

Note: This piece is derived from an exercise I wrote for my undergraduate students at the University of Sheffield in the mid-1990s. All the characters are purely fictional, though some of them express views eerily similar to those of real philosophers. Version of 19/11/22.

The Brain Repair Experiment

Keith Frankish

It is the year 2040. You are lying in a hospital bed in the neurology ward. The doctor is looking worried.

‘I have bad news, I’m afraid,’ she says. ‘You are suffering from a severe neurodegenerative disease, which is gradually destroying your mental faculties.’

You gasp. ‘Is there no cure, doctor?’

‘Not a conventional one. But there is hope. We can offer you the chance to be an experimental subject in tests of the latest *artificial neural replacement technology*. We would scan the affected areas of your brain, then build silicon replicas of them, accurate to the last neuron and synapse. Then we would cut out the diseased parts of your brain and splice the replicas to the healthy tissue. You would have to remain conscious throughout the operation, so that we could check that the new circuits were working properly, but since there are no pain receptors in the brain, you wouldn’t feel anything.’

‘And that would get rid of the disease and repair the damage it’s done?’

‘We are confident that it would. However, the Ethics Committee were a bit worried. They insisted that we consult philosophers of mind before proceeding with the experiments, and that we tell patients what the philosophers said.’

‘Philosophers?’

‘Yes. It seems a silly idea to me too, but you know what committees are like! So we set up a meeting with some leading philosophers of mind and canvassed their opinions. Shall I tell you what they said?’

‘I guess you’d better.’

‘Well, then, the first to speak was a man who seemed to have come dressed as Guy Fawkes. He had long hair, a moustache, and a big nose. He was worried about the procedure. He said we might accidentally damage the pathways by which your soul communicates with your brain. If that happened, he said, you would lose all your higher mental faculties. You’d be unable to talk or reason and would show no more intelligence than a dog.’

You are shocked. ‘A dog? That doesn’t sound good.’

‘I know, but don’t be too alarmed. I think he was a crank. When he’d finished, there was silence in the room, and everyone looked uncomfortable.

‘Then a handsome young man in a leather jacket spoke up. He had long hair and looked as if he should be playing at a rock concert. “Hey, go easy on him,” he said. “He’s not completely wrong. Consciousness is a nonphysical feature of the brain. However, there’s every reason to think that a functional duplicate of

a human brain, which performed all the same information-processing operations, would possess it, too. That seems to be how nature operates. So I think your procedure should be safe—provided you do a thorough job with the silicon replicas.”

‘Several people nodded. The consensus seemed to be that, provided our neural replacements performed exactly the same functions as the bits we cut out, everything would be fine. Some people said that the diseased brains cells would have been engaged in some sort of information processing, like a computer program, and that all we really needed to do was to plug in a tiny general-purpose computer, programmed to perform the same calculations. They said they were sure that consciousness just depended on getting the numbers right. Others were a bit more sceptical about this and said we ought to make the replica exact just in case. But they said they were sure that silicon could support consciousness just as effectively as brain tissue.

‘Then a small man leapt up. He seemed very sure of himself and had a trenchant way of talking. “Look,” he said, “all that stuff about souls is baloney. So is the stuff about consciousness not being physical. But the soul guy over there is right about the danger. Consciousness isn’t just information processing. It depends on certain biological properties of neural tissue. Computer chips, or connectionist doohickies, or whatever you’re going to put in there won’t have those properties, and when you cut out the brain tissue, you’ll cut off your patient’s consciousness. So it’s worse than the soul guy suspects. Your little gizmos may take over all your patient’s normal bodily functions, so that they keep on talking and walking and behaving just as normal, but inside there will be no consciousness. They will be a *zombie*. Oh, they will say they are fine, but they won’t be conscious anymore. In fact, it might be even worse than this. You might leave their consciousness intact but cut off its channel of communication. What a nightmare! Your patient would behave perfectly normally, thanks to the implants, but in fact their conscious self would be locked away inside silently screaming, listening to their own computer-controlled voice telling you how grateful they are for the operation.

‘At this, a tall, jovial-looking fellow with a beard broke out laughing. “Nonsense!” he said. “Nonsense on stilts! Not that you shouldn’t be careful, mind. What you must do is run lots and lots of psychological tests while you’re performing the operation. Check your patient’s perceptual abilities, linguistic abilities, reasoning skills, motor skills, emotional responses, aesthetic preferences—everything! Check that they still don’t like the taste of cauliflower, that the smell of blackberries still reminds them of their grandmother’s garden, that they still shiver when they listen to Schubert’s *Erlkönig*. Do the replace-

ment piecemeal, in very small steps, and keep checking all the time. If you notice any change in the patient's responses, stop! But if they pass all the tests, then you can be confident the operation's been a success. Oh, and don't worry too much about making the replacement a precise functional duplicate of the original; you might be able to cook up something that works better. Concentrate on maintaining the patient's performance on those psychological tests. You take care of your patient's test scores and let their consciousness take care of itself. Good luck!"

"There were various other opinions, but most people basically agreed with one or other of the people who'd spoken so far.

'So, what would you like to do? Shall we try it, or would you prefer to wait and hope we find a cure? It's up to you.'

You opt to have the operation. All goes well. Later, you meet the philosopher who thought it would turn you into a zombie. You tell him his fears were unfounded: you're just fine. He smiles sceptically and shakes his head.