Explaining consciousness: the hard problem edited by J Shear; MIT Press, Cambridge, MA, 1997, 422 pages, $45.00 (UK £33.50) ISBN 0 262 19 388 4

In some respects in reading this book I was reminded of the debate surrounding the publication of John Searle’s paper entitled “Minds, brains and programs”. Was I going to emerge from this process with a feeling of achieving some kind of ‘enlightenment’, or was I going to be left in some kind of frustrating void?

In 1994 David Chalmers presented a keynote paper to the “Towards a scientific basis for consciousness” conference in Tucson, Arizona. This paper and responses to it were initially presented as a special issue of The Journal of Consciousness Studies. This volume is a replication of this debate, with Chalmers’s response to this response incorporated in it. In his keynote paper, Chalmers outlines what he calls the ‘hard problem’ of consciousness as opposed to the ‘easy problems’. It seems that the hard problem is quite simply the problem of subjective experience. We can address the so-called easy problems, of explaining basic cognitive functions, both structurally and functionally, but how those things give rise to our subjective experience is where the problem, if indeed there is a problem, lies.

The responses to Chalmers’s definitions of easy and hard problems of consciousness are grouped into six categories: Deflationary Perspectives, The Explanatory Gap, Physics, Neuroscience and Cognitive Science, Rethinking Nature, and finally First-person Perspectives. Shear points out in his introduction, quite rightly, that many of the papers would have fitted very well in more than one single group. All the key theorists and researchers are represented.

Essentially there are two global perspectives on solving the hard problem: Those that think it is unsolvable, and those that think we have the means to provide explanations and even solutions. The book is organised in such a way that the first two categories find themselves arguing that the hard problem is unsolvable, whereas the following four argue that there is a possible solution. Deflationary Perspectives argue that we are not in a position to even address the hard problem with our current understanding of brain function. Patricia Churchland enforces this view very clearly in her contribution, entitled “The hornswoggle problem”. She quite rightly points out “Given that neuroscience is very much in its early stages, it is actually not a very interesting fact that someone or other cannot imagine a certain kind of explanation of some brain phenomenon”. The Explanatory Gap corner argue that the hard problem is in fact much harder than even Chalmers has imagined—essentially the problem of understanding how subjective experience could ever be explained is unresolvable.

Following on from those unsure that a solution is possible are those arguing that the hard problem can be solved. From the Physics collection, the arguments centre around a belief that a possible solution to the problem will emerge through adopting quantum physics as a framework for explaining consciousness. Clarke discusses the non-locality of mind, and the use of quantum logic to explain that mind is not located in space at all. Neuroscience and Cognitive Science provide a diverse collection of papers, attempting to explain the relationship between consciousness and brain structure and function. Crick and Koch in their paper entitled “Why neuroscience may be able to explain consciousness” suggest that the solution to the problem lies in investigating possible neural correlates of consciousness.

Rethinking Nature rejects the notion that consciousness can be looked at in relation to mind alone. Rosenberg suggests that we address consciousness on a wider platform, taking into account the structure and character of nature in relation to a purely physicalist perspective that dominates our interpretations of consciousness.

Finally, First-person Perspectives: The argument here is that we need to redefine the theoretical framework in which we pursue the notion of explaining consciousness. Clark argues, by taking a functional perspective, that the hard problem is all about discovering precisely which neural functions underlie subjective experience. To do this, through a scientific approach, we need to reduce the gap between consciousness and the physical world. This will be achieved through
the development of a new scientific framework, possibly based on perspectives from eastern cultures. In the final chapter, aptly named “Moving forward on the problem of consciousness”, Chalmers responds, in turn, to this collection of papers.

There is, arguably, nothing new here. If you are looking for answers or even consensus of definition you are going to be disappointed. It is very easy to enter this debate with a clear agenda, and from a well planned and researched theoretical position, and end up emerging completely confused and in theoretical turmoil. It is possible that the multidisciplinary nature of the theory presented may be quite confusing to the novice. Sometimes it is hard to follow the arguments, when you are continually having to adjust your theoretical framework. However, perhaps one of the most important things about this book is that it exists at all. It was not so long ago that it would have been impossible to address the issue of consciousness in such a respectable way. It would have been even harder to imagine that such a diverse collection of academics from so many disciplines would be bringing together their thoughts in an attempt to explain or clarify the issues surrounding the nature of consciousness.

