

Why can you think? Because your neurons are firing. *End of story.* But is this really so? Sharon Dirckx argues brilliantly that this is not the end of the story. The author combines her professional expertise with the clarity of a teacher to explain that we are more than machines. She claims, furthermore, that the question “Am I just my brain?” is not simply for the neuroscientist and philosopher. It has implications that affect all people. She gives compelling reasons why we should take the Christian message seriously. This work provides excellent food for the mind as much as for the heart.”

Dr Pablo Martinez

Psychiatrist and Author

Laying out the arguments in her usual very readable style, Sharon makes a compelling case for why the answer to her book’s title [spoiler alert!] is “No”. Whether you agree with her conclusions or not, this whistle-stop tour of the hottest issues in neuroscience is a helpful, clear and concise summary of the different philosophical and theological positions, and the latest scientific data.

Dr Ruth M. Bancewicz

The Faraday Institute for Science and Religion, Cambridge, UK

In this fresh, clear, and helpful book, Dr Dirckx opens up a key part of what has been called “the most important conversation of our time”. Is freedom only a fiction? Is human dignity merely a form of “speciesism”? Are we no more than our brains? The answers to such questions affect us all, and it is vital that we all explore them.”

Dr Os Guinness

Author and Social Commentator

Books on this subject are often written by experts in philosophy and can be very difficult for the average reader to understand. This volume is written by a neuroscientist and is intended for non-specialists. The glossary and summary diagrams should make this important subject accessible to a greater number of people. I found the presentation to be both enjoyable and thought-provoking, and warmly commend it to you.

Dr John V. Priestley, Emeritus Professor of Neuroscience,
Queen Mary University of London, UK

Are we nothing more than the atoms of which we are made? Can humans be reduced to just the lump of grey matter between our ears? Sharon Dirckx draws upon her doctoral work in the sciences together with her years of experience in explaining the Christian faith, to help the reader think their way through this crucial question. Whether you're a Christian who wants to respond intelligently to new questions from neuroscience, or someone who suspects that the secular story isn't the whole story, *Am I Just My Brain?* will help you get not just your head—but also your heart, mind and everything else that makes you—around this fascinating topic.

Dr Andy Bannister Speaker, Author;
Director, The Solas Centre for Public Christianity

Sharon Dirckx has written an excellent primer on the challenging subject of human consciousness. In this marvellous little book she has defined and discussed the major topic points with clarity, and skilfully makes difficult concepts easier to understand. The result is a solidly presented case for our minds being more than just our physical brains. It examines questions that neuroscience can't answer, such as *why* we can think, and shows how this ultimately points us to the reality of a creator God. Thoroughly recommended!

Dr Gordon Dandie FRACS
Neurosurgeon, Sydney, Australia

Dr Dirckx is well qualified to investigate the question that forms the title of her book. She illuminates the widespread reductionist notion that the brain and the mind are the same, and shows that it depends more on a presupposed naturalist or materialist philosophy than it does on actual science. This book is for the open-minded, and will enrich the reader whatever their worldview. I wholeheartedly recommend it.

John C. Lennox
Emeritus Professor of Mathematics, University of Oxford

This book shows how the perceived gap between God and the brain doesn't have to be a block—and can be a signpost. Sit at the learned feet of an experienced Christian neuroscientist and discover how...

Steve Adams
Author, *The Centre Brain*

Am
I just
my
brin?

SHARON DIRCKX

Am I just my brain?
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*For my parents Dennis and Pauline.
Your love and support over a lifetime have
ultimately made this book possible.*

Introduction

An early childhood memory of mine is of sitting by a window on a rainy day, watching the drops splash against the pane. Like all normal children, I spent most of my life racing around. But at this particular moment, I was still, and my mind had time to drift. I remember a series of questions popping into my head:

Why can I think?

Why do I exist?

Why am I a living, breathing, conscious person who experiences life?

I don't really remember where the questions came from. Neither do I remember my exact age. They were just there. Unprompted.

