

Conscious Minds in a Material World

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Basic Books

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Consciousness —
Still Unexplained
After All These Years
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CONSCIOUSNESS DEFINED

Imagine you are in a deep, dreamless coma. Your brain is operating on its lowest setting, merely keeping your body alive—heart beating, lungs working. Your mind is completely inactive. It is all blank within. Gradually, you begin to come out of the coma, thanks to the tireless efforts of your doctors. First you experience the position and temperature of your body; you feel comfortable and warm, no aches and pains anywhere. You hear the murmuring of the doctors, human voices all around you. There is an acrid taste in your mouth and a sensation of thirst. You catch a whiff of formaldehyde in the air. You feel confused and excited, your thoughts barely coherent. You struggle to open your eyes and a flood of bright colors assails you. Your head aches slightly, under this barrage of sights, sounds, and smells. You try to speak.

You have, as we say, recovered consciousness. All those sensations and feelings, those emotions, thoughts, and perceptions, are instances of consciousness. You were unconscious, now you are conscious: your mind is up and running again. You have made it back into the world of sentience. You are an experiencing subject once more. This transition is not simply the change from sleep to wakefulness. Remember I said you were in a *dreamless* coma. If you had been dreaming, your mind would still be working while you were asleep. You would be unconscious in one sense, unaware of your surroundings, but conscious in another, since you would still be having sensations, feelings, emotions, and thoughts. Dreams are just another form of consciousness, the kind you have when you are in the strange state called sleep. You are indeed not conscious of your surroundings while you are asleep and dreaming, but your mind still plays host to the same kinds of conscious goings-on as when you are awake. You are quite unlike a mindless rock or a brain-dead accident victim. You could in principle spend a mentally rich life in a state of uninterrupted "dreaminess." There is all the difference in the world between a dreamer and someone whose mind is a complete blank. In dreams you do not cease to experience, to be a subject of consciousness.

This inclusive phenomenon of consciousness is the topic of this book: the having of sensations, emotions, feelings, thoughts. Consciousness is not the same as wakefulness. Nor is it the same as self-awareness. When you woke from the coma you experienced various sensations, but whether you reflected *on* those sensations is another question. To *experience* those sensations is not the same as to *think* that you experience them, or to say that you do. We do often reflect on our own experiences and tell each other about them, but this is not the same thing as merely having them. So we should not confuse consciousness with self-consciousness. When you are at the movies, immersed in the experience of watching the action, you seldom ascend to the level of reflecting *that* you are having all those experiences. You just *have* the experiences without forming any reflective thoughts about them. Babies presumably undergo a range of conscious states, but it is doubtful that they are reflectively self-conscious: they have no notion of self at all, at least in the early stages. And many animals are in the same state: they have a conscious life, but they do not aspire to reflect on this fact. They do not, to put it another way, apply mental *concepts* to themselves. To have a conscious state is not the same thing as applying a concept *of* that conscious state to oneself, any more than to have a certain color hair is to *describe* oneself as having that color hair. Being a certain way and characterizing yourself as being that way are logically independent facts. So we are interested here in *being* conscious, not in characterizing oneself *as* conscious—in the *fact* of consciousness, if you like, not its self-ascription. Our interest is in the sensation of pain itself, for example, not in the ability to think about the fact that you are in pain when you are.

We mature humans do, however, occasionally reflect on our consciousness. In fact this book is a prolonged reflection on it. And when we reflect on it we are struck by the fact, which so gripped René Descartes, that our consciousness is among the world's great certainties. I may not be certain that I am awake now and not dreaming, and I may entertain rational doubts about whether I am really sitting at a keyboard typing, but I cannot

feel this kind of insecurity about whether I am currently having experiences of a certain kind. For it certainly *seems* to me that I am typing and looking at a computer screen, even if in reality I may not be. The entire world may not exist for all I know, but my experiences of it certainly do. I can be certain of the existence and nature of my conscious experiences, even though I cannot be certain of what causes them. Thus I am certain that I am conscious: beyond a shadow of a doubt my stream of consciousness is full and flowing. I just heard a loud bang and then the sound of a car alarm in the street: hearing (the conscious state) was immediately given to me, although the cause was a matter of conjecture. This means that consciousness is a *datum*, a given, something whose existence we cannot coherently dispute. It is therefore something whose explanation we cannot duck, no matter how difficult this may be. Consciousness is always with us, as long as we are around.

