The Mind of an Opera Singer

Does opera training change how the brain works?
A new UBC study looks for answers
By Tze Liew

What happens in the brain of an opera singer? Prof. Nancy Hermiston, Chair of the Voice Division and Director of the UBC Opera, has wondered about this for nearly 20 years. She suspects that opera training can rewire the brain, given how cognitively challenging it is as an art form.

“Opera is very complicated,” Hermiston says. “Singers are required to multitask on so many levels. They must perform difficult music, sing in a foreign language, act, dance, keep an eye on the conductor without the audience noticing, coordinate with the rest of the cast, feed off the energy of the audience without getting distracted, all while wearing a costume weighing up to 45 pounds!”

It is no doubt incredibly taxing on the body—and the brain. But over the span of her 24-year teaching career, Hermiston has time and time again been amazed by the marvellous feats and learning leaps achieved by her students. She has observed many cases of students with learning differences—various forms of dyslexia and attention-deficit disorder—improving drastically in their academic abilities over years of opera training.

“I once had a student who would take two months to learn a ten-minute excerpt,” says Hermiston. “As the years progressed, her learning speed increased significantly: so much that when she was given two weeks to learn a lead role in a contemporary opera—and contemporary ones are especially difficult—she was able to do it.”

Hermiston has also worked with students who found it difficult to learn foreign languages in a traditional classroom setting. Many canonical operas are sung in German, Italian, and other European tongues, so a measure of fluency is essential for aspiring singers. Hermiston noticed that when language training was combined with singing and music in opera, the students learned much more quickly.

Based on all these observations, she was convinced that opera training must be sculpting the brain somehow, and she saw the need to investigate deeper. After 16 years of trying to build a research team, she finally succeeded in kickstarting the Wall Opera Project, bringing together experts in opera, neuroscience, linguistics, education and kinesiology—one of the largest interdisciplinary projects combining the arts, humanities and sciences across UBC.

“When I first proposed the idea for a research project years ago, it was rejected. People thought I was out of my mind,” says Hermiston. “But now the climate is changing. The importance of interdisciplinary research is much more recognised. I’m so grateful to the Peter Wall Institute for seeing the potential in this project and funding it so generously.”

Indeed, music has become a hot area of study among brain researchers. In recent years studies on everything from how creativity works in the brains of pianists to how musicians process music differently than non-musicians have been published to great public interest.

The opera study will begin in spring 2019, and run for a span of three years with Prof. Lara Boyd, Canada Research Chair in Neurobiology of Motor Learning, Prof. Janet Werker, Canada Research Chair in Developmental Psychology, and Dr. Rachel Weber, Director of the Faculty of Education’s Psychoeducational and Research Training Centre Neuropsychological Assessment Clinic, as principal investigators.

Read the whole story on the High Notes blog.
From wearable instruments to 3D-printed violins

Created eight years ago as a ‘laboratory where music meets technology,’ the Sonic UBC Laptop Sounds and Sensors class has become a hothouse of innovation

By Colleen O’Connor

A dancer in a wired bodysuit makes a graceful opening gesture and instrumental percussion begins. Her movements quicken as she crosses the Barnett Hall stage; she brings her leg around in a circle and the rhythms become more complex. As both hands touch the suit, digitized pitches layer atop the percussive beats.

A musician sits with a violin perched in her lap. She taps the body of the instrument. Percussion and synth sounds emerge, as colourful geometric shapes collapse, expand and dance on the screen behind her. She picks up her bow and begins to play.

A wearable instrument and a violin that ‘plays’ colour as well as sound: These fascinating projects were developed by students Kiran Bhumber (BMus’14) and Chantelle Ko (BA’18) in Dr. Robert Pritchard’s Sonic UBC Laptop Sounds and Sensors Class (SUBCLASS). A core part of the Applied Music Technology Minor, SUBCLASS is a musical laboratory where students become inventors, pushing the boundaries of music and technology.

"There’s a huge benefit for students from different disciplines collaborating and sharing... it’s inspiring."

— Dr. Robert Pritchard

The idea behind the course, according to Dr. Pritchard, is to bring students with very different perspectives and skill sets together, give them the tools and the space to create, and watch what happens. “Our students come from music, film, theatre, computer science, engineering, kinesiology and other programs,” he says, “and together they create electronic chamber music that explores brand new ideas in synthesis. There is a huge benefit for students from different disciplines collaborating and sharing each other’s knowledge. It’s inspiring.”