I know I am not the first to have this kind of "moment". When we sit still for long enough, all kinds of things bubble to the surface of our consciousness. Mindfulness gurus even

tell us that bringing this kind of awareness into the foreground is good for our health. The more we are in touch with our inner life (such as our heartbeat, breathing and underlying emotions) and our outer environment (such as birds singing in the distance and doors slamming in the next room), the better. Conscious awareness seems to be central to what it means to be a living, breathing human being.

But what exactly *are* human beings? And how do we marry “aha” moments, such as the one described above, with some of the narratives coming from the sciences? Are we merely advanced primates? Are we machines? Are we souls confined to a body? Or are we some combination of all three? There are lots of different responses out there. Some of the loudest voices to answer this question come from neuroscience. They respond, “*You are your brain. You are your neurons. Why can you think? Because your neurons are firing. End of story.*”

Francis Crick, who co-discovered DNA and won the joint Nobel Prize in Physiology or Medicine in 1962, said this in his book *The Astonishing Hypothesis*:

“You”, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules. As Lewis Carroll might have phrased it: “You’re nothing but a pack of neurons”. This hypothesis is so alien to the ideas of most people alive today that it can truly be called astonishing.

Fifty years later, this hypothesis seems far from alien. In fact, many no longer consider it a hypothesis. According to them, it is the truth. The *only* truth.

Is Crick correct? Do our brains entirely account for who we are? How we answer this question has very far-reaching implications.

There are implications for free will. If we are driven by our brains, then are we really free to make decisions or are we simply driven by the chemical reactions within? On these grounds, how can anyone be held responsible for their actions, good or bad?

There are implications for robotics. Robots occupy more and more of the work force and have now entered our homes in the form of Google Assistant, Alexa and Siri. Will we eventually be able to manufacture conscious robots who are fully but artificially intelligent?

There are implications for ethics. If our brains define us, then personhood is dependent on having a fully functioning brain. But if that is true, then what status should we assign to those whose brains are not yet fully developed, such as premature and newborn babies? Or those whose brains have never functioned to full capacity, such as those with learning disabilities? Or those whose brains once functioned well but are now in a state of degeneration due to Alzheimer's disease or vascular dementia? In fact, none of us are exempt here. Beyond the age of 18, even a fit and healthy person begins to lose brain cells at an alarming rate. Our brains decline with age. Does this mean that personhood does too?

Finally, there are implications for religion. Since it has come to light that the brain is highly involved in religious belief and experience, can neuroscience now explain religion away? Is religious belief merely a brain-state, confined to those with the correct anatomy?

"Am I just my brain?" is not simply a scientific question. It taps into questions of identity that science alone cannot

answer, and to fully consider the question we will need perspectives from philosophy and theology as well as neuroscience.

The mind is of particular importance in this conversation. Is there more to us than neurons because there is such a thing as the mind? We don't merely secrete brain chemicals; we also think thoughts. And we don't think with our brains but with our minds. But what exactly *is* the mind, and how does it relate to the brain? Herein lies the rub. The relationship of mind to brain is disputed. Essayist Marilynne Robinson, in her book, *Absence of Mind*, reads the situation well by pointing out that...

Whoever controls the definition of the mind controls the definition of humankind itself."¹

The answer you give to the question "Am I just my brain?" is not simply for the neuroscientist and philosopher. It has implications that affect all people.

Glossary

It's unavoidable that a book on this subject will include many specialist terms. I have tried to keep the technical biological language to a minimum, but the words that philosophers use to describe the ideas discussed can be just as confusing. Hopefully the following list will help you navigate the thoughts, questions and answers in this book a little more easily.

Compatibilism: The view that determinism is true but is also compatible with free will. Compatibilists believe that humans are determined by prior causes but can also act freely when they are not being constrained or are seeking to fulfil their desires. This is also known as “soft” determinism.

