

introduction

The Unthinkable?

*...These our actors,
As I foretold you, were all spirits and
Are melted into air, into thin air:
And, like the baseless fabric of this vision,
The cloud-capped towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve,
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep.*

William Shakespeare, The Tempest, Act 4, Scene I

When I look in the mirror I see a head, inside which a story appears to be going on, apparently the story of me. This book is an attempt to pin down how this can come about. My hope is that I can reasonably expect my conclusions to apply to a story inside your head as well, although I may never be able to be sure of that.

Shakespeare's suggestion that we are no more than the stories our heads create for us has been familiar to philosophers over centuries, even if some recent philosophers might claim it to be new. What may be newer is a sense that, knowing so much about the machinery of life, we ought now to be able to understand how it is that our heads come with stories, and in particular, who, or what, is listening.

Any attempt to understand our inner realities requires some leaving behind of familiar beliefs about the way things work, some venturing into uncharted waters. The ultimate goal is to make the way the inside language of our brains describes the physical world match with a way for physics to describe that language, so that we can return home with one consistent

story. In a sense I have to build a story about stories. It may lack the narrative of Harry Potter or *The Tempest* but narrative is mostly a coat hanger for other things and I guess that people read stories as much as anything because they are interested in the way the writer reveals the same sort of inside story as theirs, or gives clues to the rules of how our inside stories unfold and interact. These things are very much what this book is about; in particular about a rule that I think we may have got wrong.

Modern science seems increasingly to agree with Shakespeare. There is little doubt that we *are* such stuff as dreams are made on, not just because we are narratives, but because we are illusions. That is not to say that we are delusions; we can still exist, in the sense that anything does, but much of what we think we are aware of turns out not to be what it seems. This much is widely agreed, but in order to see how the illusion works I suggest that we need to consider another idea, the theme of the book, which looks as if it may have been unfamiliar, or at least unapproachable, to all but one other person on the planet:

Each inside story has many listeners.

I am fairly sure that I am writing this for millions of separate, aware 'listeners' in your head, each one receiving a copy of your story, and its sense of identity, but completely unaware of the awareness of the others, each one a single nerve cell. This may sound like science fiction, and you can treat it as such if you like, but my path of enquiry over the last five years leads me to be fairly sure that each cell in your brain is aware separately and that that is *the only sort of awareness you have* (Edwards, 2005). The idea that we have a single experiencing soul was all a big mistake, even if it is central to the illusion that made *Homo sapiens* so successful.

Before getting readers too worried, however, I would point out that the question in the book's title is not to be taken too seriously. There is only one person in my head and one in yours, one in my wife Siân's head and one in my daughter Beth's. A person is the story that we get when all the cells in the brain work together in harmony. No one cell could create this story, nor could it make all the decisions we make. What it may

be able to do is listen to the story. I am suggesting that any living being that observes this page, sees the black ink on white paper and the patterns of the letters, may not be a whole person, but one of the many cells that makes up that person. This is not an easy idea. It is the most difficult idea I have ever come across. Nevertheless, it seems to explain things that nothing else can.

We have known for a very long time that our bodies are colonies of cells, although it was only about 100 years ago that the histologist Ramón y Cajal showed that brain cells, while nearly touching, are separate, not joined together (Ramón y Cajal, 1952). Every cell is in charge of the processes within it. Messages can pass from cell to cell, just as they can from me to you, through this typescript, and groups of cells can act together, as in the pull of a muscle, or in a rowing team, but each cell is a separate life packet.

The idea that each cellular life packet should have its own awareness is not new. It probably arose soon after cells were seen in early microscopes. Even before that, Leibniz had deduced in the seventeenth century that individual parts of us should have perceptions, because logic seemed to require it. Darwin thought that single protozoan cells like amoeba might be aware. The idea that each brain cell might be aware was, according to the father of psychology, William James, well known in the nineteenth century (James, 1890). A few people have toyed with it since. E. A. Liberman, a Russian information scientist, suggested in the 1980s reasons why brain cells could be aware, some of which are very similar to those I shall put forward, but it is not clear that he envisaged many cells being aware of the same things (Liberman and Minina, 1996). It seems that in the past it has been assumed that only one cell had the 'full story' of a person; what William James called a pontifical (Pope) cell. Only one other person that I can discover, Dr Steven Sevush, seems to have taken to heart the possibility that many cells listen to the full story and that there is no one central listener (Sevush, 2006). A dozen others may have done so but not had the opportunity to make their views known.

This book is about the reasons why we should consider seriously the possibility that our inside story has many listeners and why we should not be afraid to do so. It may lead into some unfamiliar places, and for some, perhaps many, people this book may remain as if closed, but for some at least I hope the view is worth the climb. That view does not seem to disturb the ordinary science of the brain. In fact it seems to make it much easier to make sense of. It does, however, put a different slant on who we think we are. Many would argue that the crowning glory of evolution is the emergence of a creature that can reflect on its own being. Maybe there is a step further to go, the ability to reflect on our own beings.

