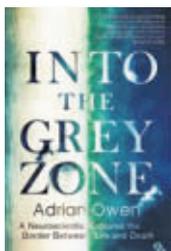


Hello, is there anybody in there?

Book of the week

The astonishing story of a neuroscientist who discovered how to make contact with people thought to be ‘vegetables’ grips Helen Rumbelow



Into the Grey Zone
A Neuroscientist Explores the Border Between Life and Death
by Adrian Owen

Guardian Faber,
320pp; £16.99

You can't move. You can't control any part of your body, not even your eyelids and eyeballs. You are declared by the medical establishment to be in a vegetative state, or a "vegetable" to use the cruel term hated by your loved ones, but even they don't show up as much any more. Why bother? You're not "there". As you are parked in the corner of a care home, the conversation moves on to whether to withdraw medical support, perhaps even food, so you can die more quickly. And all the while you can see and hear everything. You are still there. Trapped inside, you try to scream. Your scream is silent.

It's a horror movie script, but it gets worse. One woman, who was conscious the whole time she was apparently a "vegetable", was played a Céline Dion album on repeat for months. It was what her mother thought she liked. She was one of the few to recover from this state, and her first words to her mother were: "If I ever hear that Céline Dion album again I will kill you."

We can't blame the medical profession for ignoring these people, right down to

their musical tastes, although to play *My Heart Will Go On* in a loop was, in hindsight, not the most tactful choice. Adrian Owen, a leading British neuroscientist, writes that the subjects of his book *Into the Grey Zone* were "assumed to have no more awareness than a head of broccoli". They are not in a coma; we have, since the ancient Greeks, understood when people are in an unwakeable sleep. They are also not "locked in", a way of describing people who are conscious yet can move only their eyes, which they use to communicate.

Instead these people are diagnosed as being in a vegetative state, their consciousness gone, typically caused by some devastating traffic accident or virus. They may have their eyes open, they may grunt and drool, but everything physical is involuntary. Until Owen and his groundbreaking research at the Cognition and Brain Sciences Unit in Cambridge they were assumed to be "like zombies... devoid of thoughts or feelings". They were the embodiments of a philosophical problem: if they can't communicate that they are human, are they really human at all?

That is what Owen set off to find out. The title of this scientific memoir frames it like an expedition, with Owen a fearless explorer into the unknown "grey zone". Locking the patient in the cylindrical scanner is like sending a diving bell to those unexplored, pitch-black parts of the ocean, where no life was thought sustainable. Then, suddenly, looming out of the murk, a sign. When Owen uses his ingenious brain-scanning experiments to make contact with a supposed

"vegetable" for the first time in history, the shock almost made me drop my book.

This was Kate, a 26-year-old nursery teacher from Cambridge who had been brain-damaged by a virus. She woke up from her coma to find herself, as she puts it, "in prison". She had her eyes open, but doctors could detect "no signs of inner life". Doctors told her family the bad news. Kate was vegetative, completely unaware of who and where she was.

Unbeknown to anyone, this was untrue. Kate was totally aware, and once she had realised her fate, an existential torture, she tried to kill herself by holding her breath. This is, as Owen coolly writes, "an all too common strategy for conscious people in the grey zone". Their situation is the modern equivalent of being accidentally buried alive, clawing fruitlessly at the walls of a coffin. Except they are buried alive in their own bodies, and contemporary medicine had absolutely no idea.

Before we get into how Owen managed to reach Kate, can I just go back and add to my description of this book as a horror story. It is not quite. *Into the Grey Zone* is also a love story. It is probably one of the strangest love stories you'll ever read. Driving both this book and Owen's career is his first love, Maureen.

