Founder's view was expected, the question of what those views *were* was generally far more open, disputed and negotiable than was the case in China, even though negotiation, as we have seen, happened there too. True, there is one principal Greek exception to what I have been treating as the general rule there, namely the Epicureans, who were much more conservative than most of their rivals, both in the sense that there was less doctrinal development from the teaching of Epicurus himself, and in the sense that there were fewer defectors. However, with the other philosophical groups, and in particular with both the Academy and the Stoa,⁵⁵ the point stands. What the Founder himself stood for, could be, and quite often was, renegotiated from one generation to the next.

Argument and debate were thus essential to the activity of the Greek schools in their competitions with one another both for pupils and for prestige. I have illustrated the point from Greek philosophy, but it applies also to the learned medical groups of the Hellenistic period. While the actual extent of doctrinal uniformity between different contemporary members of a sect (let alone between different generations of those who passed as the *same* sect) varied, all sects acted as more or less stable, more or less well-organised and close-knit *alliances for defensive and offensive* argumentative purposes.

The Greek schools were there not just, and not even primarily, to hand on a body of learned texts, but to attract pupils and to win arguments with their rivals. They may even be said to have *needed* their rivals, the better to define their own positions by contrast with theirs.⁵⁶ In those battles with the competition, you relied on your co-

members for help, without necessarily being able to rely on them completely – for the possibility of their defection was always there.

In so far as they were thus locked in dialectical disputes with one another, Greek philosophical and medical schools used, as the chief means for the expression of their own ideas and theories, both lectures (public and private) and open, often public, debates, sometimes modelled directly on the adversarial exchanges so familiar in Greek law-courts and political assemblies.⁵⁷ The audiences they were aiming to persuade were first, a general public, and then more particularly their own immediate rivals and colleagues and potential adherents or pupils. We may now turn to my final topic, to consider what is suggested by the *prima facie* contrast presented by the fact that in China the preferred audience for much philosophical and scientific work was very different: the ruler or emperor himself no less.

The memorial to the throne is a standard vehicle not just of Chinese philosophy but also of astronomy and even, to a lesser extent, of medicine. Even when not actually presented to the throne, texts were often written, according to a well established convention, in the form of such a presentation. Indeed this became increasingly the case after the first great unification of China by the Qin around 221 B.C. Sivin has recently argued that what eventually happened in the next dynasty, the Han (from 206 B.C.) – though it certainly did not happen immediately – was the consolidation of certain key philosophical concepts, those of *yin yang* and the five phases, in something approaching an orthodoxy that served two distinct but complementary purposes.⁵⁸ First it helped to legitimate the new Han rulers: the claim was that the emperor was the sole mediator between heaven and earth and as such the guarantee of the welfare of the entire empire. Secondly, it helped to secure the roles of the intellectuals who were themselves responsible for that elaboration and consolidation. They thereby in part restored their own position, after the traumatic disruptions and destructions associated with the wars leading up to the Qin unification and with the anti-intellectual moves made by the first Qin emperor himself.

In this context, the establishment of the imperial Astronomical Bureau was no piece of disinterested support for scientific research. The welfare of the empire itself depended on harmonious relations between heaven and earth for which the emperor himself was primarily responsible. In these circumstances he had a *personal* interest in calendar regulation, in eclipse prediction, in the interpretation of omens and so on.⁵⁹ New astronomical ideas and systems regularly take the form of memorials to the emperor, whether composed by officials from within the Bureau or by outsiders.

There was no equivalent imperial Bureau for medicine, though some doctors held official positions at court as the attendant doctors of kings or nobles. But the *Canggongzhuan*, in the *Shi Ji*, refers to an imperial edict ordering a census of doctors with prognostic skills, in response to which Chunyu Yi submitted a memorial. In contrast to the Greek situation, where public doctors were sometimes appointed by the Assembly, and doctors' standing in general was generally a matter of their reputation

among their peers, what is striking about the Chinese evidence is that it shows that evaluating credentials could there be the responsibility not of other physicians but of the emperor or of the bureaucracy acting on his behalf.⁶⁰ We have other indications as well of imperial interest in medicine, in the role of the Yellow Emperor in the *Huangdi Nei Jing*. Although he is not always the interlocutor, several sections present dialogues between him and various respondents, Qi Bo, Shao Shi and the rest, where they generally make the running: in those cases, the Yellow Emperor often just asks pertinent questions, thereby nicely illustrating how he needs his advisers.

