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Review of Lloyd, G.E.R. (1996) Adversaries and authorities. Investigations into ancient Greek and Chinese science

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a good impression of what persisted, what emerged, or what changed in Athenian religion in the context of the development of Athenian society at large and of particular events. This might be the reason that some of the reviewers who have already written about P.'s work do not seem to have been reading the same book. Apparently it is hard to understand what his vision on Athenian religion actually is. But then P. removes so much of existing interpretations, while hesitating, understandably, to bring up his own. There is no convenient summing up, and the reader is left with many intelligent essays on many subjects which, however, refuse to combine into a coherent story—but I certainly do not intend to say that the book is otherwise incoherent; it could rather be called single-minded in its systematic pursuit of some sort of factual basis for our pronouncements on ancient religion. It might be the very nature of this book which makes it a work of reference, rather than a monograph. This is a book to keep coming back to, because it is so well documented (it is a pity the OUP decided that a piece of cloth would raise the price too high; the present binding will not stand up to frequent use, which is, however, to be expected). To make it more effective as a work of reference, the subject index might have been somewhat more extensive.

Except for the binding, which I already referred to, this is a book as one expects the OUP to make them. Proof-reading and printing are of a very high standard (I noted only the following: p. 53 lacks a note figure 43; p. 138: Erichonius; it is of course a small disaster that the maps at the front were mixed up, even if it was noticed before the book was distributed). The contents, however, easily beat the book production. This is a book which should be in the bookcase of everyone with a scholarly interest in ancient religion. I am eagerly awaiting the promised second volume.

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G.E.R. LLOYD, *Adversaries and Authorities*. Investigations into ancient Greek and Chinese science (Ideas in context). Cambridge, Cambridge University Press, 1996. xviii, 250 pp. Pr. £ 14,95.

To come straight to the point: the present reviewer is of the opinion that silent admiration is the most fitting reaction to the work in hand. But keeping quiet about it certainly will not induce others to read it, while I think they should. This collection of essays, modestly stated to consist of preliminaries or 'sighting shots', testifies to the superior learning of its author (and of his sinological collaborator Nathan Sivin—

the two work on a book to be entitled *Tao and Logos*) over a remarkably wide field. Of course, a great many details of both the Greek and Chinese scientific tradition are debatable, but Ll. does not cut corners and meticulously points out where the areas of dissension are located. Of course, the main thesis which Ll. develops is debatable too, but Ll. is the first to point out its limitations. As to methodology, this book—and this seems to me as laudable as its other qualities—is shot through with illuminating remarks about what the author is aiming at and how he thinks such goals can be and should be reached. This will not be surprising to those who are acquainted with previous work by Ll., such as his *Demystifying mentalities* of 1990. Ll. expresses as his conviction that methodology should be made explicit (p. 9). I think there are many instances where it should be, and a comparative study such as the one in hand certainly is such an instance. Nobody can reasonably find fault with that.

Ll. ranges far and wide: his book offers a very heterogeneous collection. But this is not to be confused with incoherent; all apparently disparate essays contribute to the central issue. Ll. seeks to understand what ‘science’ meant at a certain stage (in this instance, the 500 years between 300 BC and 200 AD, the pre-Christian and pre-Buddhist eras) in two different societies, Greece and China. To this end, Ll. analyses what the ancient investigators themselves thought they were trying to do, and establishes what they actually did. Ll. goes beyond the usual comparison of the answers that were being formulated, and looks above all at the questions that were being asked and at the process of answering. What were those questions, why were they being asked, what were the criteria formulated for a proper answer? Under what conditions did this all happen? Who did what in what company and in what context? To solve such problems one has to study both the internal modes of conduct and the external values, ideologies and statuses, and the interaction between the two, i.e. one has to relate ‘science’ to its background. This implies a widening of the comparative exercise: one has to compare both background and science.

As Ll. puts it, he is “far from content with remaining within the conventional boundaries of a Hellenist’s agenda” (p. x). I can only applaud that since 1987 he has been breaking through those boundaries, for I am firmly convinced of the value, nay, the necessity, of comparative work. Everything can be compared with everything, but China is an obvious candidate for comparison with the Graeco-Roman world. It is a contemporary, but independently developing complex society which is very well documented. Of course these facts have not been overlooked, and *Altertumswissenschaftler* have paid lip-service to the idea of comparing the Greek and Chinese worlds. Ll., however, has drawn the

consequences: *ad fontes*. There is no easy way round; one will have to truly understand everything one is comparing.

In dealing with the comparison between Greece and China, one has to fight all sort of assumptions that will all too readily distort the whole exercise, such as the assumption that the Greeks (or the Chinese) were the ones who asked 'the right questions', or that Greek preoccupations provided the necessary conditions for the development of modern science. We should certainly avoid the tallying of strengths and weaknesses, superiority or inferiority, priority and posteriority. We want to gain understanding of two societies and two ways of 'doing science', not look at things in some teleological perspective in order to explain Western 'success' or Chinese 'failure'. Thus, 'science' for Ll. is merely shorthand for a number of investigations taking place in the 500 years under scrutiny. He concentrates on astronomy, mathematics and medicine, and again these are to be understood as mere labels for whatever shape the Greek and Chinese study of the heavens, of geometry and numbers and of the human body took. This might and might not have anything to do with what nowadays would be called astronomy and so on.