In the first chapter, *The Ghost that Haunts Me*, Owen talks about how he and Maureen fell in love when they were both young neuropsychologists. After living and planning their lives together, they began to clash. Maureen shifted careers into psychiatric nursing; she wanted to care. Owen thought



she was throwing away her brilliant mind on individual cases, she would never change the world. They split and Owen was heartbroken. Shortly afterwards, Maureen had an out-of-the-blue brain aneurysm. She was declared non-responsive, in a vegetative state. She had been so close to him, now she was so far away.

This explains, writes Owen, why, in 1997, the very next year, he declared that he was going to put Kate in the brain scanner. Colleagues thought him bonkers. The idea, even he knew, was “outlandish”. Yet Maureen haunted him. Something “dark and strange”, something “unresolved in our embattled relationship had been driving me”. So, in the scanner he showed Kate photos of her family, and those of strangers’ faces. Her brain crackled into life at the sight of her

loved ones. The medical world was stunned. “We’d made first contact,” writes Owen, “changed each other’s lives”. Years later Kate would recover and say of Owen that he “found” her. “It was like magic.”

Owen’s line of research shows that as many as a fifth of people thought to be vegetative are conscious. The NHS does not keep statistics on the numbers, but some estimates put this at hundreds of patients in the UK. In America Owen suggests there could be thousands. Yet how to go farther, and communicate with them? Sitting on the very English setting of a Cambridge lawn, Owen has a very English idea: “What about tennis?” Owen established that when we think of playing tennis the part of the brain for arm movement can be seen to be activated on the scanner. When we think of walking through a house we activate the brain’s spatial mapping region.

Eureka! He had a way of having a two-way conversation. In the first question-and-answer session he had with a “grey zone” man he used the technique “imagine playing tennis for yes, imagine moving around your house for no”. The answers came back clear as a bell. The brain zones lighting up in quick succession on the MRI scanner’s screen was like semaphore. It was a “haunting reminder of the resiliency of consciousness”, Owen writes, “the meaning of what it means to be alive, and whether anyone can be said to be irretrievably lost.”

Finally they could interact with “intact minds adrift deep within damaged bodies and brains”. At the end of that first conversation, their final question was: “Do you want to die?” It was the only answer about

which the patient was unclear. Owen wonders whether this might have been an attempt at “it depends”. Yet, that patient aside, one “unexpected” yet comforting finding is that generally such patients do want to live. Full recovery is rare. But “contact”, Owen speculates, may make it more likely.

