
Ancient Worlds, Modern Reflections: Philosophical Perspectives on Greek and Chinese Science and Culture by G. E. R. Lloyd

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In Ancient Worlds, Modern Reflections, G. E. R. Lloyd makes an often persuasive case for the relevance and use of comparative studies of ancient cultures in relation to two areas of contemporary concern. This concern is of two sorts—there are philosophical questions bearing on science and its history, and questions about the relevance of reconstructions of ancient thought to such modern social and political issues as higher education, human ‘rights’, internationalism, and democracy. At 179 pages (excluding the bibliography), this is a large project for a comparatively small volume. However, it is also a work written from a vantage point attained through a career’s worth of inquiry into such problems in the context of antiquity, especially ancient Greece, and subsequently through comparative analysis of the history of science in ancient Greece and China. This has been the dominant project of the last two decades in Lloyd’s research and writings, through *Demystifying Mentalities* [1990], *Adversaries and Authorities* [1996], *The Ambitions of Curiosity* [2002], and *The Way and the Word* [2002] (written with the Sinologist and historian of science Nathan Sivin). Of these, *Adversaries and Authorities* and *The Way and the Word* are the most similar to Lloyd’s earlier and extremely influential works on ancient ‘scientific’ cultures and problems, notably *Magic, Reason and Experience* [1979], *Science, Folklore and Ideology* [1983], and *The Revolutions of Wisdom* [1987]. These were sustained pieces of often thematic analysis, characterized by being carefully contextualized and substantiated by a broad range

¹ A paperback edition has now appeared.

² In the interest of full disclosure, I should say that G. E. R. Lloyd was the supervisor of my Ph.D. thesis.

of detailed empirical evidence—in *Revolutions of Wisdom* in particular, the footnotes are not infrequently the larger part of the page. Although concentrating primarily on the classical world, they often used comparative evidence from anthropology and located Greek inquiries more generally among other societies of antiquity, such as Egypt and Mesopotamia.

A concern with comparative evidence has moved increasingly to the foreground of Lloyd's work, and this in turn has highlighted certain philosophical questions and methodological problems. *Demystifying Mentalities* offered a sharp attack, using Greek and Chinese evidence, on the claim first given wide influence by Levy-Bruhl in 1922 that certain culturally distinctive beliefs are incomprehensible to outsiders because they were produced by different 'mentalities', a failure of explanation that Lloyd thoroughly demolished. That critique is briefly recapitulated here, along with a brief survey of alternative approaches as outlined by such figures as Kuhn, Feysband, Quine, and Davidson [2–4, 6–8]. Such compressed versions of arguments made elsewhere at greater length and with more grounding and context, and of summary versions of complicated questions, is a feature of this work. Lloyd touches on controversies in such diverse fields as anthropology, linguistics, pragmatics, semantics, neuroscience, and botany. The existence of cognitive modules and the validity of alternatives to formal logics flash by in a paragraph and a short list of major thinkers. Although this work is a development of long-standing themes from Lloyd's previous studies, it is also one that addresses the current state of play in an interrelated set of disciplines about no less a topic than the nature of the world and our understanding of it. It should probably be read in conjunction with its entire bibliography for a more thorough understanding of its own contents.

The weakness of such breadth is that it risks brevity and simplification. It is probably an inevitable weakness, given that Lloyd's purpose is to present a comprehensive and closely interrelated set of arguments. Most of the time he succeeds in presenting enough of the material to support his case, especially if the reader is familiar with the more detailed studies of earlier works. Of course, that in itself carries a risk in that the (brief) reuse of certain subjects means some seem very familiar: most people acquainted with Lloyd's work will recognize such themes as the link between the individualistic and competitive nature of intellectual Greek discourse and the legal and

democratic frameworks of Greek political discourse, or the comparison of these characteristics in Greek star-gazing with the focused and more conservative tendencies of state-run Chinese astronomy.

However, the book under review, if standing on the shoulders of prominent predecessors, is also explicitly different in that it tackles not only philosophical questions ‘in a more fundamental and head-on manner’ [vii] than previously, but also matters of contemporary politics and ethics. The former at least is foreshadowed by *Ambitions*, but that was still a matter of investigating the kinds of inquiry found in ancient China and Greece. Here, Lloyd brings the weight of his accumulated expertise and experience to bear on inquiry and understanding in general, with the ancient world as his evidential resource. In addition, he argues not only that the methodology of comparison, but also that the content of ancient thought, has much to offer in the modern world.

