

human'. (The anglophone equation of 'science' with 'physical science' is a troublesome hurdle here.)

A closely argued chapter on 'Values and knowledge' (including six deadly pages on Dawkins's 'selfish gene' concept) denies that the historical approach provides a mandate for moral relativism. Historical knowledge is a necessary condition for any sustainable morality at all, Smith argues. In making his case he effectively rehearses the 'fact'-versus-'value' fallacy, showing that without some guiding values physical science becomes impossible or meaningless. His conclusion is unequivocal: 'We have reached a decisive rational argument for historical knowledge: it is a condition of knowing what we mean by statements' (p. 224). Here, historical, 'narrativist' and linguistic perspectives fuse. Different forms of knowledge serve different purposes; historical knowledge rightly serves vital, moral, purposes. Hence Smith's reservations about the 'evolutionary story':

[if] the evolutionary story by itself is supposed to tell us what human nature really is, it fails, because the story is so abstract and detaches itself from the historical story about what has made the particulars of what people are ... we value a person, including ourselves, by placing her or him within a significant story ... about that person's life and surroundings, not by identifying the person as an evolved animal undifferentiated from others who share the same remote ancestors. (pp. 241–2)

Even the sympathetic reader might nevertheless wonder whether an evolutionary story is in order if we ask not 'what is human nature?' but 'how did historically self-creating humans originate?' It would misunderstand Smith to see him ruling out such questioning. His aim here is to engineer a powerful integration of diverse insights which recent decades of critical enquiry have yielded alongside many of his own. Necessarily, only its barest outlines have been sketched.

Having long shared Smith's general orientation, I am, in an odd way, relieved to discover one, fairly substantial, point on which we differ. While accepting that reflexivity alone cannot differentiate the human from the physical sciences, I believe that there is an important sense in which psychology at least is more tightly reflexive than other disciplines; for in psychology, there is no third term in the equation, no topic of inquiry other than the inquiring subject itself. Of course psychology has deployed countless conceptual and methodological manoeuvres to render aspects of this subject 'other', and thus amenable to 'natural-scientific' research methods. But these all eventually transpire to be detours, not escape routes, notwithstanding some interesting discoveries along the way. The concept of 'reflexivity' badly needs critical attention, current usages failing adequately to differentiate its numerous forms. The human sciences may then still manifest their own unique modes of reflexivity.

This is not an obviously sensational book. Those unfamiliar with its author's work and standing might easily underestimate it. It is serious and important, achieving its aims by scholarly diligence and close reasoning. Although one cannot predict the book's own historical importance, it could well emerge in time as the classic text in which the various strands of late twentieth-century Western critical thought were finally, coherently, woven together – a very major achievement indeed.

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G. E. R. LLOYD, *Cognitive Variations: Reflections on the Unity and Diversity of the Human Mind*. Oxford: Clarendon Press, 2007. Pp. viii + 201. ISBN 978-0-19-921461-7. £27.50 (hardback). 2009. ISBN 978-0-19-956625-9. £14.99 (paperback).
doi:10.1017/S0007087409990215

The issue of Geoffrey Lloyd's book in paperback is an opportunity to note a precisely argued and extremely rich, stimulating and helpful book. Its topic is fundamental to the history and

epistemology of scientific knowledge, most obviously with regard to the human subject but also in relation to the physical world. Is there a common human mentality – single basic forms to such activities as spatial cognition, the expression of the emotions and reasoning itself – which leads to a shared understanding of the world? Or is human variation in mental activity so great that there are radically different forms of understanding? Developmental and comparative psychologists, ethnographers, linguists, historians and others have done a great deal of research, much of it very recently, and this work displays a confusing mix of empirical argument and axiomatic presumption. Lloyd's project is to take the cross-disciplinary stance necessary to bring the relevant different areas of work into constructive relation, while rejecting global judgement about which side is right and which wrong. 'I shall argue that the weight to be given to different factors varies across these issues and accordingly that what we conclude on the controversy between unity and diversity, or between the universalists and the cultural relativists more generally, should vary too' (p. 3). The outcome is a brilliantly clear and succinct guide for the perplexed and a pointer to further inquiry – 'a clarification of what exactly is at stake in each of the complex issues in question' (p. 3). The book's forte is to capture briefly the richness of the particular, whether in scientific claims, cultural belief or historical knowledge, and to put conceptual analysis to work in discussing the particular rather than turning it into abstract argument in its own right.

