Sunday Morning Post agaZ111e

brain teaser

Can a machine really make you smarter?

C 0 N T E N T S



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for information

for information overload, the human brain could do with an upgrade. Belgium's Alphalearning Institute might have found the answer with a machine that can cure everything from brain damage to a poor golf handicap.



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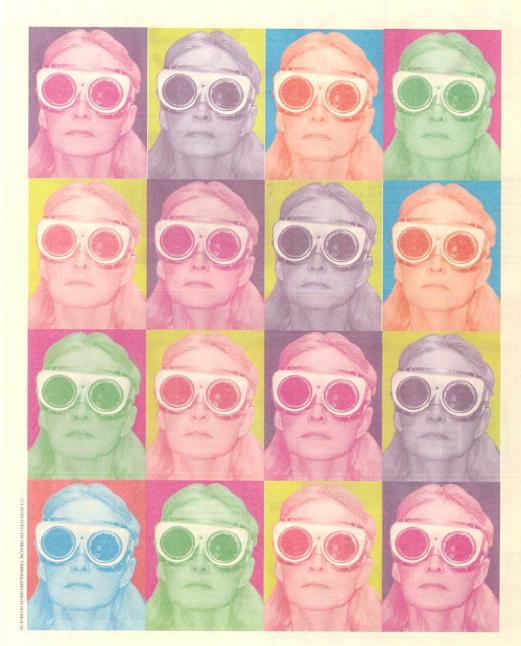
INSPIRATION

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With the modern world heading for information overload, the human brain could do with an upgrade. Belgium's Alphalearning Institute might have found the answer with a machine claimed to cure everything from brain damage to dyslexia and golf handicaps. JULES MARSHALL reports.

JUST outside Maastricht's walled city centre, by the flywer under which the local skatepunks clatter about, is the nondescript mixed residential and office block where the Alphalearning Institute currently has its home. It's nothing special — though round the back the communal garden offers a nice view of the river and the city's famous conference centre.

In the Institute's Small Business Unit, however, something very special is going on. Special, incredible, revolutionary — scary even. And, in the words of its research director. Sean Adam: 'Pretty bloody awesome.'

Kris has spent her seven years in a wheelchair, after oxygen deprivation at birth left her with a cortex "incurably shattered into islands of use", as the neurologist told her parents, Jan and Karin, Kris 10 minutes into her first 12-minute session on the Lotus Brainware I machine when she lets out a strange wail. It's eetic rather than chillings not, you feel, one of pain so much as of anguished release. For 30 seconds, her tiny crooked back spasmodically arches out of her twheelchair and she howls.

"Bang on time" whoops Adam when she eventually relaxes. It old you the shit would hit the fan when she hit the green line."

All seven of us in the stuffy room look at one another, then at Kris, then back at each other. The Lotus is an optical-acoustical brainwave entrainer — a brain machine. What we have just witnessed was brain surgery with light and sound. And this is just one of the things it does.

Here we have a technology claimed to increase IQ by 10-30 points, that doubles or triples reading speed and teachs anyone to control their brain states with a precision practice — all in a single five-day course. A technology that cures afflictions from dyslexia and autism to

depression, Attention Deficit Disorder (ADD) and even physical disorders. And that can also greatly improve sports performance, such as golf handicaps.

If even half the institutes claims are true, the Lotus Brainwave system coupled with the techniques of "alphalearning", amounts to at least a revolution in education and medicine. offering relief and empowerment to millions. At best, it offers far more. As a species, we're paddling out of the shallows and into the full tunami of an information explosion. In our personal and professional lives, as individuals and as a society, we are expected to know more, about more, and know it faster than ever before. Change is accelerating.

As information is generated and distributed with increasing speed, the limiting factor has become our own brains. By any measure, the world could do with being a little wiser, a little less stressed. We are approaching an evolutionary bottleneck through which the alphalearning system would appear to offer safe passage—one which several hundred senior executives of Fortune 500 companies have already taken advantage of during its six-year development.

But are half the claims true! Or all? Or none? And how can we decide! The search for answers involves a journey to "somewhere on the fringe between lunacy, philosophy, alternative medicine and science-shat-no-one-quite-understands-yer", as one executive who has done the course puts it.

Kris provides our first opportunity to stick our fin-

piniosophy, aternative incurring and scene-culativo-one-quite-understands-yer, as one executive who has done the course puts it.

