The Sound Voice Project - Art, Voice Loss, and Bio-technology

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The Sound Voice Project, led by composer Hannah Conway, is a pioneering interdisciplinary initiative that explores the profound connection between voice, identity, and technology. Launched in March 2020, the project brought together people with lived experience of voice loss, researchers, artists, healthcare professionals, and technology developers to create chamber works that address the emotional, social, and scientific dimensions of permanent voice loss. The Sound Voice Project combines two NCACE themes: health and wellbeing and technology for social good, whilst also demonstrating how knowledge exchange and collaboration with the arts can instigate innovation in research.

The collaborators with lived experience of voice loss were at the centre of the project, including individuals who had lost their voice due to throat cancer, Motor Neurone Disease, and Parkinson's Disease. The Sound Voice company, founded by Hannah, was financially supported by an Arts Council England grant and an internal UCL Innovation grant to develop the Sound Voice Project. Through co-creating with care and equality, the project was able to offer new ways for individuals with voice loss to explore their experiences, while also fostering innovation in the fields of healthcare, biomedical research and voice technology.

Background and Vision

The Sound Voice Project was born out of Hannah Conway's own lived experience after her father lost his voice due to a terminal illness. As a composer specialising in opera and participatory work, Hannah had spent 25 years working with the human voice, but her father's condition made her reevaluate the connection between voice, identity and self-expression. Hannah had been exploring the possibility of cross-disciplinary work around this theme when she was introduced to Martin Birchall, professor of

laryngology at UCL and a consultant in ENT surgery at the Royal National Ear Nose and Throat and Eastman Dental Hospital. A world-leading academic otolaryngologist, Martin was principal investigator on RoboVox, a groundbreaking research initiative developing implantable, soft, robotic larynxes, when Hannah approached him with the idea of creating chamber works exploring voice loss. Birchall's team at UCL, along with professionals from sectors including biotechnology, healthcare, and commercial companies like CereProc, became integral to the Sound Voice Project.

The Sound Voice Project
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Collaborative co-creation

The collaborative project developed over three years, culminating in a series of chamber works. Hannah reflects that she didn't enter the project with an expectation of collaborating with a research team. As a composer, she wanted to create work around an issue she was grappling with personally through reflecting on different expertise and experiences. So she was surprised to hear that in 30 years of being a laryngectomy professor, Martin admitted that he had learned more about voice through the Sound Voice Project than in his whole professional career. The academic collaborators from UCL were also able to approach their research in completely different ways that allowed them to break out of traditional disciplinary silos.

Tanja
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Other partners included CereProc (a speech synthesis company), and ElectroSpit (a music technology developer) - all of whom are engaged with advancing voice technology and driving innovation in the use of digital tools to synthesise and extend the human voice, particularly in reconstructing voices for individuals who have lost their vocal abilities.

The Sound Voice Project collaborative partners explored two key questions:

1. How do people navigate their identity when they lose their voice?
2. How can technology and music be used to give individuals with voice loss new ways to express themselves?

As the COVID-19 pandemic emerged in 2020, the collaboration transitioned to remote co-working, bringing medical researchers, technologists, lived-experience experts and artists together in creative engagement sessions where they could explore the human voice through singing, creative writing, and discussions about voice's role in their lives. The Shout at Cancer and Sing For Joy (Parkinson's) choirs were also key participants and group singing sessions were used to level the playing field, creating an egalitarian space for participants to share their stories. These intensive two-hour sessions took place every couple of weeks for several months, and

were designed to unpick what it means to have a voice and how individuals cope with the permanent absence of their voice. Hannah reflects how the workshops revealed the 'tension between our born vocal identity, and a new vocal identity when you have no voice box, when it's removed.' The workshops were led by artistic director Hannah Conway and writer Hazel Gould and included:

- 43 participants with lived experience of voice loss
- 6 family members and friends of the participants
- 10 healthcare professionals
- 8 biomedical researchers/technology developers
- 7 musicians/artists
- 3 students

Following the workshops, Hannah shaped the ideas and themes that emerged into six short operatic compositions, which included:

Can You Hear My Voice - This piece originated from a poem written by Sara Bowden-Evans, who was unable to speak for two years after being treated for throat cancer

Paul - This 'dual aria' invited audiences to understand what 'voice' means to Paul Jameson, as he begins to lose his speech due to motor neurone disease.

The Willow Tree - This piece chronicled a fairy tale scene in which the Willow Tree, an ancient spirit who steals and consumes the voices, identity and soul of humans, is a personification of Parkinson's Disease.

I Left My Voice Behind - This composition explored how the voice links us to our past, present and future identities, including vocal potential enabled by science and technology.

Tanja - This duet charted a professional actor and singer's journey recovering from life changing surgery cancer behind her vocal cords

Your Voice - This was a song about memory of voice, faded dreams of people and those who have witnessed their life journeys.

