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Introduction

Western philosophy and science are jointly responsible for constructing some amazingly powerful tools of investigation, aimed at discovering the truth, delivering explanations, verifying conjectures, showing that inferences are sound and proving results conclusively.[1] We use the scientific method and logic to achieve all that, and further back those two depend not just on the precision and accuracy of measurements and the replicability of results, but also on the clarity of definition, the avoidance of ambiguity and above all the univocity of terms. If those criteria are not met, the enterprise aborts.

These ideas and practices as we know them today happen to have been developed first, in most cases, in Europe, though adumbrations of several of them are to be found elsewhere. But how should we evaluate our European legacy? Most people throughout the world, and not just Westerners, probably assume straightforwardly that those tools represent an unqualified success, for have they not been responsible for most of the progress humans have ever made, both in understanding and in improving material welfare, not least in the matter of our health and ability to combat disease?

But doubts and criticisms have also been and continue to be expressed. One group of dissenters resents the hegemonic tones in which the West

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[1] Thus in a recent article de Jong and Betti (2010) argue that the essentials of the Aristotelian concept of science, in particular the notions of definition, axiomatics, demonstration and method as set out in the *Posterior Analytics*, have been a dominant influence from Aristotle's day to ours. They instance not just ancient authors such as Proclus, but also most of the denizens of seventeenth-century science, Descartes, Newton, Pascal, Spinoza, Leibniz, the Port Royal logicians (cf. the next note), and on to Wolff, Kant, Bolzano and even Frege. They cite Dijksterhuis (1986: 464–5) in support, and also Randall's claim (1961: 63, echoing Whitehead on Plato) that 'the whole great literature on method that fills the scientific writings of the seventeenth century is at bottom a series of footnotes to the *Organon* of Aristotle'. There are obvious exaggerations and oversimplifications in this thesis, notably because it downplays the objections to Aristotelianism that were regularly expressed by the likes of Bacon, Hume and many others. But few would deny the importance of that influence, and the puzzle then becomes to identify the reasons for its persistence, only partially to be accounted for by the way in which, from Aquinas on especially, Christian theology exploited Aristotelian ideas to bolster its claims to demonstrate the truth.

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implicitly or explicitly claims superior rationality, intelligence, know-how, although that resentment does not of itself further the evaluation of the key ideas and methods. Some dismiss the claims for better understanding as a mirage, with the relativist's argument that everyone's notion of understanding is dependent on subjective or at least society-specific norms. Even claims to increase material prosperity are sometimes countered by pointing to the harm and destruction that have followed in the wake of technological advance, from weapons of mass destruction to global warming.

However, the debate to date pays less attention than it might to pressing the analysis of what I have called those tools of investigation. As a historian I am aware of some of the contingent circumstances in which certain crucial ideas were developed, often starting in ancient Greece. As a comparativist I can use other cultures to trace trajectories of intellectual development and ambition that differ from those we are used to in the West. The studies that I have gathered together in this book contain some philosophical reflections on the multiple tracks that human endeavours to achieve both understanding and the control of the environment have followed. These investigations are then 'analogical', in the broad sense in which I shall use that term, in two ways: first in the sense that they are comparative, probing the similarities and differences between what I have called those trajectories, but, secondly, in a further sense in that it turns out that the use of analogies, models, images and similarities (even though often viewed with suspicion) is all-pervasive. The object of the exercise is to test both the strengths and the weaknesses of common assumptions about what is held up as the right, indeed often the only viable, track.

There are several fundamental questions we have to tackle first, to do with language itself, with how we express our thoughts and how, and within what limits, we can understand others. We encounter obvious problems when we try to translate from one natural language to another – where we typically search for some equivalent, comparable or analogous form of words to convey what is said in another language – but we can raise problems also about the level of comprehension achievable even when all those engaged in the communicative exchange share the same natural language. The problem of reference takes us to the question of what there is to be referred to. The indeterminacy or inscrutability of reference (Quine) has often been discussed in relation, in the first instance, to individual speech acts. But it is recognised that the issue raises a fundamental problem to do with an inevitable feature of all language use, namely the use of general terms. It was all very well for Plato, in the *Phaedrus* (265e), to suggest that what he called collection and division should carve nature at the joints.