However, even before the unification of China, the roll call of Chinese philosophers who sought to act, and indeed acted, as advisers to rulers, is impressive. It begins with Confucius, and proceeds with Mencius, the Mohists, Hui Shi, Gongsun Long and many more. The *Lü Shi Chunqiu* is one of many classical texts that consist of advice to the prince. When Han Fei considers the topic of persuasion, in the *Shuo Nan* chapter (12) of *Hanfeizi*, often cited as a prime example of a Chinese interest in what the Greeks called rhetoric, the prime focus of analysis is persuasion of the *ruler*. Han Fei did not have to concern himself with persuading the δῆμος in assembly, and naturally enough a number of the factors relevant to Greek-style rhetoric are simply not on his agenda.⁶¹ The convention of addressing the ruler did not, of course, rule out criticising rival views, as we find happening often enough. But there is this difference, that that is criticism directed *to* a third party, whose views *had* to be deferred to, and that imposed certain restraints, not least because you did not know the extent to which the opposition had got to him before you.

Of course there are many exceptions from all periods. Chinese mathematics, for instance, does not take the form of memorials to the throne. In that very chapter of *Hanfeizi*, just quoted, although the topic for discussion is persuasion *of* the ruler, it is addressed primarily to those who had to do the persuading, ministers, not the ruler himself. But that said, there remains a marked penchant, in much Chinese philosophical and scientific writing, to take the ruler or emperor as the prime addressee. If you could attract his attention, that did wonders for your career. There were even distinct possibilities that the emperor, if persuaded, would implement the ideas you proposed, as with the case of the Astronomical Bureau.

But were not the Greeks also interested in persuading rulers? Has my earlier focussing on the debates in the schools not distorted the issue and exaggerated the contrast? Concessions must be made, for sure. First it is clear that some Greek philosophers were directly interested, and active, in politics. Some of the Pythagoreans evidently were, in the Presocratic period already, in Magna Graecia, a trend that continued down to Plato's contemporary, Archytas, the foremost statesman of Tarentum. Plato's own ill-fated visits to the court of Dionysius II of Syracuse were to try to persuade him to implement some of his ideas, and the Academy was, in part, a training-ground for statesmen. The list of Greek and Roman philosophers with political ambitions and experience contains some impressive names, not just Seneca, confidant of Nero, but the emperor Marcus Aurelius himself.

Greek works addressed to powerful statesmen are common enough, at least from the fourth century B.C. onwards, and they are not limited to those offering advice about political matters. Isocrates produces several examples of that last kind, addressed to Nicocles, Evagoras, Philip. But the Aristotelian Corpus contains a spurious *Rhetoric to Alexander* of more general scope. Among later technical treatises dedicated to rulers, there are Vitruvius' *On Architecture*, addressed to Augustus, and Oribasius' medical encyclopaedia, to the emperor Julian in the fourth century A.D.⁶²

The motives in some of these Greek and Roman cases are very similar to those that obtained in China. Vitruvius evidently sought the most prestigious patron possible – for his book and for his buildings. Yet first, access to powerful, let alone imperial, patronage was a comparative rarity: I take the Ptolemies' Museum to be the main exception, and even there the extent of the support it offered to scientists has often been exaggerated.⁶³ Secondly, there are fundamental differences in Greek and Chinese attitudes towards rulers. Where the Chinese never doubted that the wise and benevolent rule of a monarch is the ideal, the Greeks disagreed about the best political constitution as wholeheartedly as they did about every other topic in philosophy and science. Even when there was clearly no alternative to imperial rule – and Roman emperors at that – some of the philosophers contrived to maintain some sort of preference, in theory, for republican virtues: that even includes Seneca.⁶⁴

So we often find Greek philosophers adopting a stance of fierce independence *vis-à-vis* rulers whom they might otherwise have been expected to be keen to please. For every story of a philosopher toadying to a tyrant for a free meal, there is another that has the philosopher cocking a snook at the great. Aristippus at the court of Dionysius II illustrates the former,⁶⁵ but Diogenes the Cynic, asked by Alexander to name a request, says 'Stand out of my light.'⁶⁶