The six compositions were recorded and performed live and six performance films were created, documenting the process and the stories behind the pieces. From these six compositions, three immersive opera-video surround-sound installations were developed. These were paired with a live concert developed for the stage, which premiered at the Britten Pears Arts Festival. The Sound Voice Project has also exhibited at Kings Place, The Cheltenham Festival, Copenhagen Documentary Festival, Sheffield DocFest and the Royal Opera House.

I Left My Voice Behind
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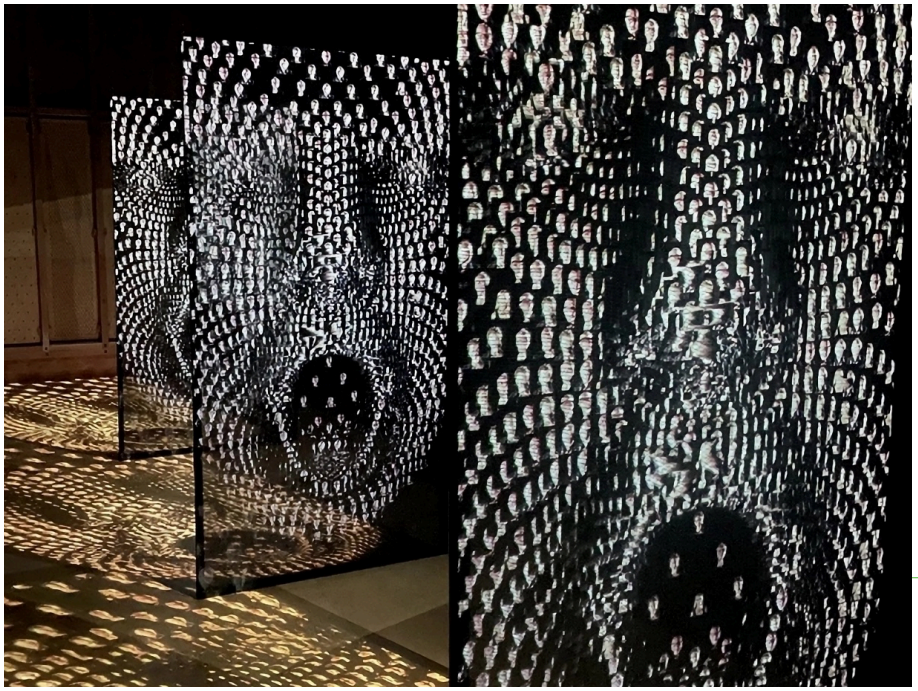
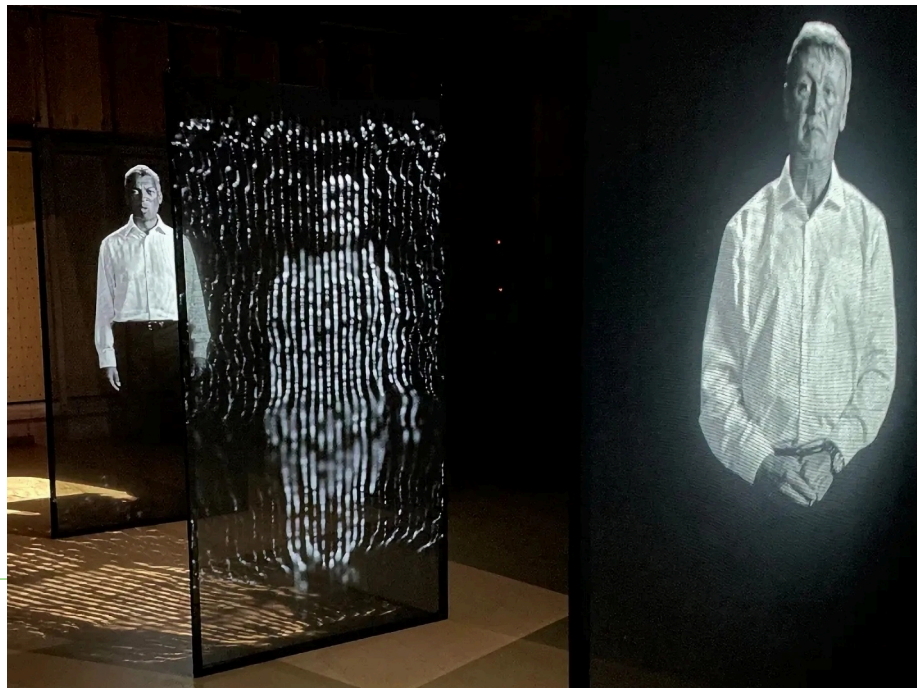


Art instigating research innovation

The chamber works included a digital chorus created from voice samples of the Shout at Cancer performers pre cancer, before the removal of their voice boxes. Hannah worked collaboratively with commercial company CereProc, a speech synthesis company who were running trials on making sung digitised voices from real spoken voice banking. Hannah wanted an ensemble sound for a choral sample that was made from the banked voices of all the choir members pre-cancer and CereProc developed new programming in order to produce the digital chorus featured in the chamber works, which has words attached to the melodic line. This was a new innovation in the field of voice synthesis.