The first nine chapters, the greater part of the book, investigate the philosophical sort of concerns through the analysis of Greek and Chinese ‘science’, their differences, and their points of contact. Lloyd inquires, in the first chapter, whether any culture not our own can be understood at all, whether by contemporary anthropologists or historians of antiquity. In the second, he asks whether there is such a thing as ‘science’ in the ancient world; in the third, whether, and if so, how the terms of the historical investigation map onto those of ancient cultures; and in the fourth, whether logic is universally valid, a problem similar to that of chapter 7, which asks whether different cultures have a common ontology, and also to that of chapter 5, on whether different cultures have the same concept of truth. Chapters 6, 8, and 9 examine more closely such cultural patterns of reasoning as the questionability of belief, the classification of concepts, and the use of examples as evidence.

The chief and underlying problem throughout is the choice between two irreconcilable theoretical perspectives about the possibility of cross-cultural understanding. The correspondence theory of truth has as its outcome a common ontology and logic, and thus the potential for recognizably shared methods and classificatory systems. Alternatively, the many worlds that result from a coherence theory of truth, each self-sufficient to the culture thereof, lead to incommensurable relativism. As methodologies, both relativism and universal-

ism are sometimes useful but neither is perfect: we should learn from both of them that adopting one single rule for cross-cultural study is not sensible.

As so often, a dichotomous expression of theory in terms of exclusive extremes produces the argument that both are wrong, and that the proper approach is somewhere in between. Yet Lloyd makes a convincing case that there is more to his *via media* than the rhetorical attractiveness of compromise.

Lloyd's criticism of the first approach is a matter of showing how historical complexity defeats any single cross-cultural answer to questions of definition, whether of logic, proof, or of what constitutes astronomy. Such universals do not apply, either between different cultures or indeed within them. There is, for instance, no such thing as a single set of criteria for what constitutes astronomy. The assumption that Eudoxus' astronomy is Ptolemy's, or that either is directly equivalent to *tianwen*, the Chinese study of star patterns [27], simplifies each to the point of misunderstanding. Moreover, the fact that many such theories about the stars do not meet modern notions of astronomy, for instance in their inclusion of what we would call astrology or theology, does not mean that ancient societies had no such thing as astronomy. The reason why modern science draws a distinction here and many ancient inquiries did not is not some regrettable ancient failure to achieve a modern understanding, but stems from different aims and different social and intellectual expectations. More generally, no ancient culture practiced 'science' in the sense of the modern scientific ideal—not that Lloyd thinks this ideal is an actuality in the modern world either—nor does it set out to be any such thing. We should employ the kind of historical methodology outlined on page 22: a focus on specific inquiries, as much as possible in their own terms and contexts, which resist as far as possible the formulation of queries and answers in anachronistic terms. The historical focus helps us avoid problems introduced by the principle of charity of interpretation, that is, the assumption that any message is intelligible. Lloyd points out that some formulations, beliefs, or practices are instead set up to be obscure, or can be understood in more than one way, even though the reasons for such unintelligibility may themselves be understandable. For such elements of a particular culture to be understood, the historical framework must be part of the message [6–8]. This kind of nuanced analysis of specific texts and

authors, read closely and placed in the context of social, economic, and political structures and dynamics, has always been one of Lloyd's greatest strengths and provides here much of the continuity with his earlier works. Concentration on the specifics of what is under historical investigation foregrounds the diversity of thought in any culture or period, while the range of specifics studied and the deliberately comparative style of analysis of them reveals what the points of contact between individuals and inquiries are as well as, hopefully, why they are as they are. Used carefully—and this is a point I shall return to later on—this approach can enable the identification of broader tendencies and patterns within any one group, time period, or civilization, and perhaps even between cultures, though *provisos* are always necessary and over-simplification is a constant threat.

However, focusing on inquiries in their own terms evidently presupposes that those terms can be understood to a useful extent. Lloyd argues strongly that although there are no cross-cultural universals, there is also no case for strong incommensurability. He points out more than once [3, 40] that there are no empirical reasons to accept such a level of incomprehension. No case has ever been found where there were absolutely no points of contact between concepts or languages, however inexact and susceptible to misunderstanding such endeavors undoubtedly are. Here Lloyd is surely right that it has never been shown that failure to comprehend is inevitable and wholesale. The notion that language can radically constrain conceptual understanding put forward by Benjamin Whorf among others is now rather out of favor in contemporary linguistics, while Robert Wardy's *Aristotle in China* [2000] attacks its survival in relation to Western *vis-à-vis* Chinese thought. After all, it is often difficult to ensure in ordinary conversation between speakers of one's own language that exactly the same thing is meant [cf. Wardy 2000, 17], but this is not taken to make communication between individuals impossible. Most statements in any language do not meet the univocal, universal idea of formal logic [cf. Lloyd 2002, 117]. Lloyd uses the term 'semantic stretch', as he did in *Ambitions* [2002, 123], to express how the absence of completely commensurable terms and translations does not equate to incomprehension.