Yet with this independence came also a disadvantage. Compared with their Chinese counterparts, Greek philosophers and scientists had appreciably less chance of having their ideas put into practice. This was certainly the case in astronomy, where the increasingly accurate values obtained for the solar year and the lunar month in Athens by Meton and Euctemon around 430 B.C., and by Callippus and others in the next century, *might* have led to a comprehensive reform of the chaotic luni-solar calendars used by different Greek states, but in practice had only limited and sporadic effect even in Athens itself.⁶⁷ The problem with the democracies, as their critics kept pointing out, was that they were fickle in their loyalties, inconstant in their decisions. Autocrats, too, could be just as arbitrary, for sure, but when – as in this instance in China – their own interests were at stake, they could and did move swiftly from theoretical approval to practical implementation. The chief case where Greek autocrats were similarly involved is such an exception that it tends to prove (that is, support) the general rule: I am thinking of the Ptolemies' reported concern to apply the ideas of Alexandrian engineers to improve military technology.⁶⁸

The tendencies to internecine rivalry we find in much Greek philosophy and medicine may now be seen in a different light. In part, they may be seen as a reflection

of the comparative lack of the kind of outlets that their Chinese counterparts enjoyed with patronage before the Han and often with stable official status afterwards. The superiority of theory to practice is a theme repeatedly taken up by scientists as well as philosophers in Greece: but that was sometimes to make a virtue out of necessity, since their work often had little chance of practical implementation. That point is valid, within limits, even for political philosophy,⁶⁹ and it is increasingly true in other domains, such as mathematics and astronomy.⁷⁰

Let me now attempt to summarise the arguments I have presented. I began with a simplistic contrast between adversarial Greeks and irenic, authority-bound, Chinese, and then in a second stage pointed out some of the shortcomings of that opposition. Argumentativeness, and respect for authority, can both be found in both ancient societies, though not equally in both, nor uniformly across different disciplines and different periods. In a third part I have tried to identify some of the underlying factors at work in the social institutions within which philosophers and scientists operated.

First, schools, recruitment, and teacher–pupil relations. Talk of schools in Chinese and Greek philosophy and science conceals, or at least does not reveal, important differences. The prime duty of members of a Chinese *Jia* was the preservation and transmission of a received body of texts. In that context, pupils did not criticise teachers, and any given *Jia* did not see it as a primary task to take on and defeat other *Jia* in argument. Criticism of others, and innovation, both occur, to be sure, but in a very different framework from that in which many Greek σοφοί worked, where their αἰγέσεις often fed off one another, where debate was one of the chief ways in which individuals, and groups, made a name for themselves (even among doctors), where dissent from what other members of your own group believed, even those who had taught you, was not ruled out and indeed quite common.

My second point expands on the question of whom the writers concerned were trying to persuade and what they hoped to achieve by their persuasion, where significant diachronic differences come into play. Even before the Qin unification, rulers had been the target of much Chinese persuasion, and, after that unification, the ambitions of emperors and some of their intellectual advisers eventually meshed. Crucially there was no disagreement as to the political ideal, and a clear sense that rulers could and did implement ideas put to them by intellectuals, for instance in the context of the workings of the Astronomical Bureau.

On the Greek side, not only were political ideals disputed, but the prime target of persuasion was less often the ruler. It could be the general public, or your own colleagues, rivals or potential adherents. Though many Greek intellectuals admired Rome, the unification of much of the Mediterranean world under Roman domination did not have the effect of getting Greek intellectuals to rally behind Rome: they never rallied, exactly, behind anything. This was not because they were particularly bloody-minded, but rather because competitiveness was built into the institutional set-up within which they operated. The suggestion would be that Greek adversariality owes

much to the internal dynamics of the relations within and between their philosophical and scientific sects.

Adversariality and appeals to authority can be and often were, in both China and Greece, matters of etiquette and form. Etiquette, as is well known, can *mask* agreements as well as disagreements, just as well as it can be manipulated to *express* them, or more interestingly still be deployed to leave them – the agreements and disagreements – ambiguous. Reading ancient texts, we encounter the full range of such possibilities, and one of the chief challenges to interpretation is to analyse their varying exploitation. At the same time, beyond matters of politeness, there are institutional factors at work, in both societies, that underpin the conventions and establish or confirm them as the conventions they are. If I have been able to do no more, here, than sketch some of those factors, I hope nevertheless to have suggested a possible agenda for future study.⁷¹

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NOTES

1. I have insisted on this pluralism in a paper entitled ‘Methodological issues in the comparison between East and West’ to be published by *Pedilavium*. Not only are there important differences between each main domain of inquiry, for example, mathematics, astronomy, medicine, and between each period, in both China and Greece, but one must also recognise the diversity of what passes as ‘mathematics’ ‘astronomy’ and so on, in each society.

