

OUT OF THIN AIR

Invented 100 years ago, the first electronic instrument continues to fascinate, not only for its striking sound and aesthetic, but also for the almost superhuman difficulty of playing it without physical contact. **Mélissa Lesnie** traces its history, and visits theremin school to learn how the devil to tame it.

The maestra stands still as a statue, hardly breathing, in trancelike concentration. Except for her hands. With a few subtle, quicksilver gestures that could be mistaken for sign language, she forms a melody, deftly sculpting the air into music. She controls invisible elements around her with an almost imperceptible flick of the wrist. Her audience sits in stunned silence, spellbound.

This is the iconic image of the theremin: a supernatural aesthetic and sound. It is the only instrument that necessitates no physical contact in order to play it and remains the only space-controlled musical instrument. Over a century of existence, it has been adapted to sundry musical settings from classical to psychedelic rock, its ethereal, tremulous glissando finding a special niche in cult sci-fi and horror films (and who can forget the haunting theme song of *Midsomer Murders*).

Like the Jedi lightsaber, it has found its way, too, to the dark side. Anton S LaVey, founder of the Church of Satan, was reputedly a fine thereminist, initially using it as a device for ghost detection. No instrument has so entranced spectators – and been so misunderstood – since the glass harmonica, which was banned in the 19th century and believed to induce madness. I am the proud owner of a Moog Etherwave, which undoubtedly drives my neighbours mad. My mother has expressed concern about its electromagnetic properties. “Are you sure it won’t give you cancer?”

Despite its sheer novelty value (even Jerry Lewis had a crack at playing it in a skit from the film *The Delicate*

Delinquent), the notorious difficulty of controlling its sound has made the theremin a rare and mysterious creature in live performance. It functions on technology that could be seen as the prototype of touch detection on a smartphone, or capacitive sensing – movement creates interference in the electromagnetic field emitted by a metal pitch antenna (usually the right hand) and a loop-shaped volume antenna (left hand). Without physical contact or visual repair, the result can seem highly unstable, as if playing a violin with a different length fingerboard each time. In the right hands, however, it reveals itself to be a richly expressive and responsive instrument.

Is the theremin victim of its own ‘what the hell’ factor? Regardless of skill level or experience, most players encounter some sort of theremin bashing or musical snobbery. “The clichés are always the same,” laughs Grégoire Blanc, a young French virtuoso. “It’s the alien instrument, the extra-terrestrial with an intergalactic sound. Or it’s a soprano singing off-key. Or worse: it’s just a cool gadget but obviously not to be taken seriously in a musical context!” One seasoned thereminist from Germany I met encounters varying reactions following a public performance. “The biggest compliment is when they are convinced that the live performance was pre-recorded. The biggest insult is when they ask if I also play a real instrument.”

What is the future of such an instrument – will it be forever reduced to an oddity for geeks and ghouls, or will it continue to gain wider musical and cultural acceptance? “The biggest challenge is to make real music with it,”



Clara Rockmore

Blanc insists. “Simply because it’s played remotely with no contact, it immediately impresses the public. It’s possible to play very badly, but most people will still find the result extraordinary! It is an instrument unlike any other, and needs players capable of doing interesting things with it.”

I’VE CREATED A MONSTER

As one might suspect, the inventor of the theremin was hardly a conventional character. The life of Lev Sergeyevich Termen (Léon Theremin) is as mysterious as the instrument that bears his name. Theremin was a physicist, a prolific inventor, a radio operator for the Red Army, a KGB spy, and a keen amateur cellist. Like many of the best inventions, the theremin came about by accident. While 23-year-old Theremin was developing a system to gauge gas density, he noticed that the device emitted a high-pitched squeal as he brought his hand closer, and that the pitch descended as he moved farther away. He baptised it ‘etherophone’, then ‘thereminvox’, in the early stages of development.

The theremin’s electromagnetic field is controlled by two antennae on horizontal and vertical axis: these

two circuits control pitch and amplitude of sound by producing electromagnetic waves, reacting to the water in the body of the player. The result is something like an inverted, invisible cello: the right hand controls pitch, while the left hand creates articulation and dynamics.