Kris provides our first opportunity to stick our fin-gers in the wound. When she arrived at the Alphalearning office just an hour before, she was drooling, her head swaying uncontrollably as her eyes wandered unfocused in their sockets. All these symp-town have about after just one session. toms have abated after just one session.

She is relaxed — the opposite of how she normally is around strangers — and her breathing is smoother, her

tute might thing from L reports.

As for how a seven-year-old disabled child continue to improve. Well have her using a computer herself to set and to the same equipment and cumulative, assures Adam. "With regular practice with the Lours, shell continue to improve. Well have her using a computer herself in a few months."

As for how a seven-year-old disabled child came to be using the same equipment senior executives use to learn to read faster, a little background is necessary. But about one thing Adam is adamant. "This is not a miracle: I'm not Christ. Nor is it just a machine but a system. It can teach you how to wake up your brain, how to learn, to realise change is possible.

Humans have been experimenting with what we now call trance technology for at least 65,000 years. That's the date of the earliest remains indicating that people danced around the flames of a fire, creating a primitive stroboscope for observers. Bashing a log with a rock added sound and there you have enough to after consciousness. Wirch doctors and shamans have used such knowledge ever since.

Tibetan Buddhist monks refined the system into a spinning prayer-wheel through which a candle flame flickered while a monk spoke into the user's car and another beat a drum. It was clear even then that lower frequencies of flashing light and drums caused people to sit calmer and learn better.

But no one knew exactly what was happening until around 100 years ago, when British biologist, Cade, discovered that the brain emitted electrical impulses. Around 1938, German doctor Hans Berger isolated a brainwave, the so-called alpha wave, with a frequency of around 7-14Hz. Like Cade, he had to stick needles into his subjects' heads to get a reading. Unlike Cade, Berger had no idea how to replicate the wave or teach soldiers how to generate it.

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interest grew in trying to teach people to generate an alpha wave by biofeedback.

WHY ALPHA? Because it is the state of relaxed concentration or "lucid awareness". Typically, it is a wave of around 7Hz — about 50 per cent slower than the normal waking-thinking state. It allows total concentration and synchronisation of the left and right hemispheres of the brain perfect for reading, listening and other forms of information input.

It also facilitates synchrony between the two halves of the brain. Synchrony, as researchers such as Charles Stroebel and Princeton University's Lester Fehmi have discovered, is an extremely powerful and beneficial state to be in. It is involved in rapid healing and normalisation of body functions and enhances learning rates and stress control. A balanced borin means a balanced body and mind, it seems.

Unfortunately, it can take hundreds of hours or thousands of dollars to learn how to get to the point where you can duplicate the alpha wave. In fact, usually, says Adam, the price was 'everything': that's what gurus charge to dole out secrets one by one over the years. Now, the computer is the guru, 'he says.

In spite of the intense interest in brain machines, after experiments with zen monks, students and professionals, Maxwell Cade, author of The Ausakened Mind, and Michael Hurchinson in Mega Banin agreedit takes 15–20 years' practice to generate an alpha wave at will. The first key advance of the Alphalearning Institute was to stop messing with biofeedback and goright in and implant the desired brainwave. Since autumn 1992, the institute's equipment and techniques have been capable of diagnosing — within 10 minutes — any left-right brain imbalance, wave amplitude extremes and control lapses.

A customised programme of flashing gold light into the eyes and soft steres osund into the cast shings these into normal ranges in just 12 minutes. Next, "Neuro Linguistic Programming" (XLP) is used to embed this balanced state. NLP. discovered by John Grinder, is when a command or complimen

authority figure in front of a peer group, accompanied by a physical touch or reaction, creates a permanent mental anchor. You will now behave that way for the rest of your life, or at least until someone changes it.

This insight stemmed from the findings of a group of 40 Harley Street consultants working with Regent's Park College in London in October 1989. Among them was Adam, a motivational psychologist with over 30 years' experience of "tuning Ferraris", as he puts it. Looking for a cure for smoking, they proposed that if they could only take a patient into the theta brain state (41±2) and hold them there long enough, they could take them back to their first cigarette and ask why they were smoking it, and whether it was still a valid reason to smoke.