Instead, Lloyd argues that there is a continuum between categories and concepts of different cultures which renders comparison between them valid, as long as attention is paid to the individual-

ity of each as well. To revisit astronomy from this perspective, we can say that however the aims, methods, and sometimes results of studies involving the stars vary, as noted above, such studies do have phenomena in common, e.g., eclipses. This is part of the more general point that such phenomena are what different cultures have in common, so long as they are only ‘defined in general terms’ [37]. Lloyd also argues that cultures have certain aims in common, such as understanding or predicting, regardless of what phenomena or categories they apply these to. Such broad aims can also be identified in relation to specific disciplines, as when Lloyd remarks that the common aim of various forms of ‘medicine’ is ‘well-being’ [30], though elsewhere the ends of various studies are described as ‘analogous ambitions’ [23] rather than as broad or universal aims. Persuasiveness, I suspect, would also be a common aim of certain forms of discourse, though not always directed at the same audience or produced by the same methods.

One could complain that such aims are so general as not to be very useful, and indeed Lloyd’s own definition of ‘science’ appears narrower. His remarks on ‘the bland generalizations concerning necessary conditions [for science]’ [22] reveal that he thinks of ‘this type of inquiry’ as ‘sustained investigations’ susceptible to recording in literate form. Thus, for Lloyd, ‘science’ even in the ancient world necessarily involves such things as economic surplus and consequent social specialization [33]. By the way, this might supply an argument for why the analysis of long-ago cultures is as valuable as modern-day anthropological studies, even with the immense difficulties of accessing the past through its fragmentary remains. Societies like ancient Greece and China were in size, organization, and materials more like our own than many contemporary societies, making it easier for us to narrow down crucial differences.

Lloyd’s critique of relativism *vs* universalism in cross-cultural analysis as an overdrawn dichotomy is matched by his insistent rejection of absolutes more generally. Definitive answers and simple, single truths, he says (rather definitively) do not occur in the history and philosophy of science any more than they do in science itself, not least because no practitioner of these disciplines can achieve some uninformed state of observation or description entirely free of theory. Yet if all observations are theory-laden, some are more theory-laden than others. ‘The claim that all observations are theory-laden admits

of degrees, but of no exceptions' [189: cf. 62, 82 ff.]. And although truth is not a simple or single thing, various kinds of truth provide viable criteria for the validation of a claim, although what that validation consists in is more relativistically defined. Recognizing the incomplete universality of any one definition of truth allows us to comprehend how appeals to 'truth' work in different contexts and different cultures, and to avoid limiting truth to the special cases of syllogistic logic and its use everywhere else to error and incomprehension. As Lloyd has often pointed out, authors and practitioners in any culture in which some kind of appeal to validating notions are implicitly or explicitly expressed can be evaluated in these terms without anachronism, and indeed as part of analyzing their impact and strategy in the general cultural context. Kinds of truth, he argues, allow the relativists to be partly right: reality, as perceived by different 'styles of enquiry' [e.g., 77] constrained by 'different leading preoccupations' [87] is multidimensional. The difference between Lloyd and the relativists is that for him those are not separate realities which never touch, but depend upon perspective in a shared world. There are 'points of contact between what there is for the perspectives to be perspectives of' [91]. The elimination of perspective, or theory-ladenness, is not possible, but different approaches can affect and perhaps improve each other. This is, I think, Lloyd's central argument: comparative analysis is a way of shifting perspective to gain perspective. The relevance of other ways of doing things, whether historical or contemporary, is not to measure them against us or us against them, but as other attempts to find out what can be found out, and thus to clarify and nuance our own endeavors and values.

This suggestion takes us to Lloyd's second major theme, the relevance of studies of ancient cultures not just to the history and philosophy of science but to crucial social, political, and ethical problems in the modern world. In the last three essays, he considers higher education, human 'rights' and 'nature', and democratic institutions and internationalism from the perspectives offered by the past. Each discussion follows a similar pattern of argument. Relevant thought and institutions in ancient China and Greece are briefly described. Lloyd then offers a critique of the state of play today, and finally he argues that the first are relevant to the second.

