**RATS, A RUSSIAN SOLDIER AND A RARE DETERMINATION TO SUCCEED GAVE BARBARA ARROWSMITH-YOUNG ALL THE ELEMENTS SHE NEEDED TO CHANGE HER LIFE – AND ALONG THE WAY HELP THOUSANDS OF OTHERS OVERCOME DEBILITATING LEARNING DIFFICULTIES. BY JANET HAWLEY.**

I t wasn’t for a toxic Russian soldier living with a bullet lodged in his brain, and then a cage of playful rats, Barbara Arrowsmith-Young would not have become the woman who changed her own brain. Nor would she have helped almost 4000 learning-disabled children and young adults who traverse the globe to take her program change their brains, too.

At the Toronto headquarters of her unique Canadian and American schools – think brain gymnasiums – Arrowsmith-Young reflects with a wry smile that faxes and computers can Orinoco the world. “The brain has a mind of its own,” she says. “It’s the only organ in the body that can change itself.”

**The identical damage that a bullet had done to Lieutenant Lyova Zazetsky at age 23, I was given at birth.**

In a foreword to Arrowsmith-Young’s autobiography, The Woman Who Changed Her Brain, to be published by HarperCollins in May, Dodge calls her “a promoter; a bold and ingenious woman, deeply sympathetic and unfailingly determined. Rarely is the person who makes the discovery of the one with the deficit Barbara is an exception.”

**Arrowsmith-Young is an intense, elegant woman of 60 who talks and moves gracefully, radiating warmth and good humor. It’s a world away from the frighteningly confused, inwardly tormented loner she was, often strikingly unsocial, until age 29.**

She was born with an asymmetrical brain, half her faculties brilliant, half severely disabled but her near-genius half unable to control her other half, which was a stammering, mumbling, unfinished doll: “I grew up regarded as a version of an idiot savant,” she says. “I could parrot the homilies verbatim at 11 pm, but not understand what a word of it meant. Teachers told my parents I had a mental block, so I literally thought I had a wooden block in my brain.”

**“I imagined my own impaired brain as a muscle, and invented stimulating exercises to target weak areas that didn’t work correctly. I repeated exercises over and over, and I did it 12 to 14 hours daily, increasing the degree of difficulty and complexity month after month. Yes, it was obsessive.”**

After more than six months, dormant parts of her brain began stirring. “It felt like finally stepping out of a terrible fog into total clarity,” she says.

Today, a steady stream of apparently bright kids, who also suffer seven learning difficulties, attend the 34 schools in Canada and the US of firing the Arrowsmith program.

**TEAM AUSTRALIA**

While Australian children are among several international students attending the Eaton Arrowsmith school in Vancouver. Their families call themselves Team Australia.

**The mother of a 15-year-old girl, who recently returned to her Sydney private school, emailed me a two-page list of expert therapists and reading that her daughter had undertaken for 15 years, specializing in advanced English and 80 per cent in chemistry in her first two HSC assessments,” Arrowsmith-Young cautions. “We can’t help everyone; our program can’t help intellectually disabled or autistic children. In some students, the turnaround is dramatic, within a year, but most require three to four years.”

**Typically, the children who can be helped are of average or above-average intelligence, but also have various puzzling blocks that leave them unable to grasp how to read or write fluently, or do maths, or focus on tasks, or recall instructions. They also can’t see relationships between facts, or reason logically or understand abstract concepts (‘I see something in a picture and can’t come to some place in this category.’**

**Typically, too, parents have spent fortunes exhausting every avenue of help – medical and psychological clinics, dietary tests, speech, eye therapists, special instruction and tutors – but the children fall further behind.**

Numerous Arrowsmith parents I spoke to described family heartache watching, once-happy kids develop low self-esteem, anxiety and behavioral problems as they slid behind their peer group. Tension, exhaustion at home, heightened stress and deep despair were common, triggered by frustration with their own cognitive inabilities.

**“It felt like finally stepping out of a terrible fog into total clarity,” she says.**

“Every single one of our program participants have various puzzling blocks that leave them uneducated or, at least, undervalued by society in relation to their abilities. If a child is bright and has a learning disability, society expects them to function normally but they are at a great disadvantage in life and work,” Arrowsmith-Young says.