Patenting his invention in 1928, the dapper, mustachioed Theremin toured with it extensively in the United States – a great cover for scientific and industrial espionage. It was during a demonstration at Carnegie Hall that he met the Lithuanian violin prodigy that was to become the theremin’s greatest muse and virtuoso.

Clara Rockmore was transfixed by the aesthetic of playing without touching, hands dancing around two antennae. Her perfect pitch and classical training enabled her to advance quickly. Theremin made improvements in response to her demands as a performer, increasing the range from three octaves to five and developing a more responsive left hand to enable rapid staccato passages. She brought a graceful, serene presence and finely-honed technique to classical works now forever associated with the instrument, most famously in Saint-Saëns’ *The Swan*.

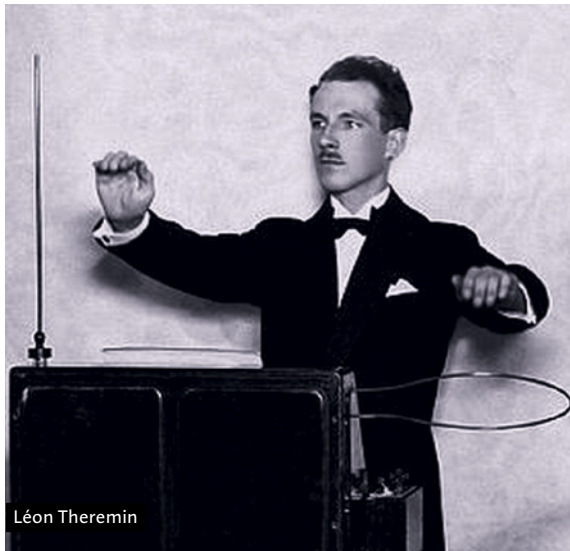


Photo of Carolina Eyck © Christian Hueller

If the theremin has another patron saint, it is a young electronic engineering student by the name of Robert Moog, who began selling do-it-yourself theremin building kits in the early 1950s, a home business that became so successful that it enabled him to found Moog Synthesizers. Among his first customers were musicians in the churches of midwest America, who employed the instrument in services, to ethereal and theatrical effect. Moog remained fascinated by the simple and elegant design, and theremins have featured in his brand's production line ever since.

“ AUSTRALIA'S PERCY GRAINGER, HIMSELF AN INVENTOR OF MUSICAL PRECURSORS TO THE SYNTHESIZER, COMPOSED FREE MUSIC FOR FOUR TO SIX THEREMINS ”

“I became a designer of electronic musical instruments because of my fascination with the theremin,” he enthused. Theremin himself hardly basked in his namesake's heyday, having been forcibly removed from the US by Soviet officials and pressed into working on other inventions – such as the concealed listening device known as the bug – in a secret laboratory in the Gulag.

The theremin was not even patented when it began to intrigue composers. The first orchestral work with a solo electronic instrument was Pashchenko's *Simfonicheskaya misteriya* ("Symphonic Mystery") for theremin and orchestra, which received its first performance in Leningrad on May 2, 1924 with Theremin as soloist. Edgar Varèse, the French electronic music pioneer, conceived *Equatorial* (1934) for two theremins. Not to be outdone, Australia's Percy Grainger, himself an inventor of musical precursors to the synthesizer, composed *Free Music* for four to six theremins, fascinated by the characteristic gliding pitches. Even the great Leopold Stokowski jumped on the theremin wagon, conducting the New York City Symphony in a concerto by Anis Fuleihan. The

Czech Bohuslav Martinů's contribution was a Fantasy for Theremin, Oboe, String Quartet and Piano (1944).

More recently, in 2011, the Finnish composer Kalevi Aho penned a Concerto for theremin and chamber orchestra for Carolina Eyck, one of the world's most revered young soloists today. “Before a composer writes a piece for me, I usually introduce him or her to the theremin in detail. It is wonderful to get new perspectives on the instrument,” says Eyck. “I'm often surprised by a composition and sometimes even think in the beginning that it will be impossible to play. And this is where my work starts: to find new ways of playing.”