Although the problems we face today seem, at first sight, so different from those of the ancient world, we can use our historical analysis to gain a useful perspective on them. [164]

Moreover, not just perspective but sometimes actual content and values from antiquity can be usefully employed in contemporary society.

Thus, in chapter 10, he describes intellectual discourse in Greece and China and the subsequent history of Chinese and western medieval education. He argues that there are advantages and disadvantages to both the individualistic and changeable free-for-all of Greek culture and the more persistent but less independent tendencies of Chinese education. For Lloyd, these past approaches offer both warnings and suggestions for modern universities; and, perhaps more importantly, the study of different approaches is itself a model for what he thinks education should do. The key to this is to learn about both the natural world and the human world in a way that enables the student to make connections and draw comparisons between different subjects, cultures, and languages, and how each contributes to 'universal knowledge' [152]. (This should not be mistaken for current US-style undergraduate education, which Lloyd regards, with some justification, as often fragmented and superficial.)

In the place of either academic or vocational specialization with a view to producing professionals, Lloyd's program is generalist, multidisciplinary, and intended to encourage innovation, rather than the production of students in the mould of the previous generation's experts [148]. (Of course, the education Lloyd advocates would tend to produce people very like Geoffrey Lloyd, in approach if not necessarily in content.) In the ideal system, learning is valued for its own sake, as it was in Greek antiquity; and it produces innovative generalists with both the knowledge and, implicitly, the value system to act as informed and innovative critics of themselves, their subjects, and society more generally. It is a fiercely felt and rather inspiring program, but short on details on the practical side, not least because Lloyd views this level of education as something that should be accessible to all as a 'basic human value' [152]. 'This will no doubt be criticized as excessively idealistic' [153: cf. 191], he remarks accurately. In addition to funding problems, the mere thought of the curriculum committees involved is enough to turn one pale, and the amount of language acquisition or of translated materials required

would be a major problem. Specialization would have to be postponed to further degrees or qualifications. Nonetheless, whatever the practicalities of application—and such an approach could perhaps be applied to a smaller extent, without any politically unlikely radical restructuring—this is an important contribution to the debate on what a university education is meant to do and how it can best do it.

After the relatively narrow focus on higher education, the last two chapters have an increasingly broad remit. Lloyd turns first to a discussion of Chinese and Greek—the latter mainly Aristotelian—concepts of what it is to be human, what this means for ethics, and how to organize society. The morals drawn from the past are the Greek principle of equality and the importance attached by the Chinese to mutual obligations. Lloyd prefers a combination of these to the notion of human rights, which he sees as a modern Western cultural bias, since universal and inalienable human rights is not a concept that can be found in either of the ancient societies. Problems that we might formulate in such terms were instead conceived of as questions about law and justice: ‘much modern talk of rights might have seemed to the ancients to be aggressive individualism.’ Instead, ‘focusing on fairness, equity, responsibility provides a wider basis for approaching the problems than does the discourse of rights’ [165]. In the absence of inalienable rights, Lloyd also finds in antiquity useful responses to moral relativism, citing Aristotle’s contention that a denial of absolute moral principles does not amount to a denial that principles may be applied as general rules, that action is always particular, and that character and reasoning are interdependent. This last argument gains cross-cultural support from Chinese philosophers such as Mencius and Xunci.

Lloyd’s use of the past to inform the present works in three ways. Firstly, it gives us perspective and encourages self-criticism. For example, comparing our views on what constitutes a human and how humans should live with the views of ancient China and Greece reveals that ‘what was presented as an ideal for human kind often reflect just the interests of the group advocating it. . . [or] mirror political experience more generally’ [164]. Our discourse of human rights is no exception. Secondly, any attempt to work out universal human values should be as broadly based as possible, either grounded in cross-cultural concepts identifiable in history or combining different ones.

Hence Lloyd's appear to fairness. Thirdly, there are concepts and values which we can specifically select as useful from the ancient world.

Finally, Lloyd's last critique and call to arms addresses Greek and Chinese political institutions and activity, characterizing the former as a unstable, varied, subject to questioning, and noting again their explicit articulation of the equality of citizens, albeit a rather narrowly defined equality. Greek politics is contrasted with the Chinese ideal of a benevolent ruler with loyal ministers and watchful intellectuals, who had a duty to curb authority's excesses if necessary, even at risk to themselves. These are relevant to modern political difficulties identified by Lloyd, difficulties which include the relationship between science and government, the excessive power of commercial interests, the responsibility of the public to understand science and of scientists to explain themselves to the public, the apparently irreconcilable ethical stands taken on issues like abortion, a lack of effective international decision making, the social breakdown in the western world as a result of wealth inequality, voter apathy and other inadequacies of representative democracy, worldwide economic inequality, and reckless environmental degradation. This is also his gloomiest chapter. Although Lloyd thinks solutions or at least improvements are possible, he suspects—no doubt rightly—that they stand little chance of being put into practice. We will probably rush to catastrophe, but 'even catastrophe does not necessarily teach good sense' [186].