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_ Unsolved mysteries of the mind: Tutorial essays in cognition _ edited by V Bruce; Psychology Press, Hove, Sussex, 1995, 272 pages, £35.00 cloth, £14.95 paper (US $39.95, $31.50) ISBN 0 86377 392 3, 0 86377 383 1

This book consists of a series of independent chapters, each by a different author, reviewing diverse areas of psychology. The chapters are intended to provide a basis for discussion for undergraduate tutorials and seminars, and cover visual illusions, imagery and reality monitoring, control of mental processes, consciousness, the role of emotions, and whether animals think. The aim of this book is, as its title suggests, to emphasise what we do not know about these areas in addition to the more usual discussion and review of research within each area. It is hoped that these discussions will encourage undergraduates to move away from their usual role of learning about what psychologists already know about the mind towards thinking about aspects of psychology for which there is currently little understanding. Unfortunately, I am not convinced that this book will achieve these admirable aims.

First, since the chapters are not linked, either in terms of research areas or in terms of presenting common theoretical or methodological themes across chapters, it is unlikely that more than two or three chapters would be used in all but the most extensive and broad-ranging series of tutorials. There appears to be no underlying rationale for the choice of areas covered. An eclectic mix of research makes for an interesting and varied read, but means that the book could not directly support a lecture-based course. I doubt that many students are willing to buy a book solely to support a small number of tutorials or seminars. At £14.95 for a fairly slim paperback, it is close to the price of a course textbook.

Second, although the chapters are supposed to discuss unsolved mysteries of the mind, there are a limited number of things to say about something which is genuinely a mystery. Instead, for the most part, the authors have turned to the more standard review of the literature and integration of related research areas, and have, with more or less success, combined this with some discussion of gaps and inconsistencies in our current knowledge. I felt that the title of the book is therefore misleading, since the book is primarily a review of a variety of fairly specific topics within the broad area of cognitive psychology.

The “unsolved mysteries” vary from questions about consciousness, in which research has only recently started to converge to enable more coherent accounts to be proposed, through to areas such as visual perception and imagery, which have been researched extensively, and for which there is now a broad consensus about most of the basic results. For the latter areas, the unsolved mysteries involve more tightly defined and specific issues. Nevertheless, as Vicki Bruce notes in her introductory chapter, to understand a mystery does not simply involve an empirical understanding of the manner in which different factors influence behaviour. For example, Weber’s law can be applied successfully in many situations, but the law does not provide an explanation of those situations. If we wish to use this ambitious sense of ‘solving’ mysteries of the mind,
then we must acknowledge that we are as yet far from having full explanations of any of the
capacities of the mind. The book itself covers a large range in the ‘scale’ of the mysteries of
the mind discussed, from relatively circumscribed cases such as the Münsterberg illusion and the
Poggendorff effect to much less precisely described mysteries such as why we possess emotions
and consciousness. Hence the level of theoretical discussion varies from chapter to chapter, and
the insights into the mysteries discussed range from well-specified insights based upon previous,
detailed research (in the case of visual illusions) to more informal speculation.

Moving on to the individual chapters, I enjoyed the discussion of the control of mental
processes by Stephen Monsell. This provides a good, well-structured review of an area that is
typically either ignored or covered poorly by standard textbooks. Similarly, Vicki Bruce’s chapter
on imagery and reality monitoring integrates diverse research over the past three decades in this
area. The chapter on consciousness by Andrew Young and Ned Block covers the only area which
would, by common consensus, have to be included in a book devoted to unsolved mysteries of
the mind. In addition, the recent research interest in this area, in particular in neuropsychology,
holds the promise of significant progress in the near future in our understanding of what it
means to be conscious. Again, this chapter is well-structured, though the section on philosophy
may be heavy going for those with no background in this area. I found Michael Morgan’s
chapter on illusions rather dry, and so I was not convinced that this would successfully catalyse
discussion in a seminar. It contains more specific detail than the other chapters, which would
be difficult to transfer to an informal and interactive tutorial, unless students were well-prepared.
Finally, the chapters on emotions by Philip Smith and Susan Kemp-Wheeler and on whether
animals can think by Stephen Lea and Marthe Kiley-Worthington seemed less focused than the
other chapters and had difficulties in defining key terms. These latter two chapters, like that on
consciousness, were inevitably going to be more difficult to write than the imagery and illusion
chapters, which could be tied in to empirical results. Nevertheless, even taking this into account,
I found them difficult to follow. Without a clear theoretical framework it would be over-ambitious
to use these as tutorial reading.

In conclusion, I feel this book will be of limited use to most undergraduates because it is a
relatively expensive way to provide background material for a few seminars. There are some
well-written and interesting chapters in the book, providing a nicely integrated review of research
in areas poorly covered by standard course textbooks. Unfortunately, I feel that these chapters
will not be as widely read as they deserve to be, since the overall aim of the book to discuss
the unsolved mysteries of the mind does not provide a sufficiently coherent framework to inte-
grate these separate sections.