2. Such a view influences the analyses offered by H. Nakamura, *The ways of thinking of Eastern peoples* (1960). The idea of a radical contrast, on this score, between the West and China goes back at least as far as Voltaire, whose *Au Roi de la Chine* dates from 1771.

3. Cf. Lloyd, ‘Methodological issues’ (n. 1).

4. Those conventionally categorised as ‘philosophers’ before Plato are, in any event, unlikely to have considered themselves as *all engaged in the same one inquiry*. σοφός (‘wise man’) and σοφιστής (‘Sophist’) were, and remained, terms with fluctuating and indeterminate reference: cf. G. E. R. Lloyd, *The revolutions of wisdom* (1987) 83–102.

5. Heraclitus, fr. 40, 42, 56, 57, 106.

6. Two such points relate to the choice of the Boundless, rather than any determinate substance such as Thales’ Water, as principle (see Aristotle, *Physics* 204b24–9) and to the answer to the question of why the earth is at rest (Aristotle, *On the heavens* 294a28–b1, 295b10–16).

7. Where Anaximander fr. 1 had described the relations between certain cosmic factors as governed by order (they pay the penalty, δίκην, to one another for their injustice, ἀδικία), Heraclitus fr. 80 insisted that ‘justice’, δίκην, is ‘strife’, ἔρις.

8. With Empedocles fr. 17.26, for instance, compare Parmenides fr. 8.50ff. But Empedocles agrees with Parmenides, as does Anaxagoras, that nothing comes to be from not-being. With Parmenides fr. 8.6ff., compare Empedocles fr. 8 and Anaxagoras fr. 17.

9. As W. Jaeger, *Aristotle: fundamentals of the history of his development* (1948) made much of, Aristotle sometimes includes himself among those holding the Platonist views he criticises, as for instance he does in the first book of the *Metaphysics* 990b8–9, 22–4.

10. Thus *On regimen in acute diseases* sets out to describe matters of great importance that are not understood by doctors (ch. 3, II 238.8–244.6 Littré), and *On regimen* refers repeatedly to the discoveries the author has made, which ‘none of my predecessors attempted to understand’ (III ch. 69, *CMG* I 2.4, 200.28–30). For further examples, see Lloyd, *Revolutions* (n. 4) ch. 2, 57–70.

11. The evidence is set out and discussed in G. E. R. Lloyd, *Methods and problems in Greek science* (1991) ch. 17, 400–2.

12. See S. Cuomo, ‘Tradition and innovation in Pappus of Alexandria’, Ph.D. dissertation, Cambridge, 1994.

13. This is discussed in Lloyd, *Revolutions* (n. 4) ch. 2, 101–8. As P. Manuli, ‘Lo stile del commento’, in *Formes de pensée dans la collection hippocratique*, edd. F. Lasserre and P. Mudry (1983) 471–80, stressed, it is important not to underestimate the extent to which, in Greece, the commentary may be used as a vehicle for the expression of original ideas. In China, a similar point holds also, for example, of Liu Hui’s commentaries on the mathematical classic, the *Nine chapters of the mathematical art*.

14. Lloyd, *Methods* (n. 11) ch. 17, 416.

15. On the various strata, their composition and dates, in the *Zhuangzi* compilation, see A. C. Graham, *Chuang-tzu: the Seven Inner Chapters* (1981) and *Disputers of the Tao* (1989) 172–4, 306–11.

16. *Zhuangzi* 33, at lines 16–17, 34–5, 42–3, 55 and 63–4 in the Harvard–Yenching edition (1949).

17. The differences between *Ming Jia* and Greek Sophists are well brought out by J.-P. Reding, *Les Fondements philosophiques de la rhétorique chez les sophistes grecs et chez les sophistes chinois* (1985), though he continues to write of Chinese sophists.