Over a three-month period, they found that it was possible to change all their subjects' brain states—instantly. Previously, everyone in the field believed that this took 20 minutes to achieve. Hence the "amping" used by all other brain machines, gradually increasing or decreasing oscillation between waking and desired frequency. Furthermore, it was possible to teach them in just a few days how to control these states themselves. Adam's six-year roller coaster finale to a lifetime's research was about to begin. Already it had taken him from his Texas roots, via two years of research into trance and meditation techniques in India and Nepal, to six world records for mental achievement, including World's Texas roots, via two years of research into trance and meditation techniques in India and Nepal, to six world records for mental achievement, including World's Texas roots, via two years of research into trance and meditation techniques in India and Nepal, to six world records for mental achievement, including World's Texas roots, via two years of research into trance and meditation techniques in India and Nepal, to six world records for mental achievement, including World's Texas reader at 3,850 words a minute (you're reading this at 200-300).

All previous stu

and found the technique worked on all of them, irrespective of nationality.

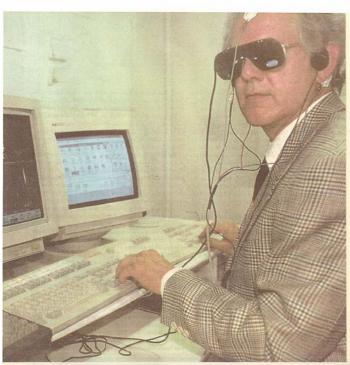
A four-minute electroencephalogram (EEG) test was developed to check subjects' ability to listen and learn, read and learn, to close the eyes and relax, perform maths and the ability to make decisions. From this, the newly-formed Alphalearning Institute isolated the precise frequencies of the various types of brainwave — beta (14Hz, the normal waking, alert, reasoning state), alpha (7Hz, receptive, learning), theta (4Hz, the concentrated, creating state where a new memory is stored or an old memory accessed) and delta (2Hz, relaxed, resting, the state used for pain control, there is no pain in delta) — that the brain could learn.

THINKING CAP: Scan Adam tests his performance on his brainchild, the Brainwave workstation. The lines at the top and bottom of his screen measure the activity in each ide of his brain, the line in the centre shows the difference between their activity. The smoother this line is, the more synchronous are the two halves of his brain. BELOW: seven-year-old Kris, who has serious brain damage, undergoes her first session on the machine. After just 12 minutes, she is more relaxed, her head more controlled and her eyes more focused. more focused.









Using an old InnerQuest brain machine, a modelsince discontinued, the researchers would put the executives into a theta state and take them back to the
moment, as children, when they were reading out loud
and the teacher came along and parted them saying,
"Well done, John'ny." From that point on, and everyone has one, that is the speed at which you read. NLP
again," says Adam, "We found a direct correlation
between the speed at which people talk and the speed
they read. Italians read around 330 words a minutes,
Dutch about 220, Germans 280 and Texans about 180.
"So now we just put 'em in theta and say, Johnny,
now you can read to people, that's a really good skill.
Now would you like to learn another called reading to
yourself? And they go, 'Uh, yeah'. So we put a pen in
their hand and set it moving to a metronome [the technique involves reading with a pointer] and tell them
that's all they have to do to read at this speed. When I
say one, two, three' and saap my fingers, they'll be able
to. And they can. Seven hundred words a minute."
Is it that simple? "Yes, which is why all these companies went, 'Oh my God! How quick can you train our
executives! Can you train them to take notes? Control
stress? Be more creative? Stop chewing their finger nails?
Well, it beat the hell out of me but I said we'd ny."
Throughout 1991, Adam commutted around
Europe training 300 executives from a wide range of
companies, nationalities and languages, checking and
double-checking. On the basis of this study, three
companies, Raychem, ICL Benelux and Henkel,
signed up for more extensive training sessions. They
would provide the 'white rat' executives with IQs in
the 120-180 range. Alphalearning would experiment
on, and train, them.

The answer was yes to all the questions.
Alphalearning can optimise the brain for information
throughput and memorisation, old habits can be
reprogrammed; in delta, subjects could withstand
pain. And there is a host of other applications. Using an old InnerQuest brain machine, a model

Jan Willem van den Brandhof, director of human resources for ICL, contacted Adam in 1991 after seeing an article about speed reading, a pet interest of his. Since then, 40 of the company's 509 employees have been trained; all the top management layer, plus some salespeople. "All the responses were positive, and everyone was impressed by what they learned," asys van den Brandhof. "In our business, change is so fast; the amount of information doubles every two years. It's of the utmost importance to learn fast and absorb a lot of information quickly. Learning to learn is key.