**Barbara Arrowsmith-Young has undertaken for 10 years, adding, ‘It all paled into insignificance compared with what Arrowsmith achieved in five months.’**

“Her daughter, who last year could barely achieve 50 per cent in her exams, ‘just achieved 95 per cent in advanced English and 80 per cent in chemistry in her first two HSC assessments’,” Arrowsmith-Young says. “‘We can’t help everyone; our program can’t help intellectually disabled or autistic children. In some students, the turnaround is dramatic, within a year, but most require three to four years.’”

**Typically, the children who can be helped are of average or above-average intelligence, but also have various puzzling blocks that leave them unable to grasp how to read or write fluently, or do maths, or focus on tasks, or recall instructions. They also can’t see relationships between facts, or reason logically or understand abstract concepts (‘I see something in a picture and can’t come to some place in this category.’)**

**Typically, too, parents have spent fortunes exhausting every avenue of help – medical and psychological clinics, dietary tests, speech, eye therapists, special instruction and tutors – but the children fall further behind.**

Numerous Arrowsmith parents I spoke to described family heartache watching, once-happy kids develop low self-esteem, anxiety and behavioral problems as they slid behind their peer group. Tension, exhaustion at home, heightened stress and deep despair were common, triggered by frustration with their own cognitive inabilities.

**“It felt like finally stepping out of a terrible fog into total clarity,” she says.**

“Every single one of our program participants have various puzzling blocks that leave them uneducated or, at least, undervalued by society in relation to their abilities. If a child is bright and has a learning disability, society expects them to function normally but they are at a great disadvantage in life and work,” Arrowsmith-Young says.

**Barbara Arrowsmith-Young has undertaken for 10 years, adding, ‘It all paled into insignificance compared with what Arrowsmith achieved in five months.’**

“Her daughter, who last year could barely achieve 50 per cent in her exams, ‘just achieved 95 per cent in advanced English and 80 per cent in chemistry in her first two HSC assessments’,” Arrowsmith-Young says. “‘We can’t help everyone; our program can’t help intellectually disabled or autistic children. In some students, the turnaround is dramatic, within a year, but most require three to four years.’”

**Typically, the children who can be helped are of average or above-average intelligence, but also have various puzzling blocks that leave them unable to grasp how to read or write fluently, or do maths, or focus on tasks, or recall instructions. They also can’t see relationships between facts, or reason logically or understand abstract concepts (‘I see something in a picture and can’t come to some place in this category.’)**

**Typically, too, parents have spent fortunes exhausting every avenue of help – medical and psychological clinics, dietary tests, speech, eye therapists, special instruction and tutors – but the children fall further behind.**

Numerous Arrowsmith parents I spoke to described family heartache watching, once-happy kids develop low self-esteem, anxiety and behavioral problems as they slid behind their peer group. Tension, exhaustion at home, heightened stress and deep despair were common, triggered by frustration with their own cognitive inabilities.

**“It felt like finally stepping out of a terrible fog into total clarity,” she says.**

“Every single one of our program participants have various puzzling blocks that leave them uneducated or, at least, undervalued by society in relation to their abilities. If a child is bright and has a learning disability, society expects them to function normally but they are at a great disadvantage in life and work,” Arrowsmith-Young says.

**Barbara Arrowsmith-Young has undertaken for 10 years, adding, ‘It all paled into insignificance compared with what Arrowsmith achieved in five months.’**

“Her daughter, who last year could barely achieve 50 per cent in her exams, ‘just achieved 95 per cent in advanced English and 80 per cent in chemistry in her first two HSC assessments’,” Arrowsmith-Young says. “‘We can’t help everyone; our program can’t help intellectually disabled or autistic children. In some students, the turnaround is dramatic, within a year, but most require three to four years.’”

