
Preface

Some pre-publication reviewers have said this book is not scholarly enough. Others said it was too scholarly.

To the scholars I say, “I don’t intend this to be a book only for scholars, because human mind is too important to be left to specialists.” I would add “If you can overlook not being dazzled with brilliance, you will nonetheless find provocative ideas, and if you do research in this area, some of these ideas can drive your research.” This applies particularly to topics such as the nature of information coding, free will, consciousness, and dreaming.

To those who think the book is too scholarly I say, “Hell, I am trying to understand and explain the human mind, the most complicated thing in the known universe. I have a right to expect readers to have some science background. A few college-level science courses that include biology should suffice.”

Why write such a book? ... because consciousness is the cardinal experience of all humans, scholars and non-scholars. We all have a most personal vested interest in knowing what this unique capability of mind is all about. While it is true that some other higher species may experience some degree of consciousness, every indication is that these animals do not participate in introspection, as all humans are compelled to do.

How to Read This Book

I, like most authors, would like you to read this book from front to back. In our not-so-humble view of our “deathless prose,” we authors think you will miss too much if you skip around. This book is not to be a primer on psychology or neurophysiology. There are plenty of books that do that. This book is about how the brain creates mind and how it engages biology to think. The chapter titles reflect the flavor of how I approach this subject. No single book that I know of, technical or otherwise, approaches the issue of thought in this way.

You can, of course, skip around, because each chapter has a distinct theme. How much you skip around will depend on your time, inclination, and educational

background. Even so, no matter how much education you have, I think it is certain that every chapter presents at least some materials in ways you may not have considered.

Chapter 1 opens with a discourse about science and religion. Religion is universal in all human cultures. Whether rational or not, religious beliefs are an inherent property of human mind. The great clash of science and religion arose in the nineteenth century with the theory of evolution. In the twentieth century, we learned most of the fundamentals of how brains work. In the twenty-first century, expected insights about the material nature of mind will make it very hard to avoid a reassessment of “old time” religion. To set the stage for such reassessment, the chapter presents an orientation around what brains do and a couple of basic principles about how brain’s react to the world.

Chapter 2 stimulates reflection on what it means to think, not as a psychologist would do, but as a blood-and-guts physiologist (like me) would do. These are two quite different ways at looking at brain function. Given the plethora of psychology books, there is no need for me to take that approach.

Chapter 3 defines “thought” in physiological terms. Here is where I explain that the carrier of thought is atoms, more precisely sodium and potassium atoms that have become ions by giving up surplus electrons. These ions, not electrons, provide pulses of electrical current that are the electrical carriers of thought. Though Chaps. 2–4 may contain more academic content than some readers care about, it would be helpful to at least scan this material because it sets the groundwork for all the rest of the book. The theories of consciousness that are later developed will not be properly understood without understanding the general ideas of these chapters. You can gloss over some of the details, but at least try to get the general ideas. This is, after all, a book on how minds are created and how they work. Nobody should expect reading about that to be easy. But it should be gratifying.

Humans crave understanding when the facts and ideas are not too complicated. We are especially are driven to understand ourselves, our inner soul so to speak. Unfortunately, understanding ourselves is harder than even rocket science. Yet, I maintain the ordinary human minds can understand mind, with sufficient effort to learn and with clear teaching that arises from other ordinary minds. Here then in this book is my ordinary mind’s attempt to provide clear explanation.

Chapter 4 presents textbook-like summaries of anatomy, physiology, and biochemistry. But the whole presentation is in the context of thinking and does not treat these ideas as independent ends unto themselves.

In Chap. 5 explanations begin to be illustrated by specific kinds of thinking where we know some of the underlying biology. This includes things such as how we localize sounds or position in space, how we recognize faces, how the brain computes movement trajectories, and how values are attached to actions. In all such kinds of thought, it will become clear that nerve impulses flowing in defined interacting circuits are central to thinking processes.

Chapter 6 moves us beyond individual nerve cells (“neurons”) and their local circuits to more global functions that help the brain’s various parts operate

cooperatively and synergistically. These ideas help to show how “mind” is more than the sum of brain parts.

No one who has reason to pick up this book will want to miss Chaps. 7 and 8. This material is the climax of all that has gone before. These chapters explore what we know about the biology of consciousness. The vexing problem of “free will” is tackled. Finally, four quite different theories for consciousness are presented, concluding with the ideas that I think are most consonant with all that has been presented in the earlier chapters. I present my own ideas on such things as how consciousness is produced and why we have dream sleep.

Think about it and enjoy.

Atoms of Mind

The "Ghost in the Machine" Materializes

Klemm, W.R.

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