"ALSO, as workloads and required productivity increase, so the level of stress is an increasingly important factor in business. If you can work with simple techniques to improve on that, it's a very good investment. I believe what the Alphalearning Institute has developed is a unique programme. It's not your standard speed-reading course.

What level of employee would benefit from the course in an organisation such as his? "Managers, salespeople and anyone who has to cope with a lot of information and is under stress. And if you look at my company, that's pretty much everyone," says van den Brandhof.

The institute has also experimented with more than one subject hooked up at the same time, so they can see each other's brain reactions to interaction. The results have profound implications for teamwork and indeed on any interpersonal communications. For example, the brain broadcasts as well as receives. A trained brain can influence the brain state of those to whom its owner is talking.

A demonstration of this comes during a special family training week at the institute, Jos van Es was hit by a car two years ago while cycling. Ever since, his emotional balance has been out of sync. He has lost his sense of taste and smell and his home and work life are suffering, along with the whole family. His family — his wife, Marianne, and children, Nancy, 19, and

Jurgen, 22 — are taught how the brain works and what damage means for each of them. Then they do the course. It's a heavy, demanding week that has clearly been emotionally and philosophically trying for all; not least when Adam removes a bioelectrical energy "cyst" from Jos on the fourth day by diffusing it through his own body. The "cyst" is a blockage in the conduits of the body's electrical energy paths, long-known to Chinese medicine as chi. The existence of these paths has recently been confirmed by Western neurologists.

All four can now control their brain state and see auras, another strange side effect of the course. They have all become convinced they are better equipped to deal with the strains of family life, and Jos' senses of taste and smell are already returning.

But its very differentness is a problem for the alphalearning system. It's an eclectic mix of hard, soft and parascience and Eastern philosophy. Peter Selkirk, a senior executive at Raychem UK, says, "As the seniority of managers [at Raychem Belgium] taking the course rose, there were increasing concerns about its whole acceptance. How mainstream was it? Just how fringe did Raychem choose to go?

"It's another example of the fear you encounter of going beyond boundaries of science. It's not simple Luddien, a 19th-century British political group, believed mechanisation would diminish employment and were therefore aggressively opposed to technical progress.]

Raychem UK took up the sponsorship reins and Selkirk did a course in early 1994. "I understand how they feel. However, I was keen and trilled with the course." Twenty people have now done it in Britain. But it's not a mainstream, like sales skills, for example. "This is one of Sean's frustrations and it's understand-able." says Selkirk. "Glasses and earphones make your brain better? It does take some wallowing.

But selkirk and his wife, Cornelia, have had no such doubts since their son Harry tried the Brainware 1 workstation, an event that would change the whole direction of the Alp

awful," says Cornelia. "She looked and said she could see no difference, when there clearly was. The physiotherapix however was very positive. She came round and looked at the system and immediately accepted using the equipment herself.

"On the whole, we met a great deal of negativity from the medical profession. They were very anti." she says. "They are not open to new ideas, though other parents have had more positive experiences, especially those like Wendy Lees, mother of James, who has literally begun a second life thanks to the treatment."

Lees' second son, James, was born in Zimbabwe in 1963. He had been a face presentation, stuck behind his mother's pelvis and was born with blood oozing from his nose and ears and the side of his head clearly dented. In Britain, the Wolfson Centre confirmed that the motor section of his brain had been damaged causing physical weakness, high sensitivity and mental difficulties.

James grew up facing the emotional problems associated with the fact that he refused to accept he was handicapped and was embarrassed by his lopsided walk, his slutry speech and his lack of ability to improve his motor skills, such as writing. A chance meeting by his mother took James to Masarticht. Lees takes up the story in a testimonial later sent to Adam in grateful thanks.

"We were told that if there was to be an improvement, it would be noticeable within hours. We left the institute in the early evening and kept looking at James. Later, we went to a restaurant with some friends who had come to the centre with us. Young easil she though James' speech was clearer. John and I thought so too and were trilled that someone cleak bedeen the first to point it out.

"However, we didn't have long to wait for conclusive

proof as the very next day, en route home, we were at Schipol Airport and approaching a steeply descending escalator and, in our normal way, got ready to carch hold of James to steady him. Without a word, he got on without any help, as if he had been doing it all his life — and carrying his own suitcase, James marched ahead of us and proceeded to climb down a very steep staircase, again unaided. We realissed then and there that the treatment had worked. Soon the alphalearning equipment was installed in James bedroom.