Consciousness: A property of the mind through which our subjective thoughts, feelings, experiences and desires have their existence.

Determinism: The belief that prior causes guarantee a particular outcome. Every event has a cause.

Downward Causation: The process by which the mind is able to act “downwards” on to the brain and cause changes in the brain.

HADD: Hypersensitive Agency Detection Device. A device that cognitive scientists of religion say is built into the human mind, enabling patterns, signals and other agents from the surroundings to be picked up.

Hard-Determinism : The belief that prior causes entirely guarantee a particular outcome, such that it could never have been otherwise. In neuroscience this equates to the belief that the human brain and the choices arising from it are determined on every level by prior causes, thereby ruling out the possibility of free will.

Incompatibilism: The view that free will and determinism are incompatible with each other, which can be held by hard determinists and

libertarians alike, but for different reasons. Hard determinists believe that the fixed nature of the brain rules out the possibility of free will. Libertarians believe that the human will is free from constraints, and therefore the brain cannot be determined on every level.

Libertarianism: The view that freely made decisions can be made by agents (here, people) that are not determined by prior causes. This view upholds human free will.

Materialism: The view that observable matter in time and space is all that exists. For the purposes of this book, it is used interchangeably with physicalism.

Mind: The bearer of the unseen, inner life of a person, in the form of thoughts, feelings, emotions and memories. The mind is the bearer of consciousness.

Neurologist: A physician who is trained in diagnosing and treating disorders of the brain and nervous system.

Neuroscientist: A scientist who studies the brain and its functions.

Neurosurgeon: A physician who is trained in diagnosing and performing surgery on patients with disorders of the brain and nervous system.

Non-Reductive Physicalism (Neuroscientific): The view that the mind has been generated by the

brain. When a number of component parts come together and reach a certain level of complexity, something new (the mind) emerges. The mind is physical but cannot be reduced to physical processes alone.

Physicalism: The view that the observable physical world is all that exists. For the purposes of this book, it is used interchangeably with materialism.

Psychiatrist: A physician who is trained in diagnosing and treating those with mental illness. A psychiatrist is able to prescribe medication as part of a patient's treatment.

Psychologist: A non-physician who is trained in treating those with mental illness. A psychologist is not able to prescribe medication and is likely to treat patients by training them in mental exercises.

Reductive Physicalism (Neuroscientific): The view that the mind is reducible to physical processes in the brain. Therefore, there is really no such thing as the mind. The mind is the brain.

Substance Dualism (Neuroscientific): The view that two distinct substances characterise the mind-brain relationship: a physical brain and a non-physical mind. The mind can exist without the brain but in humans they interact. The mind is beyond the brain.

Am I really just my brain?

I will never forget the day I saw a human brain removed from a corpse. At that moment, I was already very familiar with the human brain, having spent years imaging and studying it. Yet, this experience was different altogether.

A group of us, dressed in green robes, wearing blue plastic shoes, were in a dissection room in a medical school. The icy formality matched the cold air of the surroundings. The pungent smell of formaldehyde, used to preserve human tissue, filled our nostrils. The body of an older woman lay on the bench before us.

This was not the first time I had seen a corpse, but there was something different about this setting. The woman had donated her body to medical research. We were there to study the anatomy of the human brain, and the first stage was to watch its removal from the body. Our anatomy professor and instructor began. There was no blood involved as the person had died some time ago, but a lot of sawing and, at times,

brute force to cut around the skull to expose the brain. Despite the clunky technique, it was a deeply sobering and reverent experience, conveying utmost respect for the unnamed woman who had given her body so that others could learn.

A few minutes later, and there it was in its entirety. A mass of water and fat, weighing just 1.5kg (3.3 pounds). I went into study-mode thinking less about the person and more about the anatomy of the brain. Yet, it was undeniable that on the table in front of us was the mediator of the thoughts, feelings, longings and experiences of this unnamed woman.

