

Chapter 4

Mind and Matter: Why It All Makes Sense

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ABSTRACT

A purely reductionist approach to neuroscience has difficulty in providing intuitive explanations and cost effective methods. Following a different approach, much of the mechanics of the brain can be explained purely by closer study of the relation of the brain to its environment. Starting from the laws of physics, genetics and easily observable properties of the biophysical environment we can deduce the need for dreams and a dopaminergic system. We provide a rough sketch of the various a priori assumptions encoded in the mechanics of the nervous system. This indicates much more can be learnt by studying the statistical priors exploited by the brain rather than its specific mechanics of calculation.

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INTRODUCTION

The best minds of man's short history on Earth have been thrown into the bottomless pit of a single question: What is the relation between the inner and outer worlds of our experience? Is the universe purely a product of the mind, nothing but an illusion in the mind of an ancient dreamer? Or, on the contrary, is the mind but a small piece of machinery in God's cosmic clockwork?

The rise of materialism in the last centuries has certainly favoured the latter view but, as the technological progress continues to blur the lines separating imagination and reality, the fragility of our current understanding of the relation between mind and matter is again becoming unsettlingly apparent.

The spearhead in this transformation has been information technology. Rather than, as in older scientific visions, molding the world around our fantasies the scientific development has moved in a diametric direction. We have liberated the flow of information and, to some extent, our subjective experience from the physical world.

Be it literature, cinema or computer games, increasing amount of time is being spent in purely imaginative and virtual worlds. To many of us, direct experience of the material world remains just a necessity and distraction. Likewise, the centers of the economy and power is equally being transferred into the virtual realm. While accepting a materialist world view, we have been moving into an idealist reality. The material world, although commonly accepted as the higher reality, has been greatly reduced in its importance in our daily lives.

However important this digital transformation has been, what awaits us next will dwarf it. In handling the growing amount of information we have recruited the help from self-learning systems and thus triggered the probably irreversible development of artificial intelligence.

Compared to information technology, artificial intelligence is a very different beast. Instead of liberating the mind from its material obligations, we liberate the material obligations from the human mind.

Further, as mathematical formula and the human minds inevitably grow ever more similar to each other, the question of what a mind is becomes ever more urgent. So being developed in the materialist reductionist tradition, artificial intelligence seeks to explain the mind as a movement of molecules, a transmission of substances, a network of synapses that all give rise to images in the mind. Instead of imagining the world roughly as the realization of a set of ideal physical laws, as in traditional physics, we imagine thoughts themselves as a set of physical structures.

This new field of science is no longer about explaining the world in theoretical terms but in explaining the mind in material terms. What then is a mind? Let us not resist the zeitgeist and instead follow the materialist path to its natural conclusion. The mind is just an illusion of the material brain. The brain is there to help us

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