Ll. warns against crude, naive ways of comparing Greece and China which conclude that actually everything, however different it may look, is similar, or that everything, however identical it may look, is actually dissimilar. He rejects generalisations such as the explanation of differences by referring to mentality. If something like that exists at all, this still begs the question, and it is the mentalities which have to be explained. Or what he calls piece-meal approaches, where a single concept is taken in order to find the equivalent elsewhere ('what is *dao* in Greece/Greek?'). This assumes that everyone was actually addressing the same questions; that concepts necessarily have a counterpart; or, in a worst case scenario, that *our* concepts have counterparts in past thinking. Ll. shuns a priori reasoning about (the lack of) universality, and sets out to contextualize.

I will quickly summarize the eight chapters which follow the first introductory one. Chapter 2 deals with adversariality and the appeal to authority. Traditionally, Greek science is seen as agonistic, Chinese science as irenic. This idea is first brought low by strong qualification, next resurrected as *grosso modo* correct. Chapter 3 deals with the presentation of methodology and epistemology in argument. Did scientists refer explicitly to the methods and theories of knowledge which they applied in their investigations? The outcome is that Greeks did so more often, being concerned with foundation and certainty. Chapter 4 deals with techniques of persuasion. Chinese rhetoric used dilemmatic and analogical arguments put to pragmatic ends; in Greece rhetoric got

involved with formal logic, and persuasion was joined by demonstration. Chapter 5 deals with ideas concerning causation. Traditionally the Greeks are supposed to have thought in terms of cause and effect, while the Chinese did so in terms of correlation. Again this is considerably nuanced, but *grosso modo* upheld. Chapter 6 deals with dichotomies or polarities. These are either thought to be universal, or the Greeks are thought to have favoured opposition, and the Chinese reciprocity or complementarity. Ll. comes down on the side of opposition versus reciprocity, or independence versus interdependence. Chapter 7 deals with the notions of the finite and infinite. Older, simplistic views of both the Greek and the Chinese situation are much qualified. It is not so much that Greek and Chinese thought on the matter is radically divergent, as that Greeks are divided on the issue and willing to go on debating it, while the Chinese are working towards an orthodoxy. Chapter 8 deals with astronomy. Here the main difference between Greece and China again appears to be the Greek preoccupation with demonstration, involving geometrical models, as opposed to the Chinese stress on accuracy in prediction and also interest in the unexpected. Another case of validation versus pragmatism. Chapter 9 deals with medicine, especially dissection, and with the ideas that link the macrocosm with the microcosm of the body and the microcosm of the state. Once again we meet with a Greek striving for certainty which goes with a huge divergence of opinion, as opposed to the relative consensus of Chinese scholars.

With the above summary, I am wronging Ll. in a grievous way. The usual pattern in each of his essays is first a demonstration of the dangers of generalizing—‘Chinese’ or ‘Greek’ science does not exist, nor does ‘Greek’ medicine, and not even Hippocratic medicine is of one piece, and so on. Consequently, simplistic conclusions are out. Secondly, we are shown the diversity within every tradition. Thirdly, things are carefully weighed, and this almost always shows that overall differences between the one and the other tradition are undeniable too. Fourthly, these differences are tentatively related to why certain questions were being asked, and how certain patterns of thought functioned within a particular context. This is all done with Ll.’s customary care which I have only very inadequately captured with my references to qualification. But then, when we start generalizing again—the dangers of which Ll. has only just demonstrated, but of course it is more sensible to generalize with an awareness of those dangers than without it—, we come back to some time-honoured differences between Greek and Chinese thought, only this time contextualized and removed from teleological concerns.

In his tenth and last chapter Ll. himself returns to the questions asked

in the first chapter. He concludes that science developed differently in Greece and China, and that even where there are similarities, on further inspection these turn out to be 'similarities with a difference' (p. 210). As opposed to China, Greece is preoccupied with axiomatisation, certainty and foundations. If this is so, why? This Ll. answers very, very tentatively. Whatever one says about an issue as big and as complicated as this, is bound to be controversial. But Ll. adds so many caveats and formulates so carefully that controversy gets but little chance. Also, I do not find his analysis very radical. On the one hand there is Greek adversariality, the notion of radical revisability and a certain demand for objectivity, which are to be explained at least in part from the particular Greek political and social condition where no single individual or institution could claim permanent authority. Scientists were no power-holders nor usually closely bound to those who were. On the other hand there is Chinese deference to authority, and consensual tendencies, to be explained from the particular Chinese political and social condition where a single wise ruler, or at least the concept of such a ruler, was considered a given. Scientists were clients of power-holders or officials in the imperial bureaucracy. All in all, I find the demolishing of generalizations in the main body of the book, and the explicit methodology at every turn more inspiring than this slightly limp conclusion, whatever its validity may be. Things would of course get much more interesting if the diversity and dynamics of scholarship and of socio-political life could be correlated.

Adversaries and Authorities has been very decently published by Cambridge University Press in its excellent Ideas in Context series. I saw hardly any misprints—except for p. 48 where the reference to p. 00 should read 32, and one in the Library of Congress cataloguing in publication data, which I hope has not been propagating. Most commendable is the inclusion of the Chinese characters for names and key concepts (in text, glossary and bibliography), which much increases the value of this publication to sinologists. Romanized Chinese is strictly pinyin: if one is not used to this, it might take some effort to recognize Ssu-ma Ch'ien, Chuang Chou and Hsün-tzu in Sima Qian, Zhuang Zhou and Xunzi (in a somewhat odd contrast, all Greek names are latinized). But this book is worth a lot of effort.