To the touch, the human brain is not unlike the consistency of mushroom. Yet, mercifully, you do not have mushroom between your ears. Quite the opposite. This incredible organ comprises just 2% of the body's weight, yet it uses 20% of its energy, despite being nearly 75% water. The human brain contains roughly 86 billion brain cells known as neurons. Each of those neurons can send up to 1000 nerve impulses per second to tens of thousands of other cells, at speeds of up to 430 km/h (268mph).² As you are reading these words, your brain is generating enough electricity to power an LED light, and every minute enough blood flows through your head to fill a wine bottle. The human brain is more developed than in any other creature, although the prize for the biggest brain goes to the sperm whale, weighing in at 7.5kg (17 pounds).

Every thought, memory, emotion and decision you make is filtered through this thing known as your brain. Changes to the chemistry and physiology of our brains affect our capacity to think. For example, just a small amount of dehydration can dramatically affect our attention span, our

memory, and our ability to think clearly. And many of us know that a morning shot of caffeine is vital to kick-start our thinking processes at the beginning of a new day.

But we now also know that changes to our thinking impact the brain itself. Scientists used to think the brain was fixed and rigid, but it is now known to be incredibly “plastic”, in the sense that it is constantly changing and forming new connections and pathways throughout a person’s lifetime. Changes to the brain affect our thinking. But our thinking, our lifestyle and our habits also shape the way our brains grow and develop.

STUDYING THE BRAIN

From a young age I knew I wanted to be a scientist. I worked hard at school—probably a bit too hard—and in my early teens I was already dreaming of doing a PhD. School in Durham led to university in Bristol in the UK, where I studied biochemistry.

I loved the lectures, but was less keen on the lab work. In my day, biochemistry labs were warm places, often with a strong yeasty smell. Students in white coats could be found blending, spinning or shaking exotic concoctions, pipetting tiny amounts of liquid from one test tube to another, or watching anxiously while their glass flasks enjoyed a long, hot soak in a bath. It could be weeks or sometimes months before we discovered whether an experiment had worked. And if it had not, it was time to start again. This was in the mid-1990s. Things have moved on since then.

It was in Bristol that I first heard about brain-imaging. Some friends studying physics were trying to squeeze results out of an archaic machine more or less held together with parcel tape, just down the corridor from my research lab.

They were using what was then a new technology that enabled them to look inside the body without making a single cut: magnetic resonance imaging (MRI). I was drawn to this technique and began a doctorate at Cambridge University two years later. I remember clearly the four-year-old daughter of one of the researchers reminding us of the unique selling point of MRI: *“Daddy, doesn’t it hurt when they slice into the man’s brain like that?”* She was watching a screen showing a rotating man’s head and slices gradually peeling off to show more and more of the inside of the brain. Does it hurt? Not one bit. With MRI you get electronic slices of brain, not real ones.

One of the most exciting contributions of brain-imaging is that it enables scientists to study the brains of healthy people. At the turn of the 20th century, when the only way to see inside a brain was to pick up a knife and start cutting, the only subjects available for investigation were those with sufficiently unpleasant or incurable diseases that they were willing to try anything; or else those in whom the disease had already run its full course. The arrival of brain-imag-

MAGNETIC RESONANCE IMAGING AND ITS ABILITY TO SEE INSIDE THE HUMAN BRAIN



ing techniques meant that healthy and diseased brains could now be compared.

Fast forward to the 1990s, and functional MRI (fMRI) took imaging to another level by enabling us to look not just at the structure in a series of static images but also at brain *activity*. Recall the times when you have climbed a tower, where the effort of ascending is rewarded with a spectacular view. At the top, our gaze often focuses first on the larger, fixed and easily recognizable structures such as buildings and streets. But then we also notice movement from pedestrians, cars and buses. MRI is most commonly used today to look at fixed anatomy in the brain or other parts of the body, such as knee or shoulder joints. By contrast, fMRI measures *movement* inside the brain, specifically the movement of blood. When part of the brain starts working harder, more blood rushes into it bringing supplies of oxygen and sugar. Functional MRI measures that blood-flow and can tell us which part of the brain is at work. Its development in the late 1980s shaped the landscape of neuroscience for decades to come—a landscape we are still exploring today.