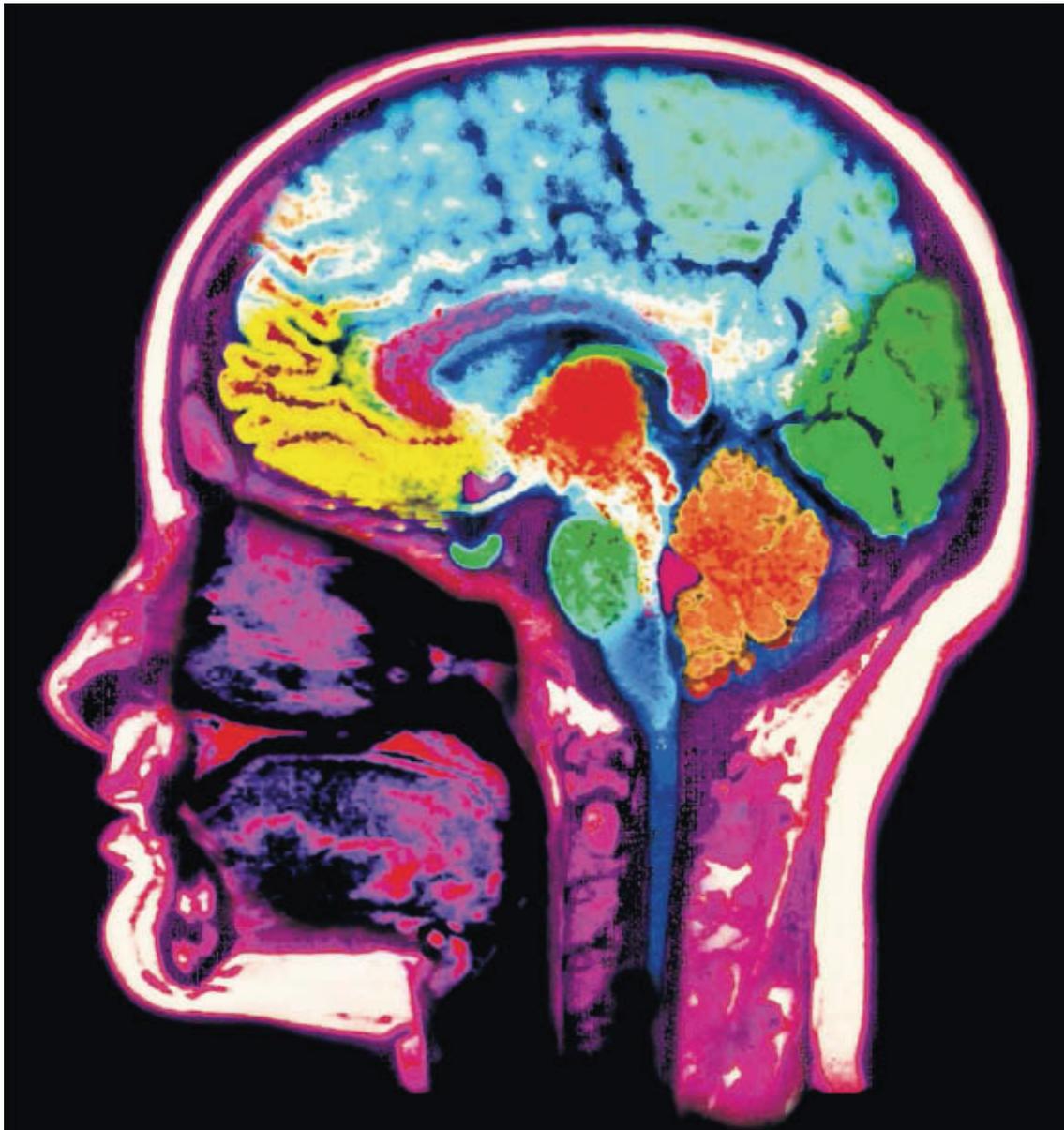
Owen was lured to Canada, where his lab continues to push at what consciousness means. Is it being able to enjoy a Hitchcock film? They showed vegetative patients one of Hitchcock’s TV shorts, *Bang! You’re Dead*, and if their brain showed the same thrills at the same spots as healthy volunteers, then yes, I think we would all agree they were there.

Owen has also tried to make scanning as accessible as possible. His team devised a portable machine to visit patients in their homes, and put it in a Jeep. His unrealised ambition is to give people “day-to-day communication”. Owen asked a friend to design a logo for the side of the Jeep, with a cartoon brain on the side. “What is THAT?” people would say as they rode by, like a scene out of *Ghostbusters*. In a way, a ghostbuster is what he is.

I loved this book. It is science as an act of adventure, and also rescue. Owen is intrepid, and vulnerable. It never feels less than miraculous when he pulls a fellow human out of the dark. He never personally scanned Maureen, but others have, using techniques that he developed. He describes staring into the brain scans of his former beloved, wishing and wanting. So far the tests have garnered no response. She doesn’t have to be communicating, though, to win an argument. Owen can imagine her, he writes in the last page of his book, saying: “I told you so... You see, it is about caring.”

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Source: The Times {Saturday Review}
Edition:
Country: UK
Date: Saturday 26, August 2017
Page: 11
Area: 769 sq. cm
Circulation: ABC 450064 Daily
Ad data: page rate £16,645.00, scc rate £75.00
Phone: 020 7782 5000
Keyword: Into the Grey Zone



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Adrian Owen used his own brain-scanning experiments to communicate with a supposed “vegetable” for the first time in history