The central topic of this book is the explanation of consciousness. Suppose I had asked you to imagine waking from a coma without having a brain in your head. You would have been rightly perplexed. Having a brain is what makes it possible to have a mental life. The brain is "the seat of consciousness." But it is not merely that the mind sits *on* the brain, like a monarch on her throne, a convenient place to take the weight off her legs. It is more that the brain is what enables the mind to exist at all; it is more of a womb than a seat. The machinery of the brain allows the mind to work as it does and to have the character it does. A queen can walk away from her throne and take a stroll in her palace gardens, but the mind is not able to detach itself from the brain in this way (if you think it can, see chapter 3). Consciousness is locked to the brain, rooted in its tissues. But this raises the question of the nature of this deep and intimate link. Can the mind be fully explained by the brain? Or are they really separate entities? What kind of thing *is* a brain, that it makes consciousness possible? What is the nature of the bond that connects our conscious experience with the workings of the gray matter in our heads?

In this book I argue that the bond between the mind and the brain is a deep mystery. Moreover, it is an ultimate mystery, a mystery that human intelligence will never unravel. Consciousness indubitably exists, and it is connected to the brain in some intelligible way, but the nature of this connection necessarily eludes us. The full import of this thesis will take some time to unfold. I am especially concerned to examine the *reasons* for this mystery. I am not just throwing my hands up in despair; I am interested in uncovering the deep reasons for our bafflement and examining the consequences of our constitutional ignorance. Socrates was concerned to show people that they know less than they think they do. I too am concerned with the nature and source of human not-knowing; I want to know *why* some things are so hard to know. What *is* it about consciousness that makes it so elusive to theoretical understanding? And what is it about the knowing mind that makes it founder here? For the rest of this chapter, however, I want to articulate the problem of understanding the link between the mind and the brain further and indicate why the standard traditional responses to it do not work. Then we can move on to explore the mystery in more depth.

CONSCIOUS MEAT

Consciousness is so familiar that it is hard to appreciate what an odd phenomenon it is. We tend to take our consciousness for granted and not wonder about its origins and grounds. Let us then try to step back from our consciousness and defamiliarize it. In particular, let us try to develop a sense of the oddity of the mind-brain link. We can start with an extract from a clever science fiction story by the writer Terry Bisson. (The link between mind and brain can seem like pure science fiction.) It takes the form of a conversation between an alien explorer who has visited earth and his commander:

"They're made out of meat."

"Meat?" ...

"There's no doubt about it. We picked several from different parts of the planet, took them aboard our recon vessels, probed them all the way through. They're completely meat."

"That's impossible. What about the radio signals? The messages to the stars?"

"They use the radio waves to talk, but the signals don't come from them. The signals come from machines."

"So who made the machines? That's who we want to contact."

"They made the machines. That's what I'm trying to tell you. Meat made the machines."

"That's ridiculous. How can meat make a machine? You're asking me to believe in sentient meat."

"I'm not asking you, I'm telling you. These creatures are the only sentient race in the sector and they're made out of meat."

"Maybe they're like the Orfolei. You know, a carbon-based intelligence that goes through a meat stage."

"Nope. They're born meat and they die meat. We studied them for several of their lifespans, which didn't take too long. Do you have any idea of the life span of meat?"

"Spare me. Okay, maybe they're only part meat. You know, like the Weddilei. A meat head with an electron plasma brain inside."

"Nope, we thought of that, since they do have meat heads like the Weddilei. But I told you, we probed them. They're meat all the way through."

"No brain?"

"Oh, there is a brain all right. It's just that the brain is made out of meat!"

"So.... what does the thinking?"

"You're not understanding, are you? The brain does the thinking. The meat."

"Thinking meat! You're asking me to believe in thinking meat!"

"Yes, thinking meat! Conscious meat! Loving meat. Dreaming meat. The meat is the whole deal! Are you getting the picture?"