The complexity of what is at stake is crucial. It is simply impossible for one discipline to provide all the necessary evidence, and it is extremely difficult (perhaps impossible) to devise methodologies with which to investigate what is universal and what is not without building in one presumption or another. The most obvious difficulty concerns language, since it is precisely the relativist position to deny the possibility of ultimate adjudication in one language. 'What vocabulary, other than one that already presupposes our own assumptions, is available to arrive at some comprehension of the variety of ideas that we encounter?' (p. 108). Lloyd has at least three very important things to say about complexity. The first, and most obvious, is firmly to require cross-disciplinary work. Moreover, in this book he demonstrates, as very few people are in a position to do, what that actually involves. Not only is Lloyd reading the biological, psychological and ethnographic literatures, he is in the remarkable position of being able to draw in, as he does in the latter part of each of his chapters, comparative knowledge of ancient Greek and Chinese cultures. Secondly, Lloyd stresses what he calls the 'multidimensionality' of phenomena (like perception, or schemes of biological classification and notions of the self): we are dealing with topics about which it is objectively necessary to tell complex stories – there is 'a multidimensionality in what it is to be a jaguar' (p. 147). If we ask whether there is a basic common perception of colour (as claimed in a very influential study by B. Berlin and P. Kay in 1969), it is first necessary to recognize that 'colour' has modes of hue, luminosity and saturation and that naming colour may depend on any or all of these. Before asserting that there are basic emotions (which, and how many?), we need to ask whether emotions are distinct or grade into each other, how applicable the English language is for the study of emotions, whether 'emotion' is even a useful category for psychology, and so on. Thirdly, he stresses that even supposed single cultures tell complex stories – that achievements in understanding the world vary with time and place even within what we may think of as relatively confined social dimensions. Biology, language and culture do not determine, though of course they shape, forms of understanding: human thought shows remarkable 'plasticity'.

There are six chapters which in turn consider whether there are universal forms of colour perception, spatial cognition, animal and plant taxonomy and the emotions, and universal notions of health and well-being, and of the self, agency and causation. There has, of course, in recent decades been quite a swing, underwritten by evolutionary biology, towards belief in shared human structures in these areas. Lloyd is not at all disposed to question the objective stance of biology, but he nevertheless finds a number of reasons, in particular domains, to question

unqualified universal claims. Two slightly different chapters then follow. The first raises the large matter as to whether the notions of 'nature' and 'culture' are themselves universal, and he interestingly concludes that the latter may be but the former certainly is not:

The evidence seems to me to tell against there being any innate apprehension of the domain of nature as such. The acquisition of some notion of culture or society, on the other hand, would appear to be the inevitable result of any process of social incorporation, and so, on that score, universal. (p. 149)

In this area in particular, however, it is necessary, as Lloyd stresses, to distinguish between words and concepts. Lastly, he tackles reason itself. 'What sense, if any, does it make to say that different human beings reason differently?' (p. 7). Here, the multidimensionality of the question is most obvious, though belief that there is or could be a single form of right reasoning, or for that matter a single thing called intelligence, shows remarkable persistence.

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FRANCESCA BRAY, VERA DOROFEEVA-LICHTMANN and GEORGES MÉTAILIÉ (eds.), **Graphics and Text in the Production of Technical Knowledge in China**. Leiden and Boston, MA: Brill, 2007. Pp. xiii + 772. ISBN 978-90-04-16063-7. \$149.00, \$199.00 (hardback).
doi:10.1017/S0007087409990227

The major contribution of this pioneering collection is that it describes the many social settings surrounding the ongoing uses and deployment of charts, plans and drawings, or *tu*, in premodern and modern China. Two principal aspects of *tu* come into focus: the ritual, symbolic and representational uses, which highlight the internal historical shifts in their significance; and the external relations between the *tu* and political power, the role of an emerging medium and artisans for inscribing *tu*, the immense impact of woodblock printing and illustration in China long before Gutenberg, and the modernist consequences of later encounters with the West. The eighteen essays successfully reframe the question of how technical knowledge and images using *tu*, when juxtaposed with written texts, jointly influenced the production of technical knowledge. Indeed, it now appears that the presence of *tu* signalled the emergence of a technical field in imperial China.

It is impossible in a short review to do justice to all of the individual contributions. These are organized into three parts. The opening essays in Part One focus on *tu* as forms of symbolic mediation and as magico-religious symbols, with the later essays describing the role of *tu* as textual diagrams. Part Two is concerned with the role of technical illustrations in picturing reality and in showing how the juxtaposition of text and image depended on the rise of print culture. The essays in Part Three address Western influences on the evolution of *tu* in the nineteenth and twentieth centuries. All the authors agree that the shared characteristics of *tu*, *hua* (picture or painting) and *xiang* (image or icon) encoded technical knowledge as 'templates for action' in a 'visual culture' with its own 'epistemological categories'. But one area of disagreement does emerge, reflecting our contemporary historiographical predicament. For over fifty years, following Joseph Needham, scholars have tried to explain why modern science, technology and medicine arrived so late in China. In this volume, for example, Peter Golas interrogates technical drawings to explain why China did not develop a self-consciously structured discipline of technical drawing, as in Europe. Others, as Francesca Bray's lengthy introduction notes, are not interested in why China did not follow the path of the West. Bray suggests that we may be better off asking how far China succeeded in achieving its own goals.

As this disagreement is of general interest, it is worth dwelling on here. Golas concludes that technical drawing never became a specialized skill or critical discipline in China, which he considers an impediment to future technological creativity. Nevertheless, he rejects Craig Clunas's