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But are there such joints to carve, and what is the nature they belong to? In this instance indeed we can cross-reference to another culture that also raised the question of the relation between Names and Objects, namely ancient China, though we shall see that the focus of interest there was very different. When names are said to have to tally with objects, that is chiefly a matter of ensuring that social distinctions are maintained, an issue of social order, not just one of linguistic accuracy.

The notion that science and philosophy both, in their different ways, deal with a single determinate external reality is one of the foundational tenets of modernity. It too has its history which brings to light many competing interpretations of what that reality consists in and how access to it is to be had. To reject any such claims in the name of a radical cultural relativity seems a counsel of despair. How then can we find a way through the apparent impasse with which we are faced? Again a judicious use of history, philosophy, cognitive science, comparative studies and social anthropology can be brought to bear to suggest tentative resolutions of a sort.

Many of the leading questions implicate the notion of analogy and related ideas (similarity, models, images), whether as a movement of thought that we use to describe and explain phenomena, or as a characteristic that those phenomena are assumed to manifest. The structures of genera and species that form the subject-matter of inquiry in many disciplines presuppose ordered relations of similarity and difference, and similarity itself may be considered the genus within which analogy falls, though that may be to impose a questionable orderliness on the similarities of types of similarity itself. More basically still, the general terms that any natural language supplies imply that the species and particulars that come under them exhibit similarities that justify their being grouped together.

In my first book, *Polarity and Analogy* (Lloyd 1966), I considered those two as modes of argumentation in early Greek thought, using that term ‘modes of argumentation’ to cover both explicit argument schemas and overarching theories, totalising ones offering cosmological accounts as well as more specific explanations of particular phenomena. Analogies apprehend or postulate similarities or connections, often suggesting inferences and extensions of the similarities apprehended. ‘Polarities’ was the term I used for modes of reasoning that focus on pairs of opposites (of different kinds) and again use those oppositions as the basis of schemas of argumentation, as when two opposites are held to present mutually exclusive and exhaustive alternatives, and one proceeds from the rejection of one to the confirmation of the other. I brought to bear some comparative material

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from social anthropology and my limited study of other ancient societies, China included, but my chief target was ancient Greece itself. I would now say that a similar investigation, of the various manifestations of comparing and contrasting, and of the presuppositions made concerning what is there to be compared and contrasted, can and should be mounted in relation to human reasoning of every period and in every culture. I cannot of course do justice to the global problems in all their complexity. But I aim to say enough to make a start in the due evaluation of those tools of investigation that I have identified. Analogy is indispensable, but it must be combined with critical assessment, though not in the expectation that unique solutions can be demonstrated conclusively. That is far less often the case than Western rationality has tended to assume. We shall see.

As I have already implied, grouping items together and sorting them into separate contrasting bundles are inherent features of all language use. A hostile critic of that first book of mine used just that point to suggest that my whole endeavour was futile (Hamlyn 1968). What was my problem and what was the pay-off from my discussion when – according to this critic – there was no way in which Greek thought could fail to make use of analogies and polarities? If I had chosen to reply (which I did not), the first thing I would have said would have been that the particular analogies and polarities the ancient Greeks focused on, and how they used them, are significant. Some of them are distinctive to Greece and the prominent ones that were favoured tell us much about the ontological and even ethical presuppositions that their authors entertained, as well as about the scientific theories they wanted to put forward. Extending the point across cultures and periods, we can see that we can examine salient similarities and contrasts to explore such presuppositions more generally and to ponder the differences that such an examination reveals. We do not necessarily expect extensive cross-cultural universals in ethics. That has always been contentious. But not to find them in ontology challenges the robustness of some assumptions about the external reality we confront. Again I shall be exploring which assumptions about reality in general and its intelligibility can be said to be well grounded.

Secondly, the amount of self-conscious analysis that the Greeks themselves engaged in is in certain respects exceptional. If they used analogies and polarities repeatedly, both in particular explanations and theories and in general cosmological ones, they were, some of them at least, critical of their use. Their analyses of the weaknesses of these modes of thought prompted some of them to propose alternative, stricter, ideals of reasoning, which was where some of our Western preoccupations originated.