The point of this parable is to bring out how surprising it is that the squishy gray matter in our heads—our brain meat—can be the basis and cause of a rich mental life. From one point of view, our prized cerebral organ *is* just a hunk of meat. After all, people do sometimes eat animal brains with potatoes and peas, and there is no hint in that culinary experience of what the tasty tissue used to accomplish when it was still the animal's organ of consciousness. (Not that I've ever tasted brains; I'm a vegetarian.) If someone were to eat your brains while you were still alive and conscious—which heaven forbid!—that person would not taste the mental events that he or she was gradually consuming. The person would certainly not taste what you were tasting as you bit into a fresh pineapple. Calling the brain "meat" is a way of classifying it along with other meaty body parts, such as muscles, kidneys, and hearts. There is nothing in this classification, itself perfectly legitimate, to prepare us for the remarkable fact that brains alone make organisms into conscious beings. Your deepest feelings might turn into a masticated mouthful if your brain falls into the wrong hands.

Can it really be true that your consciousness can be eaten and digested? The alien commander's incredulity should be ours: How *is* sentient meat possible? We know that it is possible because we all have sentient brains, but what explains this bizarre and rather comical fact? It appears so improbable to the aliens I "quoted" that minds can be engineered from the kind of thing that can be bought at a butcher's shop that they have a hard time accepting it. It *ought* not to be so, and yet, miraculously, it is. How can this be? (Of course, the same enigma exists for the aliens and their own brain unit, but they are so familiar with it in their own case that they are as complacent as we are about what makes their minds possible.)

We can state the problem this way: Isn't there some kind of violation of the uniformity of nature in the fact that brains produce consciousness? Brains seem very similar to other parts of animal bodies, being basically a big collection of cells organized according to biochemical principles. Yet there is a yawning chasm between the natures of these entities, because brains produce consciousness and those other meaty organs do not, not even a little bit. This fundamental difference is not predictable from the physical similarities we observe. If we were to observe all the body parts apart from brains, we would arrive at the conclusion that body parts do not produce consciousness. But then we encounter brains and are brought up short. They violate the natural belief that collections of cells do not generate minds. This puzzle is like observing that balls roll down hills and then discovering one that takes off into the air of its own accord. We examine this exceptional ball from every angle, but can't find anything to distinguish it from all the others. We conclude, reasonably enough, that nature is not uniform after all. Except that this never happens: we always find an underlying difference that explains the different powers of the superficially similar object. (The ball has a special kind of motor in it that is hard to detect.) But in the case of the brain, this kind of explanation apparently does not apply: one ball of matter does have the power to bring consciousness into existence, but it seems so similar to all the other mindless balls of matter rolling around in the world. Worse yet, only *some* of the states of brains are connected to consciousness, because some brain processes occur without any accompanying conscious process. The parts of the brain connected to maintaining basic bodily functions have no conscious correlate, any more than states of the liver do. But the two kinds of brain process appear quite similar to each other, just neurons and their interactions. How can such similarity mask such dissimilarity? This incongruity flies in the face of our deep-seated and highly confirmed belief in the uniformity of nature. How can like causes produce such vastly unlike effects? To maintain our belief in the uniformity of nature, we are forced to deny that the brain causes the mind or to try to find new properties of the brain to distinguish it from other all other physical objects. We cannot just note the violation and shrug our shoulders. The aliens are operating on this principle when they react with such incredulity to the fact of conscious meat. None of the meat *they* have ever seen has come with an inner life. How can nature tolerate such inconsistencies in the way it works?

Some people like to harp on the complexity of the brain, as if this gave a clue to its mental productivity. But

sheer complexity is irrelevant: merely adding more neurons with more synaptic connections doesn't explain our problem a bit. The problem is how *any* collection of cells, no matter how large and intricately related, could generate consciousness. The trouble is that neural complexity is the wrong *kind* of thing to explain consciousness; it is merely a matter of how many cells a given cell can causally interact with. If our kidneys had as many cells as our brains, that would not make them conscious. Nor is a galaxy conscious just because it has a tremendous number of interacting parts. If complexity is to play a role in generating consciousness, then we need to be told what *kind* of complexity is involved.

