The Chemistry of Conscious States – *Toward a Unified Model of the Brain and the Mind*

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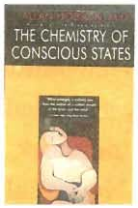

The Chemistry of Conscious States – Toward a Unified Model of the Brain and the Mind
J Allan Hobson
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> This book raises fascinating issues, and has a marvellous supply of anecdotes and titbits to illustrate the daily chemical ballet in the brain.

In *The Chemistry of Conscious States*, J Allan Hobson takes us on a tour of the chemical brain. He brings all the insights and perspectives of a neurologist and researcher, which provide wonderful anecdotes but also sometimes limit the scope of the book. Although this book is written for the interested layperson, there is much in it even for the professionals in the field.

The book revolves around the two themes of the title: the chemistry of the brain, and its states: wakefulness, sleep, and sometimes, insanity. The brain *is* the mind, asserts the author. He follows the 'brain-mind' through wakefulness, deep sleep, and dreaming, and draws interesting parallels between the dreaming brain and psychotic states. These 'mind' states emerge from the interplay between two of the major brain regulatory chemicals, in the cholinergic and aminergic systems. He illustrates how the mind itself can go out of kilter when this chemical balance is upset. The author concludes the first section with a proposal for considering brain function in terms of activation level, information source, and chemical mode. This sets the stage for his discussion of the functioning of the brain in later chapters.

In the second section of the book, the author examines major faculties of the brain: orientation, memory, perception, emotion, attention and energy. In an account richly embellished with case histories and research findings, he considers each in terms of his overall scheme for brain function. The crux of the book is reached when he brings all of these ideas together to discuss consciousness and the mind. He boldly asserts: "The mind is all the information in the brain..... Consciousness is the brain's awareness of some of that information".

In the final section of the book, the author returns to his medical roots and asks how his insights into the mind-brain might help cure it. He takes on the doctor's traditional admonishment to "sleep well", and reinforces it with his pleasantly familiar mix of brain chemistry, medical stories, and common sense. The last chapter is a sobering commentary on drugs and the brain: abuse, overprescription, and a poignant sense of loss for his first patient, for whom the insights

in this book came too late.

This book is tantalising. It raises fascinating issues, and has a marvellous supply of anecdotes and titbits to illustrate the daily chemical ballet in the brain. It does a particularly good job of stressing the known physical and chemical basis of mental function and dysfunction. But it often leaves the reader with the feeling of being at the point of a deeper insight, but never quite getting there.

The author does not shy away from controversial topics. Early on in the book, he takes the issue of the *psychoanalysis* of Freud and the *behaviouralism* of Skinner. In this, he departs from traditional medical and educational practice, and sides clearly with the mainstream of modern neuroscience. It is a welcome debunking. He also takes aim at the even more contentious issue of the brain-mind problem, and comes out squarely on the side of those who regard them as one and the same.

There is always the question of how much depth a topic warrants, specially in a book written for a general audience. Unfortunately, the author has chosen not to tax the reader with too many pros and cons. Many of the interesting discussions in science arise out of disagreements, and the study of the brain is particularly rich in them. The author, however, has chosen to present only his viewpoint in any depth, and does not really examine the other ideas that challenge them. This is particularly regrettable in the core chapter of the book: *What is consciousness? What is the mind?* There is such a wonderful intellectual ferment in this area that it is a shame to miss out on some of the ongoing debates. A lesser issue with the book is that it doesn't really branch out to other ways of looking at the brain. Indeed, among cognitive neuroscientists, the 'chemical' viewpoint expounded in this book is actually accorded far less prominence than the 'network' viewpoint of brain function. Neuronal networks receive only a brief mention in the book, but surely they merit more, if only as supporting the different ways of looking at the same phenomena. Finally, one wishes that there were some pictures.

Even with these points in mind, I would recommend the book unhesitatingly to readers of all backgrounds. For those first venturing into the vast topic of the brain, the book uses everyday landmarks like sleep, dream, and emotion to build up to some profound questions. For students of biology, there are many new concepts and a different slant on many familiar ones. And for all those with a fascination for the most mysterious of organs, here is as modern and holistic a view as you are likely to find outside the textbooks.

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