**Typically, the children who can be helped are of average or above-average intelligence, but also have various puzzling blocks that leave them unable to grasp how to read or write fluently, or do maths, or focus on tasks, or recall instructions. They also can’t see relationships between facts, or reason logically or understand abstract concepts (‘I see something in a picture and can’t come to some place in this category.’)**

**Typically, too, parents have spent fortunes exhausting every avenue of help – medical and psychological clinics, dietary tests, speech, eye therapists, special instruction and tutors – but the children fall further behind.**

Numerous Arrowsmith parents I spoke to described family heartache watching, once-happy kids develop low self-esteem, anxiety and behavioral problems as they slid behind their peer group. Tension, exhaustion at home, heightened stress and deep despair were common, triggered by frustration with their own cognitive inabilities.
cognitive functions – visual and auditory memory, reasoning, planning, problem solving. Once the brain is woken up, it doesn’t revert – it stays in its new, changed form.”

New students may arrive laden with emotional baggage. They are used to failing and feeling that they’re dumb. Motivation soon increases as students master each step, ritually receive a class clap and do a happy dance to celebrate, then move on to the next level of difficulty.

To an outsider the exercises seem slightly bizarre. I watched students in the Toronto school intently clicking away at computer screens with 10-handed clocks. Others are memorising a sequence of shapes, then spotting those shapes amid a maze of figures on the next screen. In the next classroom, students sit like pirates with a patch over one eye, tracing Hindu script, thus forcing the weaker side of the brain to work. It makes sense when you think of it as physiotherapy or a Pilates workout for the brain, strengthening weak areas through repetitive exercise, massaging stiff lesions and increasing flexibility so messages can travel through.

SUICIDAL THOUGHTS
BARBARA ARROWSMITH-YOUNG WAS BORN IN Peterborough, Ontario, to a high-achieving family. Her father, Jack Young, was an engineer and inventor with Canadian General Electric and held 34 patents on ways to move electricity through huge machines. Her mother, Mary, was a teacher and nutritionist. “No one knows why I was born with a damaged brain,” she says. “Perhaps I suffered a stroke at birth, as I had no awareness or control of the left side of my body.”

As a child, she was a bewildering mix of extremes. “I had a phenomenal memory, I could recite entire movie scripts or lists of facts like a machine, but I had no ability to use the information, to process it into reasoning or logic. I couldn’t understand cause and effect, or see connections. I couldn’t fathom the relationship between the hands of a clock to tell the time. I had no concept of humour, irony, metaphor, sarcasm, conning or deceit, so I was unable to understand normal social relationships. I’d relay conversations over and again, trying to grasp what was meant.”

Eventually she learnt to read and write, despite her brain making her see and write some letters backwards. As well as having no control over her left arm or leg, she had no perception of space or distance, and so was always bumping into things and getting lost. “My saving grace was a strong frontal lobe which gave me a short-term strategy, hoping for long-term gain. It requires a big leap of faith to commit to a short-term strategy, hoping for long-term gain. As with all paradigm shifts, education authorities must usually be Educators and parents are seriously exploring introducing the program in their schools, which would mean a radical change in entrenched teaching methods for learning-disabled students. The Catholic Education Office in Sydney and two Queensland bodies are seriously exploring introducing the program. The most common concern is that students, already struggling with the academic curriculum, will fall further behind if withdrawn for half a day to attend Arrowsmith.

It requires a big leap of faith to commit to a short-term strategy, hoping for long-term gain.

Arrowsmith-Young suggests that, on resuming normal school, students have a tutor for the first year to help them catch up on normal curriculum subjects. Most catch up quickly with their new, improved cognitive abilities.

“Mind Fields” (left) show the Brodmann areas of the brain, indicating the part of the brain damaged when Russian soldier Lyova Zazetsky (above, left, with the man who studied him, Russian neuropsychologist Aleksandr Luria) was hit by a bullet. (below left) Barbara Arrowsmith-Young with students at her school. The eye patches force weaker areas of the brain to work harder.

It was like meeting my twin soul. The identical damage that a bullet had done to Lieutenant Lyova Zazetsky at age 25, I was given at birth.