With the guidance of Dr. Pritchard and Dr. Keith Hamel, students with complementary skills are grouped together. A music student with a specific musical concept in mind might be paired with an engineering student in order to realize it—as in Chantelle Ko’s case.

Her project, TRAVIS (Touch Responsive Augmented Violin Interface System), involved putting sensors on an acoustic violin, wiring up the circuitry, and writing code that would allow computers to track the movement of the bow in real time—which captured the data from the violin’s sound as she played. This data could then be used in any number of ways, for example to ‘visualize’ the sound of the violin as colours and shapes or to generate additional sounds as the bow accelerated across the strings.

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The 2018–19 UBC Concerto Competition winner was lyric soprano D’Arcy Blunston. She performed Britten’s Les Illuminations de Rimbaud, Op. 18. First runner-up was pianist Markus Masaites, who performed Mozart’s Piano Concerto in No. 18 in B-flat major, K. 456. Second runner-up was pianist Yu-Hsien Lin. She performed Schumann’s Piano Concerto in A minor, Op. 54.
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A life dedicated to cultural exchange

This March, students from Tokyo’s Keio University Choir and UBC’s Baroque Orchestra Mentorship Program (BOMP) teamed up with Early Music Vancouver for a gorgeous performance of Buxtehude’s Membra Jesu Nostri at Christ Church Cathedral in downtown Vancouver. The groups performed the German composer’s 17th-century masterpiece to a large and enthusiastic audience.

Among those in attendance was Keio University alumna and longtime UBC School of Music supporter Tamako Copithorne. For Tamako, who helped to support this initiative, it was more than just a concert. It was the latest highlight in a passion project that goes back over sixty years.

“In 1955, I came to UBC for the first time as an exchange student from Japan,” Tamako says. At the time, such programs were virtually unheard of. Tamako was among the first Japanese exchange students to study in Canada, and her experience at UBC (and later the University of Toronto) was so compelling that she returned home determined to help pave the way for future students—Japanese and Canadian—and continue to build the relationship between Keio and UBC.

Back at Keio University, she helped foster just such a program. “My role was to establish a long-lasting way for student exchanges between UBC and Keio,” Tamako says. She was thrilled to watch the program take off.

Read the whole story on the High Notes blog.

ALUMNI MAKING WAVES

Forces to be reckoned with

Regular Force musicians Katrina Bligh (BMus’09) and Tony Taylor (MMus’18) talk about their careers in the Canadian Armed Forces and why they love it

By Tze Liew

Plaza Sotomayor, Valparaiso, 2018. It is the 200th anniversary of the Chilean Armada. Canada has sent the Naden Band of the Royal Canadian Navy to join in the celebrations. Katrina Bligh (BMus’09), Petty Officer 2nd Class and oboist, is performing in a military tattoo in front of a beautifully lit, palace-like navy headquarters, bringing the gift of music to a plaza full of people. It’s an incredible experience she will never forget.

Becoming a military musician wasn’t necessarily the path Bligh thought she would take when she decided to study music at UBC. Looking back on her university years, she remembers grappling with the question so many students face: What do I do with my music degree?

“I wasn’t sure if I wanted to become an orchestral musician. My mother [Elizabeth Volpé Bligh, a UBC faculty member] worked as a harpist in the Vancouver Symphony Orchestra for 35 years, so I knew very well what it took. But I just wasn’t convinced,” Bligh says.

Then a full-time job for oboe came up in the Regular Force in her fourth year—and Bligh jumped at the opportunity. At the time she had been working part-time in the Reserve with the Band of the 15th Field Regiment, Royal Canadian Artillery and the Ceremonial Guard. After a successful audition, she was assigned to the Naden Band of Victoria, and has worked there for a decade since.

“I was really lucky. Oboe is what we would consider a unicorn instrument, since there’s only one per band—there wasn’t another position open for five years after I got it.”

It may be surprising to learn that there is space for the arts in a regimented, conservative sector such as the military. Most classical musicians end up finding careers in orchestras, freelance work or teaching—not many would think of the military. But in fact, it can be an exciting and varied job for musicians. Starting with a five-year contract as a Corporal or Leading Seaman, military musicians are guaranteed the security of a steady income and extensive coverage of health and social benefits, which isn’t always the case in freelance and orchestral work.

Tony Taylor (MMus’18), a tuba player and Leading Seaman of the Stadacona Band of the Royal Canadian Navy, Halifax, is another UBC alumnus who has found his calling as a military musician. Last summer he played the Changing of the Guard at Buckingham Palace and Windsor Castle, England—something that had always been on his bucket list.

Read the whole story on the High Notes blog.

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