Increasingly, virtuoso thereminists are starting to compose for their own instrument, among them Eyck herself, who released an album of her own work, *Elegies for Theremin & Voice* in September, or the Australian thereminist Miles Brown, who was recently commissioned to compose *Pavor Nocturnus* for theremin and the Melbourne Town Hall organ.

“It's still a very young instrument, and players are contributing to the canon,” he explains. “This is why I have focused on original composition. It's exciting to be involved with the early phase of creating new works for an instrument. I love to try it out in new musical contexts and contribute to the broadening of its appeal across musical genres. “These new contexts include dark, atmospheric pieces with classical harpist Mary Doumany in a duo baptised The Narcoleptor.

Australian audiences will have the chance to experience the theremin in both popular classical repertoire and works composed by and for the performer, at this month's Albury Chamber Music Festival with the Dutch thereminist Thorwald Jørgensen. The 39-year-old will give the Australian premieres of his own short work and Simon Bertrand's cycle for theremin and strings, *The Invisible Singer*, with the Acacia Quartet. The almost vocal timbre of the theremin melds tantalisingly with the quartet. If Jørgensen sounds so at ease in this setting, it is undoubtedly because he studied with a cellist, not a thereminist. “I don't know how to play the cello and my teacher didn't know how to play the theremin. But over

and above the technical aspect of MUSE universal [what] we worked on was musical phrasing, vibrato, tuning.”

A world premiere by Australian composer Jessop Maticevski-Shumack has also been commissioned. “I have been working with the composer to make a piece that is not traditional theremin fare. Most pieces written for theremin are dreamy, slow and very melodic. I asked Jessop to write the piece in a total different way, more aggressive and wild, based on rhythm and pulse instead of just melody,” says Jørgensen. This approach is undoubtedly novel to Jørgensen, who originally studied as a percussionist. “I began playing in the percussion section of a symphony orchestra: I felt as an outsider as orchestral percussionist and was jealous of all the violinists who got to play the most beautiful melodies!”

THEREMIN GOES TO HOLLYWOOD

If the theremin is underrepresented on the classical concert stage, it has been almost pigeon-holed in the golden age of Hollywood B-grade horror and sci-fi in the 1940s and '50s. The ‘spooky’ sound also became associated with psychological thrillers and mental disturbance: Miklós Rózsa used it to chilling effect in Billy Wilder’s 1945 film *Lost Weekend* and in Hitchcock’s *Spellbound* the

same year. Incredibly, Shostakovich’s music for the 1931 film *Odná* (Alone) features not only barrel organ, but also theremin. The ultimate master of suspense, Bernard Herrmann let his imagination run wild with an enigmatic theme for the arrival of not-so-friendly extra-terrestrial visitors in *The Day the Earth Stood Still* (Robert Wise, 1951). That same year, Dimitri Tiomkin’s score for *The Thing from Another World* reinforced the theremin’s outer-space pedigree. Lydia Kavina plays theremin in Howard Shore’s soundtrack for Tim Burton’s *Ed Wood*, the film that inspired Miles Brown to take up the theremin; the instrument features in Danny Elfman’s score for the same director’s *Mars Attacks!* In case you doubted it, there is a theremin in Elmer Bernstein’s music for the 1980s classic, *Ghostbusters*.

SCHOOL FOR WIZARDRY

Although captivated by video footage of the instrument since my teen years, it was years before I came into



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THE BEACH BOYS' CHEAT

Think you first heard the theremin in the Beach Boys' 1966 hit *Good Vibrations*? Think again. That warbling octave swoop can be attributed to an instrument developed by trombonist Paul Tanner and an amateur inventor, Bob Whitsell. They created an instrument that imitated the sound of the theremin, with a slide along a horizontal bar, dubbed the Tannerin or Electro-Theremin.

contact with one. I had to know: could a singer with perfect pitch have an advantage when it came to mastering the sorcery required to play it?