I had the privilege of spending eleven years in fMRI research and worked with some brilliant neuroscientists who have made significant contributions to this field of research. Through fMRI, we investigated how the brain can reorganise itself around a tumour, or become taken over by an addictive drug. At the outset, my research focused on healthy volunteers, but I later went on to work with cancer patients and cocaine addicts as well.

ARE WE JUST OUR BRAINS?

As I think about the body in the dissection room, which used to be a living breathing woman, I can't help but ask, "What is it that makes me a person?" Many answers are offered today. The fashion and cosmetics industry says, "You are your body". The financial world might say, "You are your income". Politicians say, "You are your influence". The academy would say, "You are what you write". More recently, neuroscientists have started saying, "You are your brain". To understand a person is to understand their brain. To understand the brain is to understand the person.

What are we to make of this view? According to the "you are your brain" view, neuroscience can now speak to the fundamental question of human identity. For some, neuroscience has become the lens through which we make sense of all areas of life. Brain maps have been used to make marketing decisions, economic decisions, even legal decisions. Rather than asking someone's opinion, we scan their brain! Professor Raymond Tallis, a retired clinician and neuroscientist at Manchester University, has described this as "neuromania".³ Neuroscience has made astonishing discoveries that have advanced our understanding and our ability to diagnose and cure diseases. But have we also become obsessed with the possibility that it could answer every question we have?

WHERE DID THIS START?

Before we tackle the heart of the question, it can help to understand where this viewpoint has come from. At first impression, the belief that the brain accounts for everything appears new, as though it has been forced into being through the rise of neuroscience. However, this belief can be traced back to ancient Greece, and in particular to the

5th century BC. The physician Hippocrates (460-377 BC) is best known for his Hippocratic oath which can be summarised as *do no harm*, but he also studied and wrote on epilepsy. In his work *On the Sacred Disease* he commented (my emphasis added):

*Men ought to know that **from the brain, and from the brain only**, arise our pleasures, joys, laughter and jests, as well as our sorrows, pains, griefs and tears.*⁴

Hippocrates was making the point that epilepsy is not caused by demon possession, as was commonly thought at the time, but that it is a disease of the brain. Yet this phrase, *from the brain and the brain only*, has shaped a growing modern viewpoint that “mind equals brain” in every way.

This view has been expressed in academia in recent times through people such as Sir Colin Blakemore, Professor of Neuroscience at the University of Oxford, who in 1976 said:

*The human brain is a machine which alone accounts for all our actions, our most private thoughts, our beliefs. All our actions are the products of the activity of our brains.*⁵

And views espoused in the academy eventually filter into popular culture. The Disney animation *Inside Out* is one such example. The movie creatively depicts the complexity of the human brain *and* the importance of different emotions (Joy, Sadness, Anger, Fear and Disgust are all characters in the movie). Plasticity in the brain is depicted as the breaking and reforming of various “islands”. However, the narrative thread running through this movie is that everything that makes the protagonist, Riley, who she is, comes from physical mechanisms inside her head. When Riley’s

core memories and “islands” are intact, her outward behaviour is balanced. When they are not, the outside world falls apart. As the title suggests, there is only inside out. There is no outside in.

WHERE SHOULD WE START?

How should we begin to examine this question, “Am I just my brain?” A helpful starting point is to be open to the possibility that it cannot be answered by neuroscience alone. At first glance, this question appears to be scientific in nature, primarily because the question is raised by scientists and references a part of our anatomy. But in fact, “Am I just my brain?” asks a philosophical question about human identity. Neuroscience alone is unable to answer these kinds of questions. Neuroscience describes what is going on in the brain in beautiful detail, and is the obvious go-to discipline to answer questions like “What is a brain?” and “How does the brain work?” But the question “What is a person?” is very different. It reaches beyond the scientific method into philosophy, ethics and, many would argue, theology.