18. Sima Qian, *Shi Ji* 130: 3289.

19. Sima Qian, *Shi Ji* 130: 3289.

20. *Hanfeizi* 50: 1080, trans. Graham, *Disputers* (n. 15) 273.

21. *Lü Shi Chunqiu* 15/8, trans. Graham, *Disputers* (n. 15) 214–15, modified.

22. As in ‘Robber Zhi’, *Zhuangzi* 29.

23. *Zhuangzi* 33, at lines 27–31.

24. However, as will be noted below, p. 34, the term for ‘Confucian’ is often used loosely.

25. *Hanfeizi* 50: 1080.

26. As Hui Shi is in *Zhuangzi* 33, at lines 69–87, cf. Graham, *Disputers* (n. 15) 75–82 and 82–95.

27. Mencius 6A/6, and the chapter in *Xunzi* entitled ‘Our nature is bad’, ch. 23, discussed by Graham, *Disputers* (n. 15) at 117 and 244–51.

28. See C. Cullen, *Astronomy and mathematics in ancient China: the Zhou Bi Suan Jing* (forthcoming).
29. See N. Sivin, 'Cosmos and computation in early Chinese mathematical astronomy', *T'oung Pao* 55 (1969) 1–73.
30. See D. B. Wagner, 'Liu Hui and Tsu Keng-chih on the volume of a sphere', *Chinese Science* 3 (1978) 59–79, and 'Doubts concerning the attribution of Liu Hui's commentary on the *Chiu-Chang Suan-Shu*', *Acta Orientalia* 39 (1978) 199–212.
31. Sima Qian, *Shi Ji* 105: 2810–11. On the relations between book learning and practical experience in Chunyu Yi's account of his own training, see N. Sivin, 'Text and experience in classical Chinese medicine', in *Knowledge and the scholarly medical traditions*, ed. D. Bates (forthcoming). The *Canggongzhuan* is also the subject of a forthcoming study by E. Hsu.
32. I have discussed Galen's opportunism in citing previous authorities in favour of his own theories in 'Scholarship, authority and argument in Galen's *Quod animi mores*', in *Le Opere psicologiche di Galeno*, edd. P. Manuli and M. Vegetti (1988) 11–42, and his eagerness to rebut the charge of φιλοτιμία in *Methods* (n. 11) ch. 17, 400 and n. 8.
33. Cf. also the contrast drawn between Platonic philosophy and conventional astronomy by Proclus in the Proem to *Hyp.* 4.15–6.5.
34. There is a similar reference to '100 Jia' in *Sima Qian* 130: 3320.
35. N. Sivin, 'On the word "Taoist" as a source of perplexity. With special reference to the relations of science and religion in traditional China', *History of Religions* 17 (1978) 303–30.
36. See especially M. Nylan and N. Sivin, 'The first Neo-Confucianism: an introduction to Yang Hsiung's "Canon of Supreme Mystery" (T'ai hsuang ching, c. 4 B.C.)', in *Chinese ideas about nature and society*, edd. C. LeBlanc and S. Bladen (1987) 41–99.
37. See Graham, *Disputers* (n. 15) 379–81.
38. See especially Yamada Keiji, 'The Formation of the *Huang-ti nei-ching*', *Acta Asiatica* 36 (1979) 67–89, and D. Keegan, 'The *Huang-ti nei-ching*', Ph.D. dissertation, University of California, Berkeley (1988).
39. A number of instances are discussed in N. Sivin, 'Cosmos' (n. 29), and Huang Yi-Long, 'Court divination and Christianity in the K'ang Hsi era', *Chinese Science* 10 (1991) 1–20 discusses the continuation of this right down to the debates with the Jesuits in the seventeenth century.
40. Sivin, 'Text' (n. 31).
41. N. Sivin, personal communication.
42. Sivin, 'Text' (n. 31) at n. 27, on *Ling Shu* 48.1. Cf. also Keegan, *Huang-ti* (n. 38) 233–8.
43. However, Xunzi criticises many *ru* as worthless. See Graham, *Disputers* (n. 15) 236, who further points out that Xunzi's position is in part a reaction to the challenge of those later classed as 'Legalists'.
44. Sima Qian, *Shi Ji* 105: 2794–6, 2815–16.
45. I am grateful to Professor David McMullen for clarification on this point.