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Persuasions were not good enough: demonstrations were needed. Metaphor was suspect: literality and univocity were demanded. However, reference to another society that also engaged in criticisms of misleading analogies and the like shows that the reaction that some ancient Greeks had was not the only possible one. Some prominent ancient Chinese thinkers also expressed their reservations about deceptive similarities, but without proposing the radical solutions that were favoured by Plato and Aristotle, echoes of which then reverberated down the centuries in European thought, with one writer after another demanding not just the likely, but the certain.[2]

But to those two points I would now add a third, namely that the very feature that my critic pointed to as obvious – the inevitable inherent use of similarities and contrasts in language – itself raises problems concerning the consequences that such a feature has for the limits of human understanding and mutual intelligibility. Of course we are not limited to the generalisations suggested by the genera and species already picked out in whatever natural language we use. We can expose some terms as ambiguous or confused and we can coin others to capture the groupings we need to encapsulate new knowledge. But how is any one view about what is there to be sorted, and about how to do the sorting, to be validated against others? That is one of the key topics to be investigated in the studies that follow, and to suggest a possible way ahead, I shall rely on two concepts, on the one hand the notion of the multidimensionality of reality, and on the other that of the semantic stretch of the terms we use to capture it. I shall elaborate in due course, but for now may note first that recognising that reality is multidimensional allows for a plurality of accounts, each dealing with a different aspect or dimension of the subject-matter, thereby bypassing the usual dilemma that insists on a choice between 'realism' and 'relativism'. As for 'semantic stretch', this is proposed as an alternative to the literal/metaphorical dichotomy, where it offers, I would claim, two

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[2] To mention just a single example, in the Port Royal logic (1996 [1683]: 239f.) Arnauld and Nicole set out three general rules which they find in the first place in geometry, namely not to leave any ambiguity in terms, basing reasoning only on clear and evident principles, and proving demonstratively all the conclusions put forward. They went on to gloss the first rule in an even stronger form: 'Leave no term even slightly obscure or equivocal without defining it.' It is striking that when the authors turn to 'what we know by faith' (260), they claim that this other kind of knowledge is 'often no less certain, nor less evident in its own way', namely knowledge derived from authority. So the mysteries of faith, such as the Trinity, the Incarnation and the Eucharist, so far from being an affront to human reason, just demonstrate its limitations and inability to understand the infinite extent of God's power. They quote Augustine on how what is new, strange and contrary to the course of nature may be a sign of its 'greatness, marvellousness, divinity', and so be 'more true, certain and enduring' (261). On the other side, the attempts, from the late 1950s on, by Perelman and others (e.g. Perelman and Olbrechts-Tyteca 1969) to redress the balance and restore the place of rhetoric in argumentation have been only partially successful.

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advantages: first in that it represents the differences as a matter of degree as opposed to exclusive alternatives, and secondly in that it allows the possibility that every term may have some stretch, even, at the limit, those deemed to be univocal. That is not to say (as some have argued) that there is a metaphorical element in the use of every term, nor to collapse the literal into the metaphorical by treating the former as a null class. Rather it is to overhaul the terms in which the issue is formulated and to reject the alternatives, *either* literal *or* metaphorical, *either* strict *or* derived.

My first study starts with the problem of translation across languages, which as I have already remarked is just one aspect of the much larger questions of mutual intelligibility and of the possibilities of understanding in any context. The issue takes on a particular urgency in the light of recent anthropological debate: just how far is it possible to overcome the barriers to mutual understanding set up not just by different natural languages, but by radically different experiences of being in the world? When faced, as often, by such fundamental differences, how can we begin to grasp and interpret what is going on? If we use our existing conceptual framework will that not lead to distortion? But how can we fail to use that framework? The question turns on the extent and the nature of possible revisions to our initial assumptions.

My second chapter turns to comparatism: that is, not just the first-order activity of doing some comparing, but the second-order study of how comparisons in general are used, their functions and their multiple valences. Here too the problem of understanding the radical Other takes centre stage: here too the question is how to avoid turning the activity of comparing into a distorting exercise in reductionism. How can we make the most of what comparison can teach us?

Chapter 3 begins by taking a particular subject-area, namely ethics, and particular analogies proposed by two groups of thinkers in ancient China and Greece, to examine the tension between the recurrent appeal to images, models and the like, and the recognition of their inconclusiveness. Did the thinkers in question see this as an inevitable flaw in all ethical reasoning, or aim to devise ways of circumventing their shortcomings? What should we conclude about the strengths and weaknesses of analogical argumentation, not just in ethics, but in any field of investigation? On the one hand, the hazards of such argumentation are often obvious. On the other, we can question whether the remedies that have been proposed do not suffer from as many disadvantages as what they purport to replace.

