

PANORAMA *Upfront*

Genius at work: A lobe out of loop

The presiding elf in the Centre for the Mind tells **Phillip Coggan** about some remarkable and mysterious phenomena

HERE'S a little gnome inside my head. He's got a little hammer and he's belting it against the inside of my skull, *poock poock poock*. Perhaps he's prospecting for gold. Good luck to him.

"OK," says a voice. "Open your eyes."

The little gnome packs his pick and goes away and I'm sitting in a windowless room in the basement of Sydney University.

This is the laboratory of the Centre for the Mind, of which the presiding spirit is Professor Allan Snyder. He looks exactly like Harry Potter, with a dash of Woody Allen and just a pinch of Gandalf.

The gnome-like feeling was the effect of a special machine designed to knock out my left frontal temporal lobe, which is a part of my brain I never knew I possessed but rather suspect I should keep. It shoots a magnetic pulse into the brain, which, well, knocks out the left frontal temporal lobe. Temporarily.

"Now we'll have the test."

A series of little messages flashes on a computer screen. I have to read them out loud. "A stitch in time saves nine." "All that glitters is not gold." Etc? "Of birds a flock together feathers." Sure, sure.

Professor Snyder is pleased. I've done the reading quickly and accurately. The machine works, my lobe is out of the loop, and I've lost touch with my paradigms.

Next we do drawings. Pre-gnome, I was shown some portraits on a computer and asked to make drawings. Now I'm shown the portraits again. This time my drawings are different — maybe not better, but definitely operating from a different schema. I'm far more conscious of individual features, and take time to make a meticulous attempt at the African lady's lips and nose which on my first attempt had been sub-cartoon-like. Snyder is even more pleased.

"How did you feel during the test?" I take a tiny bit of calm. "Far more so than normal. I also felt far more conscious of detail." "Excellent," says the professor.

So what's all this about? The machine is trying to replicate the thought processes of the autistic brain. Autism is a terrible disability that strikes one in 10,000 people. You wouldn't wish autism on any-

one. Yet occasionally, very, very occasionally, an autistic individual will display amazing, even super-human, abilities. One in 10 displays these abilities to some degree. And a tiny handful, perhaps a few hundred in the world, displays them to a degree that would, had they appeared in a normal individual, be taken for genius.

These are the ones who play piano concerto by ear after hearing them once, who produce minutely detailed and accurate drawings of scenes they've seen only once, and can tell you instantly what day of the week the September 15 fell on in the year of the Norman Conquest. The technical term, in Professor Snyder's world, is "savants", and he wants to know how they do it.

"He's a Rosetta Stone," says Snyder. He's talking about Daniel Tammet, who has calculated pi mentally to 22,514 decimal places, speaks seven languages and has invented one of his own, and enjoys reading dictionaries.

He can't drive a car or tell left from right, and doesn't like going to the beach because there are too many pebbles to count. "Too many" in the sense that the number is effectively infinite. Daniel doesn't like problems that have no solution.

But what makes Daniel rarer than rare is that he can describe his thought processes. Here's Daniel describing how he multiplies 377 by 795: "When I multiply numbers together, I see two shapes. The image starts to change and evolve, and a third shape emerges. That's the answer." There, does that help?

We walk back from the basement laboratory to Snyder's office overlooking the quadrangle of the university. On the walls are some extraordinary drawings, horses which look as if they might be by Leonardo da Vinci. They have the same expressive use of volume and the same decisive use of line. But they were done by a four-year-old autistic girl. A girl who had not, at that point, yet learned to speak.

When I was at school I was told that I should try to increase my vocabulary, because I couldn't think thoughts that couldn't be put in words. According to the conventional wisdom as expressed by my teachers, this child can't even think. But she can draw. Oh my, can she draw!

So how, exactly, do we do that?



Snyder believes we all possess these extraordinary abilities, but are unable to access them because our paradigms get in the way. Paradigms are simply mental scenarios, based on experience, that help us recognise and order our sense impressions.

"Autistic individuals lack paradigms," explains Snyder. "Every horse they see is the first horse they've ever seen. So when they draw a horse they draw what they really see, not what their minds tell them they ought to see."

Paradigms are essential for everyday life: the mind has to be able to recognise a charging lion or oncoming bus instantly, without stopping to consider.

For most of us, the task of

recognising lions and buses is assigned to the unconscious mind. For the autistic individual, navigating the daily ocean of sense impressions remains a painfully conscious process. And Snyder believes he has found the part of our brains where the paradigms are stored: the left frontal temporal lobe.

Autistic savants are not geniuses, and are not creative, any more than a photocopying machine is creative. But there is a connection between their abilities and those of "normal" creative geniuses, for they both see the world without mental templates.