46. See, for example, Mencius 3B/9, *Zhuangzi* 33 at lines 30, 74, 79, 86. Graham, *Disputers* (n. 15) 167, has, however, argued for a positive role for 'argumentation', 辯, *bian*, among the Mohists, but this in the sense related to the cognate, 辨, 'discriminate', applied to distinguishing right from wrong. In the Mohist Canon (A 74) 'argumentation' is defined as 'disputing over the converse. To win in argumentation is to fit the fact.'

47. Aristotle, *Topics* 8, systematises these rules of procedure: see, for example, P. Moraux, 'La joute dialectique d'après le huitième livre des *Topiques*', in *Aristotle on dialectic*, ed. G. E. L. Owen (1968) 277–311.

48. On Coans and Cnidians, see W. D. Smith, 'Galen on Coans versus Cnidians', *Bulletin of the History of Medicine* 47 (1973) 569–85, and I. M. Lonie, 'Cos versus Cnidus and the historians', *History of Science* 16 (1978) 42–75, 77–92. On the Hellenistic medical 'sects', see H. von Staden, 'Hairesis and heresy: the case of the hairesis iatrikai', in *Jewish and Christian self-definition*, vol. III, edd. B. F. Meyer and E. P. Sanders (1982) 76–100, 199–206, and *Herophilus: The art of medicine in Ptolemaic Alexandria* (1989) 22–6, and M. Frede, *Essays in ancient philosophy* (1987) chh. 12–15, cf. Lloyd, *Revolutions* (n. 4) 158–67.

49. For Theophrastus, see Diogenes Laertius 5.36, for Euclid of Megara, D.L. 2.106, for Zeno of Citium, D.L. 7.2 (where Timocrates is reported to have said that Zeno was also taught by Xenocrates for ten years: since Zeno was only about twenty when Xenocrates died, this may be thought unlikely), and for Chrysippus, D.L. 7.179, 183–4.

50. Thus in the Academy, in the first century B.C., there was a bitter dispute between Philo and one of his ex-pupils, Antiochus, in which Philo stood for the view of Plato that had been dominant since Arcesilaus, but Antiochus sought to revive the 'Old Academy'. The reaction of another who had been taught in the Academy, namely Aenesidemus, was to move away to inaugurate his own brand of neo-Pyrrhonian scepticism. The chief primary sources are Cicero's *Academica*, I.13, 43–6, Photius, *Library* 169b18–170b3, discussed by A. A. Long and D. N. Sedley, *The Hellenistic philosophers*, vol. I (1987) 438–49, 468–73.

51. Thus the founder of the so-called Empiricist sect of medicine, in the mid-third century B.C., was Philinus, who had started out as a Herophilean: on the various affiliations of other Herophileans, see von Staden, *Herophilus* (n. 48) 445–71.

52. On the subject of philosophical allegiance, see D. N. Sedley, 'Philosophical allegiance in the Greco-Roman world', in *Philosophia Togata*, edd. M. Griffin and J. Barnes (1989) 97–119.

53. One extra factor that no doubt influenced the headship passing first to Speusippus was that he was Plato's nephew. Xenocrates, however, was no relation of either Plato or Speusippus, nor was it the general rule that the headship of philosophical or medical sects stayed within a family.

54. With D. L. 7.179 on Chrysippus (διηνέχθη), compare D.L. 7.167 on Ariston, Herillus and Dionysius (διενηχθέντες). Dionysius, however, was also called ὁ μεταθήμενος ('the renegade') and Ariston is described as a αἰρετιστής with his own followers. Long and Sedley, *Hellenistic philosophers* (n. 50) 359, go so far as to speak of Ariston's 'heresy', though that English term now has stronger connotations than those of the original Greek αἵρεσις.

55. On the Academy, see above n. 50. As for the Stoa, it is customary to distinguish the so-called Middle Stoics, Panaetius and Posidonius, and Later Stoics, such as Seneca, from the three original heads, Zeno, Cleanthes, Chrysippus and their contemporaries. A note of caution is, however, in order, since for the Middle Stoics, especially, we generally rely on secondary sources, who can certainly not be counted on to be reliable on questions to do with agreements and disagreements between later and earlier members of the school.

56. This is particularly true of the Sceptics in so far as they advocated suspension of judgement by way of an argument from *ἰσοσθένεια* – the notion that for every ‘dogmatic’ view about underlying reality there is an opposing view of equal strength.