The ancient world, Lloyd again argues, offers us alternatives good and bad. Classical Greek democracy, for example, should be studied as both a positive and a negative model. The Chinese bring to Lloyd's table interdependence, solidarity, consensus and responsible behavior by the powerful. In both societies, intellectuals [171–172] contributed heavily to the construction of these political ideals; and for Lloyd their modern equivalents, academics, have an equal responsibility to think hard and to speak out about matters of concern to all of society. Here Lloyd is certainly practicing what he preaches.

One may of course criticize aspects of either Lloyd's analysis of modern life or his arguments as to what 'good sense' suggests in response. I share a good deal of his cultural background, and, I suspect from reading this, his political and religious opinions too: yet I differed on several points. Many US Republicans, for instance,

would have a much stronger reaction. But this is not the place to start arguing over every issue, but to consider his general approach.

The second section is in general a stimulating and sometimes provocative set of arguments, but the relevance of the ancient world to the modern seems more strained than earlier. As with the book as a whole, but more noticeably with these final sections, much is inevitably highly compressed. In particular, there is less room than previously for the nuances of history, though several miniature sketches give a vivid overview of certain issues. To some extent this is an advantage, as it enables a clear sense of the scope that comparative history and its associated issues can encompass without getting bogged down in the details, but it also means that some crucial arguments are not unpacked to the degree that the work they are doing in Lloyd's argument requires. For example, 'we should do well to reflect on how responsible individuals [in China] bore witness to their conception of what served the welfare of all under heaven' through the ideal of a benevolent ruler and a mutually responsible society. Yet the ideal was often not actuality. How are we to put ideals derived from the ancient world into practice in the modern?

The project of using historical ideas and values in contemporary political and ethical argument needs to be handled with care. That an acquaintance with other values, societies, and habits of thought encourages critical thought and may occasionally inspire seems reasonable. The use of particular examples from the past is, I think, most successful in the domain of actual argument, as in Lloyd's use of Aristotle's work on ethical judgment, involving as it does a careful and thorough understanding of what precisely Aristotle meant. Too often, although not by Lloyd, historical comparison is done by cherry-picking superficially similar analogues. In the run-up to the Iraq invasion, various commentators in the media offered a bewildering number of historical parallels in support of their views both for and against the war, including Vietnam, Korea, the British in Iraq in the 1920s, the Crusades, Alexander's campaigns, and even the Trojan War. Similarly, we select as relevant certain values from the broad church of history according to our own social and individual 'leading preoccupations'. Therefore, the usefulness of historical 'lessons' [192] requires as detailed a comparison and as thorough an understanding as possible of the original circumstances and concepts. This level of detailed analysis is not something Lloyd can provide in the scope of

what he is attempting here: which is to give a sense of the possibilities involved in historical understanding and careful comparison.

Ancient Worlds, Modern Reflections is a wide-ranging, stimulating and latterly provocative work. Arguing that history is more complex than philosophy tends to allow [cf. 190], it makes a persuasive case for the possibility of a *via media* between analytical dichotomies. Continuities and points of contact allow the historian of thought to move in and between distinctive cultural realities, avoiding what in another context Richard Dawkins has called the ‘tyranny of the discontinuous mind’. Genuine generalist expertise allows a manifold understanding, if not a single answer. The chapters concerning the possible lessons of the past are more personal and problematic, but Lloyd’s principal point on modern concerns cannot be doubted: ‘We need to muster all the resources for criticism and analysis that we can, including those from reflections on the past’ [191].

In reviewing this book, I have several times felt that being a Hellenist historian of science, with a working knowledge of some areas of modern science, was not quite adequate to the range of issues and arguments and evidence under discussion. My knowledge of Chinese scientific texts and culture, in particular, is both limited and mediated through authors like Lloyd, Sivin, and Wardy, while my knowledge of Chinese political history approaches nil. The reader is directed towards Sinologists for a critique of Lloyd in those areas. It is perhaps both a tribute to Lloyd and an expression of just how difficult true general expertise is, that more than one reviewer is really needed for this book. However, Lloyd, I suspect, would say that difficulties in acquiring knowledge both deep and broad is no excuse for not trying: this is his attempt to show the benefits of so doing.

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