“OPENING PAGES: HAIR AND MAKE-UP: CHRISTINE CHO. PIERRE GAUTREAU; LINES TO THE SIDE: CHRISTIAN BITTLE; WINGING THE PAGE: MARIO VALENCIA; PICTURES: © 2005 ROBERT LEIBER. ARCHIVE PHOTO REPRINTED WITH PERMISSION OF DESCOPERA.ORG”
However, several parents, including some from Team Australia, recall being harangued for their carefully evaluated decision to send children to Arrowsmith. Deborah Thompson, a Toronto financial analyst who sent her son, Sam, to Arrowsmith, said, “People told my husband and me we were destroying Sam’s life, that we might as well be throwing chicken bones on the floor and doing voodoo. But Sam was seven and reading for him was torture. He had significant communication problems; he couldn’t get his words out. We knew there were pathways in his brain, but the metaphor I use is that it took Arrowsmith to sweep the snow off the pathways.” Sam returned to regular school after three years at Arrowsmith. Now 19, he is a voracious reader and lucid talker and is studying business administration at university.

Suzie, a lanky 18-year-old who excels at sport, tells me she didn’t want to go to Arrowsmith two years ago. “I had attention deficit disorder and no memory for schoolwork,” she says. “I’d put information into my brain but could never retrieve it. I was planning on becoming a dog groomer, which was my highest aspiration for myself. To please my parents, I threw myself into the Arrowsmith program so I could get through it in a year and leave. But I was astounded at the way it transformed me.” Now back in regular school, she’s achieving marks of 85 to 90 per cent and plans to study chemical engineering.

Sarah, 25, says, “All my life I’ve been so frustrated. I knew I had tools in my head, but I couldn’t use them. My family, teachers, always told me I was lazy. I wasn’t lazy. I just could not fit things into place. Now I can. Arrowsmith is hard work, but so worth it. It’s astonishing to go home each day, realising you can now think about something, figure things out, in a way you never could before.”

Lisa, 19, the shy, pretty daughter of two high school teachers, had been taught piano for eight years. “I could only play by memory, I could never understand how to sight-read the notes on sheet music, I couldn’t attach meaning to the symbols,” she says. “Arrowsmith didn’t teach me music, but after a year of cognitive exercises, I can now connect information inside my brain, so I sight-read music perfectly. I now get how to do maths.”

Deborah Garland, a tall, blonde, confident and good-humoured Canadian journalist, was a member of that small first class in the inaugural 1978 Arrowsmith program. “I owe my life to Barbara,” she declares. “When I finished high school I was an educational failure, with such low self-regard I could only think of using my looks to become a prostitute or marry a sugar daddy.”

A counsellor suggested she enrol in the program. “Barbara immediately understood me; my learning disabilities were somewhat similar to hers – I couldn’t process information, I had no idea what humour was, my vision was two-dimensional, so the world looked like cardboard cutouts. Within a year, Barbara fixed my brain. I could reason and see in perspective. I’d walk down streets staring at buildings in amazement. I began to get humour – hey, I could actually tell a joke!” She set a new career course, studying journalism.

“I’d love to see refined forms of the Arrowsmith program available to everyone,” says Arrowsmith-Young. “I think it would be extremely useful if all school children, in grade one, were taught cognitive exercises – to get their brains stimulated and ready to learn. Then there would be no stigma, because everyone would do it. Children with learning disabilities could be identified early, helped early, and others would have their brains tuned up.”

“I’d also love to see different forms of cognitive exercises, using the principles of neuroplasticity, broadly available to everyone, online. Maybe we could have mental gyms where you drop in to do regular exercises to keep your brain sharp. But it needs a Bill Gates-type philanthropist to come along and fund the research and software to do this, plus it requires a pool of teachers to monitor it and provide user feedback.”

Doidge considers learning disorders to be one of the most underestimated underlying causes of failure and behavioural problems at school and in life. “It wrenches my heart to think of all the children, sitting in schools throughout the world, wiring into their brains each day the idea that they are dumb or useless or losers, because many educators are still under the sway of the doctrine of the unchanging brain.”

I put it to Arrowsmith-Young that her life sounds a bit like Sleeping Beauty waking up after being kissed by the Prince.

“Yes,” she replies with a soft laugh, “but I was my own prince.”

Barbara Arrowsmith-Young will appear at the Sydney Writers’ Festival in May. Janet Hawley travelled to Toronto with assistance from HarperCollins.