Scientific, historical and literary stories are in a sense just various ways of trying to illustrate the rules. It really depends on how you like the balance between reliability and inspiration in the search for insight. This book is scientific, in the sense of being my best shot at finding rules to explain the way things seem to be that should fit with past and future experiments. However, I hope that the mention of science will not put people off, because there will be no equations or arithmetic. The ideas are the sort of ideas that anybody may either see quite easily or not see at all, which may in itself be an important part of the story. Equally, I hope that scientific readers will not be put off by the everyday language, but I make no apology for this. Scientific jargon is usually designed as much to obscure as to enlighten. What I hope for most is that someone reading this will see through to layers of our inside storytelling that I cannot grasp. I suspect that he or she is more likely to be a teenager than a professor of philosophy or neuroscience burdened by preconceptions and the jargon that goes with them.

I admit that the idea in this book may be wrong, even if I cannot discover why. I thought at first that it might be easy to see why it is impossible, but nobody has been able to convince me why it should be. Moreover, one thing that seems fairly certain about the study of the mind, with its inside story, is that most people agree that up until now no other theory makes much sense. However our minds work, they are at least as strange as I am suggesting. There are lots of new ideas about but in my experience all of them can be taken to bits in five minutes.

There seems little doubt that the problem needs to be looked at from a completely different angle. There is something we are getting wrong.

Yet there are suggestions that the answer may not be far round the corner. This is not because of recent high tech brain scans with pretty colours. True, progress is being made, but most recent reports of research on how the brain organises the sights and sounds that make up our story seem fairly similar in principle to what I was taught by Colin Blakemore as a medical student in 1969. The sense that the answer may be near has more to do with people being prepared to admit we have been on the wrong track and to try new lines of attack.

In 1995 the philosopher David Chalmers wrote an essay called *Facing Up to the Problem of Consciousness* (Chalmers, 1995), which spelled out in simple language just how hard the problems of understanding our inner selves are. A few people already knew this well, but Chalmers made a lot more people interested enough to stop and think. Although Chalmers had his own suggestions for a solution the impact of the article for me was not 'this is the way home folks', but what is sometimes much more useful; 'isn't it time we admit we might not know where we are going and get the compass out'. It was finding that essay on the Internet that whetted my appetite again for a problem against which I had battled as a schoolboy, and admitted defeat.

Another prompt came from Roger Penrose who, in his book *Shadows of the Mind* (Penrose, 1994), pointed out that it is not good enough to say that our minds are just natural computers and that thinking is just something that happens when electric signals buzz back and forward. He suggested some new approaches relating to modern physics. Penrose knew he had not got the final answer, and like many I think he shot wide of the mark, but he and Chalmers were part of a mood of trying new ideas. If our attempts to understand our minds have got so badly stuck it is reasonable to try any approach, however lunatic it may sound, because, if nothing more, it might show where we are going wrong. It was reading a comment on page 372 of *Shadows of the Mind* that made me think I should pursue seriously the idea in this book. Even if I am wrong, I might rea-

sonably hope that if someone can show why there *cannot* be millions of separately aware cells in our heads, we will have moved closer to knowing what and where 'I' really am, if I am in any place at all.

I have debated the issue with scores of people, from neighbours to the most eminent philosophers and scientists. Most find my idea peculiar, and many cannot accept it, although at least some see the logic behind it. The idea is certainly unsettling. The implications for those who like to hold to beliefs may be truly terrifying. At times I have seen something like a mixture of anger and panic in theists' (and therapists') eyes. Religions that could cope with Darwinism with a little adjustment would probably have to pack up and go home if it proves true. For the open mind, I like to think the idea will not seem too awful. The more I get used to it, the more it seems rather amusing, and perhaps reassuring.

However things develop, I like to think the power of scientific debate might reveal the answer even if such debate has been under threat in recent years. One of the things that made me take a detour into study of the brain was the claim by an eminent immunological colleague that scientific debate simply does not exist, almost as if he preferred it that way. In the twenty first century the Internet has provided a more egalitarian medium in which people can communicate without feeling hemmed in by establishment forces and the 'received wisdom'. The debate is happening and it can take us where we want to go, as long as we keep our feet on the ground.

Perhaps now, more than any time in history, with an eerie alliance of pseudo-democracy and Abrahamic religions presiding over unnecessary war and the destruction of the natural world, we need to know what goes on in our heads. I have not written this story to prove an academic point, or even to be deliberately perverse or mystical. It just seems to make sense, and to be worth sharing. I would also like to think that it might in some way help us to know where to look for the answers to questions like who we are, what we should value, what we should hope for, and how to help our children avoid our mistakes.