57. Although many philosophers, Plato and Aristotle especially, fought hard to distinguish true philosophy from legal and political debate, some, including Aristotle himself, recognised the similarities and what the former might owe to the latter. At *On the heavens* 294b7–13, in the middle of a discussion of his predecessors’ view on why the earth is at rest, Aristotle points out that it is a common habit we all share, to relate an inquiry not to the subject-matter, but to our opponent in argument. Arguing on both sides of a question, *in utramque partem*, was practised extensively in both philosophy and medicine – and its respectability and advisability were much debated: see, for example, Plutarch, *On Stoic self-contradictions* 1035f–1036d.

58. N. Sivin, ‘Yin yang and the five phases’, in G. E. R. Lloyd and N. Sivin, *Tao and Logos*, forthcoming.

59. See Sivin, ‘Cosmos’ (n. 29).

60. See Sivin, ‘Text’ (n. 31) at n. 7.

61. Han Fei’s study concentrates on the psychological aspects of persuasion. No attempt is made to give a formal analysis of the modes of argument as such: there is no equivalent to Aristotle’s survey of the enthymeme and the paradigm, the counterpart in rhetoric, so he claims, to syllogism and induction. See further J. Levi, ‘L’art de la persuasion à l’époque des Royaumes Combattants’, *Extrême-Orient Extrême-Occident* 14 (1992) 49–89, and G. E. R. Lloyd, ‘The agora perspective’, *Extrême-Orient Extrême-Occident* 14 (1992) 185–98.

62. This list could, of course, be much extended. At the same time Greek dedications to those who wielded little or no political power are also common. This would seem to be the case with the person to whom Ptolemy dedicates both the *Syntaxis* and the *Tetrabiblos*, the otherwise unknown Syrus.

63. The recipients of the Ptolemies’ patronage included poets and literary critics among many others, as much as, perhaps even more than, those engaged in one or other branch of the inquiry concerning nature: see P. M. Fraser, *Ptolemaic Alexandria*, 3 vols. (1972). Their motivations were less a matter of seeking to foster science, than of boosting their own prestige, less a matter of sponsoring brilliant scientists, than one of sponsoring brilliance of any type.

64. See, for example, M. T. Griffin, *Seneca: a philosopher in politics* (1976) 202, M. Schofield, *The Stoic idea of the city* (1991) ch. 4. Similarly Dio Chrysostom combines advice to the emperor Trajan with a continued adherence to at least certain aspects of his Cynical philosophical ideals: see P. Desideri, *Dione di Prusa: un intellettuale greco nell’impero romano* (1978) ch. 5.

65. D.L. 2.66, 67, 70, 78.

66. D.L. 6.38.

67. See, for example, W. K. Pritchett and O. Neugebauer, *The calendars of Athens* (1947), B. L. van der Waerden, ‘Greek astronomical calendars and their relation to the Athenian civil calendar’, *JHS* 80 (1960) 168–80, B. D. Meritt, *The Athenian calendar in the fifth century* (1928) and *The Athenian year* (1961).

68. See Philo, *Belopoeica* 50.20–26, cf. E. W. Marsden, *Greek and Roman artillery: technical treatises* (1971) ch. 4.

69. In the classical period the possibility of implementing political proposals on the occasion of the founding of new colonies may have influenced such writings as Plato’s *Laws* (if not also his *Republic*). The actual

founding of Thurii in 443 B.C. is an enterprise in which Protagoras is reported to have been involved. However, to counterbalance this, we should bear in mind that the debate, reported in Aristotle, *Politics* 1, 1253b14–5b15, on whether slavery is ‘natural’ or ‘conventional’, is one that remained at the purely theoretical level, and had no impact nor outcome in terms of the policies recommended or adopted with regard to slaves in Greek antiquity.

70. Outside those fields, too, the insistence on the importance of ‘philosophy’ sometimes reflects a bid to upgrade a particular calling, by representing it both as disinterested (that is, not driven by the profit motive) and as based on a sound theoretical understanding. Both the doctor Galen and the architect-engineer Vitruvius represent the best exponents of their two callings as the philosophically inclined ones. Thus even with domains that certainly do have important practical applications, the orientation towards the theoretical in some Greek and Roman writers is pronounced.

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