Why have parents kept such a low profile? Indeed why is the alphalearning system not more widely known about? Cornella Selfix says they kept quiet for fear of putting back the progress of their children. For Adam, the answer is more complex.

AS IT became clearer that what had started out as simply a way of teaching executives to read faster was becoming a full-blown medical revolution, the institute had to decide what it was in business to do. "There are 200,000 people working in the dyslexia business in the USA alone," says Adam. "What are they going to say when we tell them it doesn't exist." Having given a first account of some of his findings to a closed meeting of trance psychologists in America in 1990, he was warned that he would have to prove his claims before he made them public," or be crucified." Adam vowed to try the system on over 500 subjects, with at least 1,000 EEGs before saying anything. The 500th subject was tested in the summer of 1995, just before Adam "went public".

"Proof" is a difficult concept; as is "cure". On the one hand, there has been a retreat from rationality in the past few decades. Science as the only true arbiter of AS IT became clearer that what had started out as

truth has taken a bashing. On the other hand, how else do you convince people of incredible claims? How do you mobilise government and health organisations to back and provide access to an heretical technology like this? The Brainwave workstation currently costs US\$10,000 (\$77,200), including a five-day training course; Adam believes he can put the workstation and the EEG on the market for \$1,000.

Professor Rainer Dieterich, psychologist and dean of the education faculty at the German army's Bundeswehr University in Hamburg, is one of the few academics exploring the Brainwave 1. He finds Adam's approach promising and, as he is not bound to specific theories and uninfluenced by any ideology, rare in the field of psychology. "What he needs is for his ideas to be accompanied by scientific research, serious experiments according to the standards of experimental psychology. That's why we're in touch."

If you interview scientits, it's their job to be sceptical. If they see Adam's claims, they will try to check whether they are true or false. Could it be falsification? Dieterich concedes that it could, "But I have no indication that this is so. He gives me his data, he has no advantage to make me believe. Do I believe him? Yes, why not? I have observed some of his successes.

"But I have to be systematic and have a theory that is consistent. Sean Adam is not a theorist but a practitioner. If he needs a theory with good internal logic and experimental sakis lageler-Peerdeman, neurosurgeon at Amsterdam's Free University Hospital, "I accept that you can influence the brain from outside, that's how you learn. Electric shock treatments have been used to





LIGHT SHOW: a

standard brain machine in use. Adam dismisses such units as "mere toys" and possibly dangerou to the user.

treat depression and I know of a patient who was operated on in meditation without anaesthesia. I don't think you can call alphalearning surgery: I'd call it reprogramming.

"His further conclusions, I disagree with," she says. "He claims that with one form of audiovisual impulse he can change almost anything and I can't accept that. He proves it with EEGs, but they are simply a recording of the surface activity of the brain. If you change some of the activity there, I don't think you can measure someone's intelligence or their ability to cope with situations on an EEG."

Raychem's Peter Selkirk points out that there's a "whole universe of claims out there, and it's almost impossible to tell what is valuable and what is junk—which is also the protection built into the accepted way of doing things and the reason why it is so easy to make genuine advances sound like nonsense. I fear the course is almost bound to be more rejected than accepted," he says. "It takes a certain type to be open enough to 'get' it. But this has changed our whole way of looking at life. It is partly the philosophy and partly the technology."

Selkirk fears the damage that a few ridicule-attracting overstatements or the drive to prove and measure ould cause. "Many of the changes experienced are inherently hard to measure, making it easy game for the cynic. The technology is powerful enough without overkill."

The real measure of alphalearning, he says, is with the caustomers — and they have given it strong support. "The technology is powerful enough without overkill."

The real measure of alphalearning institute has over 100,000 pages of data. 50 poople and 1,000 EEGs which say it does." This data is currently being placed on a Web site on the Internet at Eindhower University. It is important that society takes Adam's claims seriously, simply because, if true, they do indeed represent a new era of medical treatment and education. Many conditions that are currently hard to treat, or only by using damaging drugs, could be alleviated. Hundre

For further details of alphalearning, including local sites and practitioners, contact the Alphalearning Institute, e-mail: http://www.riv.nl/brainscape.