Human memory has many different components, one of which is your working memory—essentially the “notepad” in your head. Working memory is the part of your brain you use when trying to remember the shopping list you scribbled down earlier and then left at home. Imagine if a neuroscientist studying human working memory decided that they were only going to refer to results from functional MRI and ignore all other disciplines such as physiology, anatomy and pharmacology. Frankly, this would be poor scientific practice, leading to a diminished understanding of working memory. A good scientist uses all of the tools at their disposal and seeks to set their results within the wider

context of other disciplines. Similarly, to try to answer questions of human identity using neuroscience alone is to sell ourselves short. We need to reach beyond neuroscience to answer questions of identity. Neurons and brain chemicals alone will not get us there and will leave us with a diminished view of the human person. “Am I just my brain?” is not simply a scientific question but also a philosophical one, so our journey will traverse philosophical terrain as well as that of brain science.

At the heart of being a good scientist is the need to be open to new ideas and unexpected results. A common understanding of science involves things like setting a hypothesis, data collection and the interpretation of the data. The hypothesis is our theory of what we expect to observe. If the data fit the hypothesis, then we may be on to something. The next stage is to attempt to repeat the results. If we succeed several times, then the hypothesis begins to look as though it is correct. If, however, the data do not fit the hypothesis, we need to be open to the possibility that our hypothesis is wrong and needs revising.

Among scientists there is sometimes a temptation to “fudge” the data to make it fit the hypothesis. Yet, some forward leaps in science have come through unexpected results and the courageous revision of long-standing theories in the face of criticism. The need for an open mind is crucial to the success of a scientist. I want to invite you to apply the same open mind to the topics we are discussing in these pages.

ARE YOU OUT OF YOUR MIND?

So far, we have been discussing the brain—the mushroom-like structure between your ears, consisting of millions of interconnected neurons awash with chemicals,

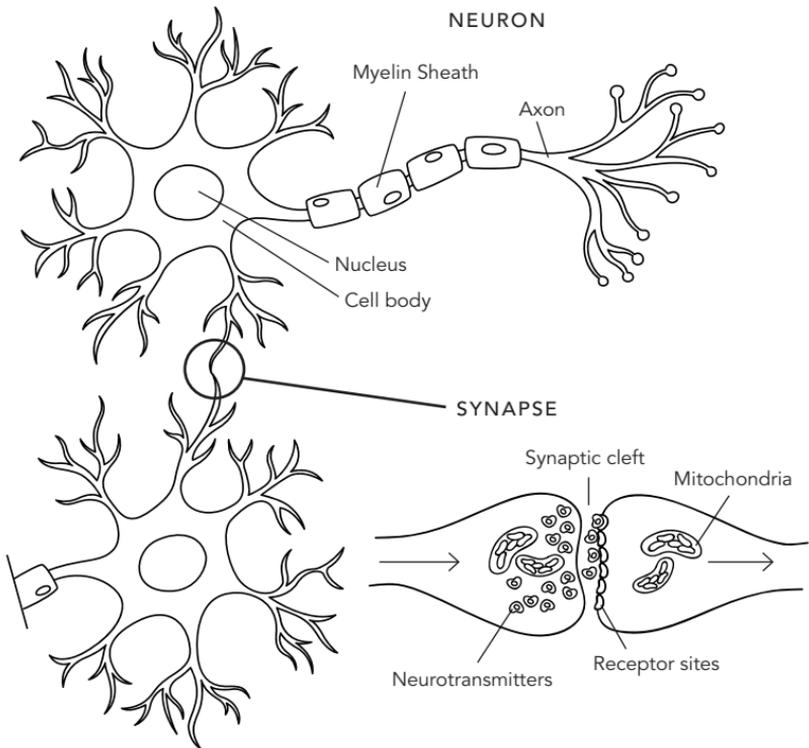
hormones and electrical activity. But we don't simply possess neurons, we also think thoughts. We seem to also have a mind. So what exactly is the mind?