Leonardo da Vinci, in his writings, advises studying stains on walls as an exercise for artists to break the paradigms and gain access to the

back rooms of the mind.

Donald Friend, who by coincidence is the subject of an exhibition in the Sydney University gallery at the time I'm interviewing Snyder, did something surprisingly similar, covering his paper with random colour washes before starting to draw. Snyder believes that creativity consists entirely in this ability to "connect the dots" in new and original ways. "So if we could just temporarily see the world the way it really is, you have a chance to be original."

At the other extreme from the autistic savant are the individuals Snyder calls the champions. Fittingly, our talk about champions takes place not in the claustrophobic



STUDENT OF GENIUS: Professor Allan Snyder at his ANU office. He is researching genius. Picture: Lannon Barley

underground laboratory at Sydney University, but in Snyder's alternative office at the ANU in Canberra, in a large and airy room looking over lawns and gardens and the placid expanse of Lake Burley Griffin towards the distant Brindabellas.

The conversation has ranged over Oliver Sacks and Nelson Mandela, Richard Butler and Rupert Murdoch, and now we're touching on Phil Adams. "Phillip seems so laid-back when you hear him on *Late Night Live*, but in fact he's quite a provocateur," Snyder is saying. It's all about championship. What makes a champion? What is a champion?

On one long wall behind us is a large blackboard. Until a few weeks ago it was hidden behind a giant potted avocado tree. Avocado trees don't make ideal pot plants.

"While I was away they came and pruned it right back," Snyder says. "Nearly killed it. It's next door now."

Taking up two-thirds of the newly revealed blackboard is a series of chalk drawings. They look as if they were done by a child. They were done a child—Snyder's 13-year-old son. One drawing is a line from the age of five. They begin with pirate ships, progress to bikes, and finish

with girls. The growth of a mind. But a normal mind, with normal childish schematic cartoons of ships, bikes and girls, not the vividly unique, individual records of the autistic savant.

Champions are those who excel, those who become leaders. By definition, champions are rare. As rare as savants? Yet Snyder says championship can be taught. In 2001, in the shadows of the Sydney Olympics, he organised a groundbreaking conference on "What Makes a Champion" at Sydney University. (The alternative title was "Olympics of the Mind").



The participants were a Who's Who of 50 outstanding individuals from every field of human endeavour, including ex-PM Malcolm Fraser, pianist and composer Roger Woodward, adventurer Tim McCartney-Snape, and former Olympian John Korrads.

"What makes a champion?" asks Snyder. "Answer this question, and we will have captured the crucial ingredient which lets the human spirit soar."

But there are champions and there are champions. Bob Hawke was Australia's champion beer-drinker. There must have been something in Bob Hawke that drove him to chase this dubious title, but something also in Australian culture that fostered the tribal avianity. Australia, as much as Bob Hawke, made a champion beer-drinker. Some cultures actively discourage championship — "the nail that sticks up will be pounded down", the Japanese saying goes. The Australian equivalent would be the tall-poppy syndrome. Yet Japan is not short of real champions — Akio Morita, founder of Sony, was not a trivial man. To each culture its champions.

So, what makes a champion?

"Einstein had a pretty undistinguished academic career," Snyder tells me. "We've been discussing the academic life, and I gather that he has little patience with ivory towers, and little respect for expertise as an end in itself. Menna, says Snyder, is full of people with high IQs and low achievements, and there's no correlation between the two."

"Einstein struggled with a doctorate. Then he went to work in a patent

office and turned science upside-down." "Champions work outside the circle. They shatter preconceptions, because they have *now* themselves."

"Or take Richard Branson." Sir Richard was awarded the Centre for the Mind's Distinguished Fellow Medal in 2002.

"The man is driven. Driven by curiosity, by the need to set goals and shatter them. And for all the high-achievers I've studied, that's the common theme. They have an abhorrence of being ordinary."

"What makes a champion is, fundamentally, a champion mindset. Curiosity, self-belief, willpower, are all part of the champion mindset. It's the mindset that counts."

But surely, I ask, we can't all be champions — or would't the world be like Lake Wobegone, where the children are all above average?

"You're confusing achievement with winning races," says Snyder. Snyder believes that the champion mindset is available to all of us. Children need to learn to believe in themselves, to identify their own unique abilities and to develop the self-confidence to set goals and act towards achieving them.

"Any kid can be a champion." The crucial age is from 8 to 11, while the personality is still malleable. (Good news, but probably a bit late for me.)

From the crippled autistic mind to the mind of the genius and the champion, humans are infinitely mysterious. Allan Snyder, gnome, elf, and wizard, is chipping away at the darkness on the final frontier.