That takes me, in turn, in Chapter 4, the core of the whole book, to study analogy as heuristic and to review the relations between images and argument more generally. Again I shall use the rich materials from ancient

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Greece and China to examine these questions, but will add data from other ancient and modern societies, where a preoccupation, even an obsession, with resemblances, signs, signatures has often been diagnosed as a principal source of error.[3]

The justification for this focus on Greece and China here and elsewhere is two-fold. On the one hand, Aristotle was responsible for some of the radical ideas that went to create that European legacy I have spoken of, and we can examine the context and the circumstances in which he introduced them. On the other, we can test hypotheses concerning the general viability of his analyses against another culture that shared some of the preoccupations of the ancient Greeks but reacted to them very differently.

Of course we have to be aware of the limitations of our methods. We cannot experiment on the ancient Greeks and Chinese, nor plot the psychological and cognitive developments of particular individuals. We cannot match those kinds of studies which form the core of much modern developmental psychology and ethology (e.g. Gelman and Byrnes 1991, Carey 2009). But even taking just two ancient societies we can throw light on problems in cognition that continue to occupy researchers not just in cognitive science, but also in anthropology and philosophy. In the background lie the twin issues of the commonalities, and the specific variations, in human reasoning and argument.[4]

While each of those four chapters focuses on the knowing subject, Chapter 5 considers the issues from the side of the target subject-matter that

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[3] Mill (1875 [1843]: book v, ch. 3, para. 8) identified as 'the most deeply-rooted perhaps' of all fallacies that 'the conditions of a phenomenon must, or at least probably will, resemble the phenomenon itself'. To illustrate this he cited (somewhat inaccurately) the version of the Doctrine of Signatures in Paris (1875: 47 [not 43–5]). This put it that 'every natural substance which possesses any medicinal virtues, indicates, by an obvious and well-marked external character the disease for which it is a remedy, or the object for which it should be employed'. But he went on to give examples of the fallacy from Bacon, Erasmus, Darwin, Leibniz and Descartes (in that order). Yet although Mill rejected Aristotelian complete induction, he proposed what he called the Methods of Agreement and of Difference as the two primary means of securing invariable laws of nature (book III, ch. 8). The first proceeds by comparing together different instances in which the phenomenon occurs, the second by comparing instances in which the phenomenon does occur with instances in other respects similar in which it does not. I shall be returning to these issues in Chapter 4.

[4] Despite their common concern with aspects of human reasoning, the methods and goals of the historian and the developmental psychologist are, of course, quite distinct. The historian does not undertake controlled experiments to assess the development of cognitive skills in children and even in infants (assuming their attention span gives access to their notions of the normal and the unexpected). While cognitive scientists can aim to discover patterns of development that are valid cross-culturally (even though in practice their subjects are generally drawn from groups who are far from typical of human populations as a whole, see Henrich, Heine and Norenzayan 2010), the historian has to pay attention to the divergences in the practices of reasoning and in the explicit evaluations of such as between different groups as also between different individuals within them. Their modes of reasoning will reflect specific features of how they see the problems, their ambitions to achieve understanding and their notion of what it will take to convince others of their point of view.

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is there to be known. The West, as already noted, has generally entertained robust notions on that subject. Natural science studies nature and the underlying assumption is that nature is universal, while human cultures differ. But as recent ontologically oriented anthropologists, such as both Descola and Viveiros de Castro, have insisted, that pair of presuppositions is itself far from universal. At the opposite end of the spectrum of possibilities, the assumption of a mononaturalism combined with multiculturalism is replaced by monoculturalism (what is shared by all living beings, and not just humans, is some culture) with multinaturalism: what distinguishes different living beings is precisely their natures, their physicalities, their bodies.

This evidently poses perhaps the biggest challenge that usual Western ontologies face. The fundamental problem is easily stated. Has the idea of a single reality there to be investigated to be abandoned? How can it be? While much of this debate hinges on the often contested interpretation of anthropological fieldwork, on which of course I can only comment as an outsider, again it seems possible to offer some clarification of the issues from my perspective as a comparativist historian and philosopher. While the anthropologist Descola identifies as just one possible ontological regime what he labels ‘analogism’, how does that relate to, is it even possible to reconcile it with, the findings of my previous chapters concerning analogies as a mode of thought?

