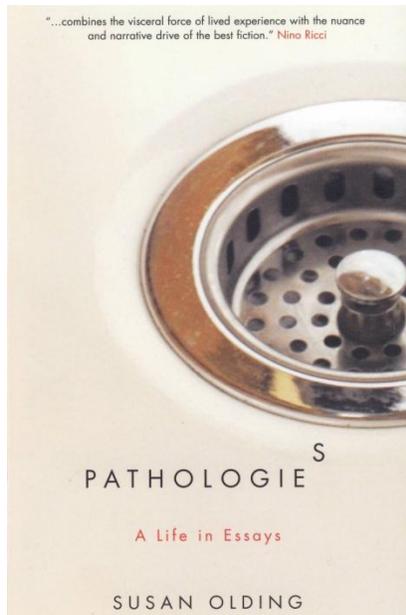


Book “Pathologies – A Life in Essays” by Susan Olding (2008)



Mind Reader

In the nineteenth century, if you wanted to understand yourself better, you went to a phrenologist and had your head examined. Phrenologists argued that each human faculty corresponded to a particular “organ” of the brain and that the shape and size of these organs suggested their relative power. They massaged their subjects’ skulls, feeling for the bumps, and then massaged their egos, telling them about their characters. Queen Victoria believed in phrenology; so did Whitman and Dickens and Charlotte Bronte and George Eliot. Ambrose Bierce did not. He called it “the science of picking the pocket through the scalp. It consists in locating and exploiting the organ that one is a dupe with.”

Today, if you want your head or, more likely, somebody else’s head examined, you go to a psychoneurophysiologist. I went to one not long ago. Desperate, determined, undeterred by cost or lack of insurance coverage, undismayed by the doubts of conventional physicians, undaunted by the practitioner’s Dickensian-sounding name, I switched off my cell phone at the threshold of Dr. Swingle’s office and carried my daughter across.

Cell phones interfere with the equipment. Unlike phrenologists, psychoneurophysiologists put faith in technology, so for contemporary patients the grip of bare fingers has given way to the tickle of electrodes – metal discs shaped like the suction cups on the ends of plastic darts. But we didn’t see those right away. I saw a wall of books and four or five computers. Maia saw three large swivel chairs. She dove for the biggest of these, the one behind Dr. Swingle’s desk, and began to spin. He regarded her calmly. I sat down in one of the other chairs and stared out the windows at the North Shore mountains. Coffee sloshed out of my cup onto the doctor’s rug. He didn’t flinch. Grey-bearded, grey-eyed, and bespectacled, his countenance wouldn’t have seemed out of place in a Victorian parlour.

I gave him her medical and developmental history – the long litany of concerns that had brought us to his door – but Dr. Swingle waved the papers aside without even looking at them. Instead, he

ushered Maia toward a computer screen on the other side of the room and told her to put her feet on the stool below. Then he fixed a couple of delicate wires to her ears with tiny alligator clips. “Ouch,” he said. “I am not going to wear earrings when I grow up.”

An electroencephalograph measures and tracks electrical activity in the brain. The five electrodes that Dr. Swingle now placed at different places on Maia’s skull – swabbing them first with a conductive gel that she said felt cold – would transform the electrical activity inside her head into patterns, called brainwaves. “Watch the screen,” he instructed her. “Stay perfectly still, and watch the bars.”

Moving to the computer next to hers, he pushed a button. On his monitor, columns of numbers appeared; on hers, rectangles of red, blue, and yellow danced erratically, like the keys of a player piano. The blue bar predominated. After a few minutes he adjusted one of the electrodes and started a new test; the coloured bars moved differently this time, more red than blue. “Nice and still,” he repeated. “Now I need you to close your eyes. Okay. You can open them again. You’re doing well.”

The brainwaves have names like fraternities – theta, alpha, beta, delta, gamma – and, like frat boys, they squabble for supremacy. Delta is a very slow wave, up to four Hz, seen most commonly in deep sleep and very young children. Theta waves are associated with reverie and *déjà vu*; it is normal for them to increase during adolescence. Alpha waves, at 8.5 to 12 Hz, are characteristic of a relaxed, alert state of consciousness, while beta waves increase during periods of active or anxious thinking.

Something on the shelf above her head caught Maia’s eye. “Is it just me,” she said, “Or is that a real *skull*?” I came over to take a closer look. The jaw was ordinary bone-colour. The top was painted grey and sectioned off with white lines, then over-painted in bright primary hues like the ones on her computer monitor. “Eew,” she squealed. “It *is* real, isn’t it?” Dr. Swingle moved the electrodes again. “Mum,” Maia moaned. “It’s *looking* at me.”

The electroencephalograph is generally accepted as a useful tool in the diagnosis of brain injury, stroke, and epilepsy. Whether it has wider application to the diagnosis of so-called “soft” neurological problems and psychological or behavioural disorders is more controversial. But according to neuropsychologists like Dr. Swingle, anomalous patterns of activity in the different regions of the brain correspond with specific mental, emotional, or learning disorders. Every brainwave pattern paints a particular picture and every picture tells a story. Too much theta in relation to beta in the frontal lobes often signals ADHD. Fast alpha frequencies go along with anxiety and hyper-vigilance. Low-voltage slow activity correlates to dementia; alpha asymmetry in the frontal regions indicates depression. Neuropsychologists also believe they can treat these

problems with neurotherapy, a kind of biofeedback for the brain – but this remains an alternative approach.

Maia sighed. Dr. Swingle fiddled with his dials. I looked around. Besides the skull, the shelf supported an odd assortment of objects, including a robotic car, a soapstone sculpture of fish, a globe, and a monkey-like mask. On the wall hung some professional degrees, along with several drawings of the brain – among them, I was startled to notice, a nineteenth-century etching taken from a phrenology text. The doctor apparently has a sense of humour.

A wiggle break and a few more rounds. Then Dr. Swingle sent Maia to the “treasure chest” in the waiting room. He stared at the printout in his hand. “Here,” he said, and he pointed to an outline of the brain, “These numbers imply trauma.” He shrugged, palms up, waiting for my response. I nodded. “And here, he continued, “too much theta. This is the hyperactivity people associate with ADHD. But it’s minor. In the ballpark I play in, she barely makes the field.” There was more. Extreme stubbornness. A tendency to perseverate. Lapses of short-term memory, attachment disorder, inability to read social cues, emotional reactivity, tantrums, explosions. One by one he read the ratios, divining my daughter more quickly, more accurately than any professional I’d yet encountered.

She came back into the room. “I got a rock,” she announced.

Dr. Swingle picked it up and held it to the light. “Ah,” he said. “Chalcedony. An agate. Soothes the mind and promotes balance. Alleviates hostilities, quiets thunder and lightning.” He handed it back to Maia. “You’d best hang on to that.”