Another red herring is the "hiddenness" of the brain, the fact that it is inside an opaque skull and has an invisible interior (unless you cut it open). There is no logical necessity about this. Imagine an organism whose brain is distributed over its outside, like its skin. (Insects have an *exoskeleton*; this organism has an *exocerebrum*). We can see its brain perfectly plainly whenever we met up with it. And suppose we are all naturally equipped with brain scanners (MRIs) that enable us to see the patterns of brain activity in this skinlike brain. I think this would make us feel the puzzle of mind and brain even more acutely than we do now, because we would not be inclined to think that the brain's inner recesses somehow correspond to the private consciousness of the Other. We would gaze in wonder at this pulsating grayish skin and wonder how *that* could possibly be the foundation of a mental life. Examining an area around the organism's left toe, we would ask ourselves how on earth an experience of red could possibly arise from such inauspicious and unpromising materials. But the tissue inside your brain that corresponds to an experience of red is really just the same *kind* of tissue as could be spread out over your left foot. Bunching up my actual skin and stuffing it into my skull certainly effects no magical transformation in its mind-generating powers. The "privacy" of consciousness has nothing to do with the fact that the brain is buried out of sight.

We can also formulate the problem historically. Consciousness has not always been here. For millions of years after the Big Bang, the universe was without life or mind, just brute matter suspended in space. Eventually life evolved on this planet (and maybe on others, too), and in the fullness of time organic brains came into existence. We can think of this slow development as the cumulative reorganization of matter under the laws of physics and biology. With evolution by natural selection, a new principle entered into the ways in which matter clumped its constituents together: the fitter the clump, the more likely it was to replicate itself. Thus, matter came to exhibit a certain sort of design, the kind that results from chance mutations being honed into organisms that reproduce more effectively than their competitors. The design of organisms is undoubtedly a remarkable fact of nature, calling for a very special kind of explanation, the kind that Darwin provided. Thus the long neck of the giraffe results from the fact that earlier giraffes with longer necks than their brethren could reach to higher places for food. The genes for longer necks were passed on more frequently than genes for shorter necks because those giraffes that could eat more had a better chance of reproducing themselves. In other words, longness of neck conferred survival advantage on giraffes that had this trait, and this produced a selection pressure that favored longer necks. But the existence of consciousness cannot be explained in this way. We are not stunned by the fact that matter is *capable* of forming the elaborate designs of animal bodies: ultimately it is all just a matter of ever more complex combinations of particles. We are not amazed that a telephone can be made from matter either, although we would be amazed if its design were not explicable in terms of some organizing principle. But in the case of consciousness the Darwinian explanation does not tell us what we need to know, for the simple reason that it is unclear how matter *can* be so organized as to create a conscious being. The problem is in the raw materials. It looks as if with consciousness a new kind of reality has been injected into the universe, instead of just a recombination of the old realities. Even if minds showed no hint of design, the same old problem would exist: How can mere matter originate consciousness? How did evolution convert the water of biological tissue into the wine of consciousness? Consciousness seems like a radical novelty in the universe, not prefigured by the after-effects of the Big Bang, so how did it contrive to spring into being from what preceded it?

This big problem manifests itself countless times a day. Every time a sentient organism comes into existence, its consciousness freshly minted, we have the same transition from insentient matter to "mindedness." Cells combine and grow during gestation until the brain is mature enough to decant experiences: At first this clump of cells is without mentality, and before you know it there is consciousness throbbing away in there. Where does it come from? What manner of secretion is this? How does mere meat turn itself into conscious awareness? Once you were just insentient cells, no more aware of anything than your liver is now. Today you are brimming with consciousness. How did you make the grade? What catapulted you into consciousness? There must be some kind of natural process behind this astonishing leap, but this process is obscure.

Consider the universe before conscious beings came along: the odds did not look good that such beings could come to exist. The world was all just physical objects and physical forces, devoid of life and mind. The universe was as mindless then as the moon is now. The raw materials for making conscious minds—matter in motion—looked singularly unpromising as the building-blocks of consciousness. Yet now there is plenty of consciousness around, and it is as certain as anything can be. Human beings have lots of it, and the other species have their fair share, too. Just think of the amount of *pain* the universe has contained by now! It appears as if the impossible has occurred. Unconscious physical particles have conspired to generate conscious minds.