I had been eking out opera arias and jazz standards on my Moog Etherwave for three months when I heard about Thierry Frenkel's workshops in Oxford, Leipzig and Colmar. It was time to come out and play with the other thereminists. To improve my technique and deepen my own nascent practice, I travelled to Colmar in Eastern France to meet with the undisputed theremin whisperer himself, in his three-day academy which caters to both budding and established thereminists.

The idyllic Alsatian town of Colmar is better known for its wine and as the birthplace of the sculptor of the Statue of Liberty than as a hub for thereminists. In a charming cobblestone passageway, I rang the bell marked 'Frenkel', a name known to all theremin enthusiasts today, particularly those seeking to repair or enhance their instruments.

Frenkel greeted me warmly and asked me simply to play something. As even breathing heavily can offset the tuning of the theremin, I stood still as the Statue of Liberty. Thirty seconds into a Schubert lieder, he stopped me with a kindly but firm look. "My dear, we are going to press your reset button!" Over the next three days, along with Carolina Eyck, the academy's co-founder, we shaped my rudimentary self-taught gestures into a more precise and efficient eight-position finger scheme, developed and taught by Eyck when she was just 16.

I was one of 18 students in this year's Colmar academy, and quickly discovered that everyone has a different theremin story. Pianists, sound engineers, sci-fi and tech geeks are all attracted to those mysterious gestures.

The academy's chamber music and improvisation classes threw up unexpected hurdles. Put four theremins together in one room and you're likely to get howling interference between the fields, like fighting fish in adjacent bowls. Since the sound is homogenous, if you hear a wrong note you often have no idea if it came from you or another member of the group. That didn't stop quartets taking pleasure in playing Bach's *Jesu, meine Freude* together in sometimes wavering, touchingly vulnerable harmony.

Two themes have emerged from my conversations with thereminists. One was a sense of freedom. "I am stubborn and the more the instrument eluded my grasp the more I wanted to chase it," confides Miles Brown, who studied in Europe with the inventor's relative and protégée, Lydia Kavina. "Lydia showed me that concentration and the development of a meditative playing state were central to really melding with the theremin interface."

Grégoire Blanc, a 22-year-old student at the IRCAM institute of electroacoustic music in Paris, dabbled with piano, cello and trumpet before discovering the theremin at the age of 15. He feels that the lack of physical connection, rather than being a hindrance, liberated him.

"It was a revolution because I'd always had trouble finding a musical instrument with which I could truly express myself. There was always an obstacle: after two years of learning the trumpet, I understood that my body type was not suited to the instrument, it was too physical for me. The theremin has a truly organic dimension. You



Thorwald Jørgensen

Photo © Peter Lodder

slide through space to form a musical discourse with an invisible bow. It's very intuitive," he says.

In Eyck's case, the theremin helped her find her voice, and she has added vocals to her compositions. "I started playing when I was seven years old. Only much later I got into singing. It took a long time to develop my voice to the point where I felt comfortable. People say when I sing I sound like a theremin!"

Charlotte, an academy student from Lille, studied piano before investing in a theremin, captivated by its "unique sound and magic". Suffering from the early stages of Charcot-Marie-Tooth disease, which can result in progressive loss of muscle tissue and touch sensation, to her the theremin represents a particular joy and a challenge: although no physical contact is required, and creating sound in the air has a relaxing effect, the occasional trembling of her hands can compromise the sound.

"It's an amazing connector of unusual people," says Miles Brown. "I've met so many amazing and interesting people by focusing on this unusual instrument and I'm constantly grateful that it has opened so many strange doors for me. I've been able to travel around the world and perform with some of my heroes including Lou Reed, Laurie Anderson, Goblin and Black Mountain. So many unexpected people are huge theremin nerds, and it's always great to make new friends who share a passion for this strange instrument."

"Being an ambassador for the theremin is something I wear as a badge of honour," echoes Jørgensen, who is one of the people in the world we can count on one hand that lives exclusively from his art as a thereminist.

"It has yet to be seen as a fully developed way of making music, but the way things move now I feel that the theremin has a very bright future and maybe in another 100 years it will be as "normal" and common as the saxophone, clarinet or piano."

Thorwald Jørgensen plays at the Albury Chamber Music Festival on November 16 and 17