Starting from the logical point that the apprehension of similarities and differences is fundamental to any attempt to classify phenomena or to make sense of experience, we must recognise that analogies are present in every ontology. So the question is not can we do without analogies (we cannot) but rather how to evaluate those we explicitly propose or implicitly rely on, how to sift those that are fit for purpose from those that are liable to mislead. But fit for whom, we have to ask, and for what purpose – questions that immediately implicate values, our own and other people’s. There is evidently no neutral way of judging these, but that does not mean we have to, or should, or even can, simply avoid judgement altogether. Analogies are always fallible, but if their deceptiveness must put us on our guard, their potentiality to open up new perspectives offers us the best means of learning how to be self-critical.

A final chapter returns to the set of problems I identified at the outset of this introduction and takes stock of the main theses I have proposed. Wherein lie the true strengths and weaknesses of the Western legacy? Which notions turn out to need to be overhauled or used only with considerable reservations and qualifications? Which have proved their enduring worth?

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What have very different traditions to teach us? Certainly they are a valuable resource to examine critically aspects of our normal assumptions that we usually take for granted. But where does that leave us on the crucial question of how to go about achieving greater understanding, of one another and of the world we inhabit? Without attempting to propose any sovereign remedies for the dilemmas we face, I hope to achieve some clarification of both types of issue, where again analogies in particular may serve not just as a warning but also as a guide.

While many critics have warned against the dichotomising tendencies that have been so prevalent in Western thought, I here offer specific objections with regard to realism and relativism, nature and culture, and the literal and the metaphorical in particular. That is the negative aspect of my discussion. Positively, by contrast, my chief recommendation, over and above my advocacy of the multidimensionality of reality and the semantic stretch of terms, is to make the most of comparisons, images, analogies, recognising that they may mislead, but sensitive also to the important insights they may give access to, not least when our comparisons lead us deep into the interpretation of radically different cosmologies and solutions to how we should live our lives. If we learn to understand our dependence on analogies, images and the like, and to appreciate how inappropriate quests for certainty may be, we may have a better chance to understand others, and indeed ourselves, as well as to learn from them how to expand our own intellectual and imaginative horizons. By understanding analogy better, the hope is that we shall be able to understand ourselves and one another more sympathetically.

In each case, the ideas I develop here were originally formulated as contributions to workshops and symposia, in Cambridge, London, Paris, Berlin, Berne and Madrid, or to special numbers of periodicals (*Journal of Cognition and Culture, HAU*), and in several instances those ideas pick up and develop points from my earlier publications. The fact that certain guiding threads, centring largely on the topic of analogy, linked those contributions, prompted me to attempt this synthesis. Finally I must remark that the end product has benefited greatly first from my audiences and commentators when I have tried out my ideas in provisional form in the circumstances I have just mentioned, and then from four helpful anonymous readers for Cambridge University Press. None of these is likely to agree with all my claims, but each of them contributed to the outcome by making me clarify my arguments.

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CHAPTER 1

On the very possibility of mutual intelligibility

My opening study poses the basic issue that any attempt at cross-cultural exploration faces, namely how, and how far, mutual understanding is possible, an issue of some urgency when we encounter what at first sight appear to be radically counter-intuitive beliefs. I shall begin by offering some reminders of the difficulties that even those who speak the same natural language encounter, before turning to the far more severe problems raised both by the ethnographic data and by ancient history. In the former case I shall propose some preliminary comments on recent anthropological debate, especially with regard to Descola's ontological schemata and Viveiros de Castro's perspectivism. In the latter my examination of the explicit arguments for which we have evidence especially, though not exclusively, from ancient Greece, will prompt me to suggest where we need to be wary of several of our own basic presuppositions. These concern the concept of nature, for example, and the view that if we do not adhere to a realist account we are thereby committed to a form of relativism that precludes mutual intelligibility. My controversial suggestion, where nature is concerned, is that it is itself a cultural artefact. On the second question, I argue that we can avoid that fateful dichotomy (realism/relativism) by factoring in the multidimensionality of reality. The upshot is not, of course, some way of guaranteeing success in understanding, but to remove some of the obstacles felt to stand in its way and to see some of the difficulties that undeniably remain as challenges to us to improve our understanding rather than as evidence that this cannot be done. The relevance of this to my study of analogies is, of course, that mutual intelligibility is necessary if comparison is to be possible.

Like the ethnographer, the student of ancient societies is faced with a recurrent problem of translation, and in one important respect suffers from an obvious considerable disadvantage. Modern ethnographers can question members of the groups they study to get some reaction on the question of whether or how well they have understood them, though the quality of