If we call the original upsurge of consciousness in the universe the "Soft Shudder," then the question becomes how to get from the Big Bang to the Soft Shudder. We have a good idea how the Big Bang led to the creation of

stars and galaxies, principally by the force of gravity. But we know of no comparable force that might explain how ever-expanding lumps of matter might have developed an inner conscious life. Consider the problem in the way an astronomer might. Astronomers tell many exotic tales about the way matter behaves under certain special conditions: extremes of heat and cold, extremes of gravitational pressure, extremes of explosive power. Matter is not everywhere as mundane as it appears to us on mild little planet Earth. Black holes—those concentrations of matter so fierce in their gravitational fields that nothing can escape their iron grip, not even light—are the favorite popular example. This is matter at its most occult and souped up. Black holes can only be known about indirectly, by the ripples of their extreme gravity, because no light can escape their clutches to reach our telescopes. The properties of a black hole are indeed singular and striking. But compare brains: imagine coming across these peculiar concentrations of matter in the course of your astronomical explorations. Their gravitational force is minimal, but their effects on surrounding objects are even more astounding than the effects of a black hole. Brains cause technology, society, art, science, soap operas, sin. A remarkable set of effects for such a small chunk of coagulated atoms. And the brain's influence doesn't stop there. The brain also produces inside itself a whole new dimension of reality: conscious experience. Each living brain contains its own center of thought and feeling, its own experienced world. A brain is a piece of mind-matter, a subspecies of matter in general. And like a black hole, it presents problems of knowability: that inside dimension, that subjectivity, is something that can only be inferred from external effects. Certainly no light is reflected from consciousness! A brain is a celestial object with more bizarre properties than any black hole or red dwarf or infinitely dense singularity. What would our roaming alien astronomer christen it? A "gray mind-pump," a "damp soul-source," a "mentaroid?" That astronomer would certainly need a whole new taxonomic category to do it justice. She would proceed to crack a brain open to reveal the consciousness inside it, thus dispelling the mystery of its operation. But the astronomer would be bitterly disappointed: The brain is just a soup of boring old biological cells. These mentaroids are queer objects indeed! Much head-scratching (or the alien equivalent) would ensue. What does this do to the received theories of matter?

The astronomical perspective is useful in alerting us to what a peculiar object sits in our heads. The brain begins to seem like a magic box, a font of sorcery. Thomas Huxley captured this sense of miracle beautifully when he wrote in 1886: "How it is that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of the djinn when Aladdin rubbed his lamp in the story." How could simply rubbing a lamp produce something like a djinn (itself a subject of consciousness)? What have brass and oil got to do with beings like djinns? In what sense could a djinn exist *inside* a lamp (some of these djinns are huge)? The whole idea sounds like nonsense when you think about it, just a fairy tale. But, equally, how can sending an electric current into a bunch of cells produce conscious experience? What do electricity and cells have to do with conscious subjectivity? How could a conscious self exist *inside* such a soggy clump? It begins to seem that we are all djinns, each magically ensconced in our own personal brain lamps, waiting to be rubbed into life. And just as Aladdin's lamp violates the uniformity of nature, because lamps do not *generally* have such djinn-generating powers, so we appear to exist by courtesy of a breach in nature's uniformity. Electrochemical reactions don't generally result in subjective experience, yet in the case of our brains they seem to. It is all very puzzling, very puzzling indeed.

I hope that you are now feeling a cramp in your intellectual parts, a sense of mystery, even awe, that you are conscious at all. You should be thinking: *Something is wrong here*. The existence of your consciousness should strike you as a paradox, a sleight of hand. Am I now about to reveal where I mischievously led you astray and guide you back to sanity? Unfortunately, the solution to the paradox is not so simple. It will take some work to find our way out of this paradox (but it will be worth it in the end). What I want to do now is outline and criticize the standard historical approaches to the problem, just to get them out of the way. We need a fresh perspective on the problem, but first we need to know why the orthodox explanations, materialism and dualism, don't work.

(Continues ...)

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The Mysterious Flame is well written, highly readable, inventive and lively - you can sense the author's enthusiasm for his subject. You might not agree with everything written here - there is a lot of content and some of it amounts to (acknowledged) creative speculation. But unless there is an unreasonable clinging to a narrow anthropocentric outlook, it must become clear that to some degree or other this mysterian perspective (the idea that See what's new with book lending at the Internet Archive. The mysterious flame : conscious minds in a material world. Item Preview. remove-circle. First mentioned in chapter 43, Mysterious Flames are naturally formed flames that come into existence due to special environmental factors, etc. They can be used for Alchemy, Forging and Cooking, increasing the

success rate and the possibility of providing other benefits. Mysterious Flames are also useful in combat situations, allowing players to enhance their combat abilities, skills and spells, physique and even providing Magic Resistance.