The *Merriam Webster Medical Dictionary* defines "mind" as:

The element or complex of elements in an individual that feels, perceives, thinks, wills, and especially reasons.

NEURONS ARE THE BUILDING BLOCKS OF THE BRAIN

They join together at synapses.



The Oxford English Dictionary defines it as follows:

*The seat of awareness, thought, volition, feeling, and memory.*⁶

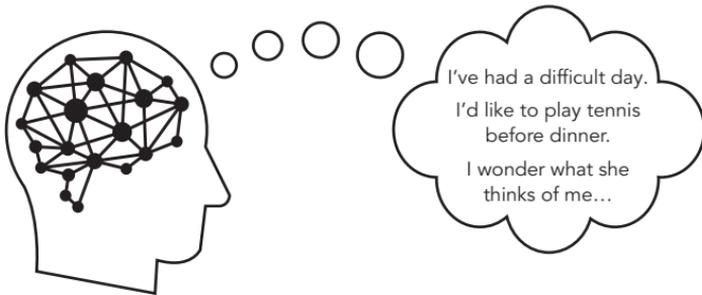
In other words, the mind is the bearer of the unseen, inner life of a person, in the form of thoughts, feelings, emotions and memories. When you select a playlist from your phone, recall a conversation from the day before, or experience a hurtful comment on social media, your mind is engaged.

What then is the connection between the brain and the mind, between neurons and thoughts, between synapses and sensations? How do you get from brain voltages to “I’d like to play tennis today?”

Mind and brain are clearly related. But how exactly? This, is the million-dollar question that lies at the heart of this book. This conundrum has occupied philosophers, ethicists and theologians for centuries. Many different answers have been offered to what is known as “the mind-brain problem”.

THE MIND-BRAIN RELATIONSHIP

How do we get from neurons to thoughts?



WHAT ARE THE OPTIONS?

One popular modern view, the view under scrutiny in this book, is that the mind *is* the brain. Mind and brain are identical. Thoughts, memories and emotions *are* the firing of neurons. No more. No less. This view is sometimes referred to as “reductive physicalism”. The mind is reducible (hence “reductive”) to the physical workings of the brain (hence “physicalism”). In other words, there isn’t really such a thing as the mind, but only the activity of the brain.

The voices that espouse this view are loud but are by no means the only ones in the choir. There are several alternative descriptions of the mind-brain relationship in circulation today that thinking people believe to be viable and persuasive. These views espouse a distinct mind that may interact with the brain but is certainly not at the mercy of it. In this book, I want to demonstrate that “you are your brain” is far from the only option available.

One alternative view is that the brain *generates* the mind. When the components of the brain combine and reach a certain level of complexity, they give rise to something new and distinct: the mind. This view is referred to as non-reductive physicalism (NRP). The mind arises from the *physical* brain (hence “physicalism”). But once formed, this new entity cannot be reduced back to its original components (hence “non-reductive”). But if those components are broken up, the new entity goes away.

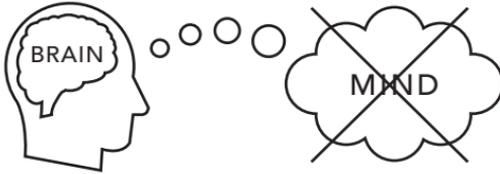
We might summarise this view as “The whole is greater than the sum of its parts”.^{* 7} According to this view, the

* Some philosophers define NRP differently, such as William Jaworski *Philosophy of Mind: A Comprehensive Introduction* (Wiley-Blackwell, 2011). Different scientific domains cannot be reduced to each other; for example, biology is not reducible to chemistry. However, according to this view, the building blocks of consciousness will always be non-conscious matter.