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The design of everyday things by D A Norman; MIT Press, Cambridge, MA, 1998, 257 pages,
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When I was asked to review this book I was delighted at the prospect of reading a new edition
of the classic text by Norman. I was therefore somewhat disappointed when it became evident
that the latest publication from MIT Press is not a new at all. A paperback version was originally
published in 1990 by Doubleday/Currency, but this is now out of print. So it appears that MIT Press
has just re-published this edition to fill the void in the market for a paperback format. Except for a
modified title, it is the same book as published in hardback in 1988 by Basic Books; the content,
chapter titles, and even page numbering are the same. So I have ended up reviewing the original
book in a different guise.

Despite my disappointment that a new edition had not been written, I took the opportunity
to remind myself of the book. I remembered being struck by two slightly opposing sensations
as I read the book for the first time. I was immediately struck by the relevance of the book for
the consumer and the designer. It is relevant in the sense that it originates from the concern of
a user as much as from the objectives of an academic. It is also relevant in the sense that it
makes general statements applicable to the design of common things that we all can experience.
However, the really appealing aspect of this approach is that the insight and sensibility of the
principles that are identified can apply to the uncommon things that the average person will not use, but for which correct design and functioning are critical (eg nuclear power plants, F-16s, supertankers). I will return to this theme again later.

I was therefore left with the view that Norman is a very gifted academic, and an even better writer. He writes in a way that conveys important principles in a clear and intuitive manner. In this way, things that might otherwise read as convoluted and pretentious seems intuitive and sensible, but it has sufficient import and credibility to be appreciated for more than common sense.

I have my own favourite pearls of wisdom: some relate to general psychology. I found Norman’s use of ‘affordances’ both in the discussion of ‘natural mappings’ and in the distinction between ‘knowledge in the world’ versus ‘knowledge in the head’ to be interesting and informative. His chapter on human error and his views on sufficiently precise behaviour resulting from imprecise knowledge (ie error as approximations of precise behaviour) are also applicable to general psychology. Others are relevant more specifically to design and human factors. The modelling of the ‘gulf of execution’ and the ‘gulf of evaluation’ as the main objective for design to bridge are useful concepts, both in the application and teaching of design. The ‘seven principles’ of design summarised by Norman should be rules-of-thumb for any hands involved in the design process.

However, I was also left with the sense of unfamiliarity of what kind of book this is. As an academic, I was not sure how to label it, given that it does not read as a traditional text, due to an absence of tabulated data and algorithms or citations from learned journals. Nonetheless, I did recognise the academic merit of the content. I suspect that others based in different fields and professions may have the same sentiment. While recognising the value of what Norman says, they will not label the text as a ‘traditional’ book. For some, this will be off-putting. For others, the nonpartisan nature of the book will be refreshing and open eyes. Even for those purest who only feel at home reading within their own domains, there is value in this book. The academic psychologist can feel comfortable in the chapters on human error and memory. The designer will find solace in the chapter on the challenges to the design process. Those with a human-factors bent will feel at home with the chapter on user-centred design. The main point though, is that everyone would get something from this book if one reads it as a user of everyday things rather than a member of a particular field or profession. And the cost of the paperback version makes it more accessible in terms of expense (for example, as a text for students).

My only criticisms of any substance relate to my perception of the book’s context structure and my forlorn hope for a new edition. In terms of content, there are parts that seem to wander away from the framework of the book and sections where the same concepts are repeated in the same or similar guise. This is particularly true for chapters 1 through 4. This impression is exaggerated by the fact that the entire book could be published as chapter 7 alone (User-centred design)—which is the penultimate chapter in the book and makes the final summary.

I have already mentioned my disappointment that this is not a new edition. Admittedly at the outset, to some extent the design principles identified in the book can generalise to the less common cases too. However, I feel that an edition that takes explicit account of design for more complex and safety-critical systems would be welcomed. Such things may be less common and used less often by fewer people, but often have more significant consequences for improper use. Such an edition could give examples of the application of the original design principles to these more complex systems, but also possibly derive new principles that are specific to such systems. This would expand the relevance of the book to a wider user community.

In conclusion, this book did a great deal for the design of everyday things. But it could also make substantive contributions to the design of complex and safety-critical systems. This will become more relevant as technology advances further into the sphere of everyday tasks. For example, it is little comfort to a pilot who has initiated an accident by entering the wrong information into a flight control system that the VCR at home has been correctly set to automatically record his favourite show.

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