Hannah also worked with Electrospit, a company which produces a talk box that is worn around the neck as an instrument and used by the likes of Stevie Wonder. Sound Voice worked with the founding director of Electrospit in the United States to develop different applications for the instrument so that it could help someone post-laryngectomy to be able to sing at pitch.

Martin Birchall's RoboVox research team were funded by the Wellcome Trust to develop a robotic replacement to the voice box. But participating in the Sound Voice Project revealed to the team that what they were trying to do wasn't aligned with what their patients truly needed. As a result, the team pivoted onto a completely different track, which has led to three different spin out technologies that will benefit people who've lost laryngeal function in different ways. Martin Birchall attests that the team would not have gained that appreciation without the engagement with people with lived experience through the Sound Voice Project. One of the most interesting and unforeseen outcomes of this project was that it has been a catalyst for innovation and change of practice across the medical tech sector. The American regulator the Food and Drug Administration (FDA) has now made it compulsory for patient involvement in the development of any drug or device, and Hannah's approach at collaborative engagement offers a blueprint for ensuring patient needs and voices are not only heard, but integral to these processes.



Paul
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Recognition and Impact

The Sound Voice Project has been featured across national media, television and radio stations, including the Guardian, the Observer, the Sunday Times, BBC Radio 4, BBC Breakfast TV, BBC Radio 2 and BBC Sounds. It has been awarded four prizes for the works, including an Ivor Novello Award, the Classical:NEXT Innovation Award (global prize) and the prestigious European Fedora digital prize. The impact on participants has included profound emotional and creative development, particularly improving the emotional wellbeing of those participants with experience of voice loss. Many described the process as emotionally transformative, helping them process grief and regain a sense of identity after losing their voice. Participants reported increased confidence in expressing themselves creatively, despite their physical limitations, and that connecting with others who had similar experiences helped participants feel less isolated and more understood. Healthcare Professionals and researchers report gaining a deeper understanding of the emotional and psychological dimensions of voice loss, fostering greater empathy for their patients. Researchers reconsidered their approaches to speech synthesis and medical devices, with some mentioning that the project had opened new funding opportunities and led to the development of more human-centred solutions. For the artistic practitioners involved, the project offered a rare opportunity to explore voice and identity in collaboration with healthcare professionals. The experience deeply enriched their creative practice, resulting in works that have universal relevance combined with intrinsic emotional depth.

Legacy and Future Work

The Sound Voice Project has proven to be a powerful example of how art can catalyse change, offering new ways of thinking about voice loss and its impact on identity. By bringing together artists, researchers, and individuals with lived experience, the project has created a collaborative space for exploration, resulting in emotionally resonant and socially impactful works. The project's approach to combining art with technology has also influenced the development of new innovations in voice synthesis and medical devices, and demonstrated the value of involving artists in medical and technological developments. Sound Voice has created a model that can be applied to other healthcare fields to improve patient engagement and influence how technology can really be leveraged for social good.

As Hannah reflects, '(when) you get people with lived experience and interdisciplinary professionals in one space, and it's an artistic exploration that everyone's doing, the arts are at the centre and are a catalyst for it. It does instigate innovation. Innovating thinking and innovating practice, and innovating the ways that people are developing what they're doing, that enables people to better understand what other people need, essentially, and that's been at the heart of everything that Sound Voice has done ever since as a company.'

Looking forward, Sound Voice aims to take its artistic outputs to a wider audience through exhibitions, media, and tours. The project also plans to apply its collaborative model to other areas of healthcare, continuing to innovate and give voice to those whose stories have often remained unheard. By challenging traditional views of voice loss and its emotional, social, and technological implications, The Sound Voice Project redefines the role of art in addressing complex societal issues.

Further information:

The Sound Voice Project - https://soundvoice.org/work/the-sound-voice-project
Installation clip: I Left My Voice Behind - https://www.youtube.com/@-soundvoice2315
For Sound Voice's other collaborative works, see https://soundvoice.org/work
Professor Martin Birchall : University College London Hospitals NHS Foundation Trust - https://www.uclh.nhs.uk/our-services/find-consultant/professor-martin-birchall
Electrospit – https://www.electrospit.com
UCL researchers and the Royal Opera House combine for 'radically different' installation | UCL News - UCL – University College London - https://www.ucl.ac.uk/news/2024/nov/ucl-researchers-and-royal-opera-house-combine-radically-different-installation
Innovation Award – Classical:NEXT - https://classicalnext.com/innovation-award