THE MIND-BRAIN PROBLEM: THREE OPTIONS

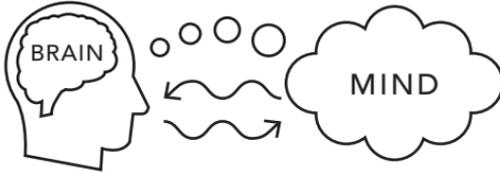
THE MIND *IS* THE BRAIN

Reductive Physicalism



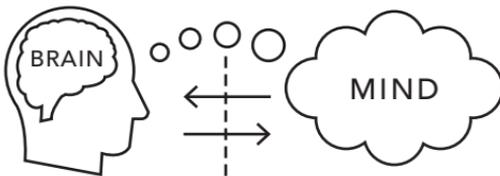
THE BRAIN *GENERATES* THE MIND

Non-Reductive Physicalism



THE MIND IS *BEYOND* THE BRAIN

Substance Dualism



mind is more than the brain but is inextricably bound to it. One obvious question raised by this view is this: *when the brain dies, what happens to the mind?*

A second alternative is that the mind *is beyond* the brain. Mind and brain are two distinct substances that interact but can also operate independently of each other. This view is known as “substance dualism” because two substances are involved in the mind-brain relationship: a physical brain and a non-physical mind.

A question raised by this view is this: *how exactly does a non-physical mind interact with a physical brain?* Especially since neuroscience shows a strong connection between the two.

In chapters 3 and 4, we will consider and critique these mind-brain descriptions and others, through the lens of consciousness. However, the scientific method alone will not be enough to help us in our quest; we need to look at the different beliefs that people bring to their science, and, in fact, to the whole of life. All people have beliefs, including scientists, but we need to understand the nature of those beliefs if we are to see how to synthesise a view of the world that has integrity.⁸ One way to test a belief is to ask the following three questions.⁹

1. Is it internally coherent?

Does “you are just your brain” make sense according to its own frames of reference? Is it a watertight position, or are there internal inconsistencies? Aristotle¹⁰ (c.384-322 BC) made the point that beliefs that only allow for physical things undermine the scientific method. The goal of a scientist is to make sense of the physical world. But if we are merely of the same composition as the world we study, then

how is it possible to make any form of objective claim? Is “you are just your brain” internally coherent? Not at all. It undermines the very discipline that its proponents practice and applaud: science itself. We will also see in the subsequent chapters that this view even calls the integrity of the human mind into question.

2. Does it have explanatory power?

Does “You are just your brain” explain the world around us? Does it make sense of the world we live in? If something is true, then it ought to help us make sense of the world rather than throw us into further confusion. Is this true of the view that a person *is* their brain? When I think of what it is that makes me who I am, neurons alone seem insufficient.

A large part of who I am comes from an unseen inner life consisting of thoughts, memories, emotions and decisions, none of which are captured by cell voltages, neurotransmitters and blood-flow changes. “You are just your brain” instinctively fails to explain the inner “me”.

3. Can it be lived?

Francis Schaeffer (1912-1984) founded l’Abri in 1955, a Christian community in the Swiss Alps, and a haven for those asking searching questions. One of Schaeffer’s convictions was that the extent to which a belief could be authentically lived out and lined up with our experience of life is a marker of its truthfulness.

And what is our experience? We live as though *we* do the thinking, not our brains. Neurons do not think: *people* think. We live all the time as if there is such a thing as a first-person perspective of the world.

Mindfulness, self-help, counselling, autobiographies,

child-abuse scandals, or indeed anything that requires introspection, all assume that the first-person vantage-point is real. We live as if there is far more to us than simply our brain.

If the answer to “Am I just my brain?” is, “no”, then what more is there to me? In the past, we commonly referred to the part that is essentially “me” as the soul. Is there such a thing as the soul and, if so, does it help us answer fundamental questions of human identity? Of course, some believe that the soul can now also be explained away by neuroscience; in other words, belief in the soul is out of date. Is this true? That’s the question we turn to now...