

Annie Goh (b. 1984, UK)

Myths of Echo, 2021

Sound installation in three parts

Courtesy of the artist

Annie Goh is an artist, researcher and performer working with sound, space and electronic media. Titled 'Sonic Knowledge Production in Archaeoacoustics: Echoes of Elsewhere?', her PhD thesis focused on 'archaeoacoustics', or sound archaeology, which is the study of acoustic properties of archaeological sites.

The three-part sound installation *Myths of Echo* draws on Goh's extensive research into the practices of archaeoacoustics researchers, and combines voice, narration, field recording and synthetic sound. Combining theoretical reflection with creative processes, Goh questions the neutrality of science and philosophy, using what she calls 'sonic cyberfeminism' to question the relationship between sound, gender and technology.

Part 2: The myth of 111Hz

2.1 channel audio track, 9 minutes. Plays twice an hour.

The frequency of 111 Hz is believed to have healing effects, triggering the production of endorphins, which relieve pain. This practice is evidenced by thousands of YouTube videos where the 'divine frequency' can be heard, aimed at evoking its powers. The myth of 111 Hz has its origins in archaeoacoustics research. All spaces vibrate at particular frequencies, depending on their size, shape and structure. Chambered mounds, such as those found at Newgrange in Ireland and Chun Quoit in Cornwall, have a resonance frequency of 95-120 Hz, often 110 Hz. Archaeoacoustic researchers have linked these mounds with ritual activity, suggesting a connection to the frequency of an average male voice. The same frequency range was also used in a neurological pilot study in 2008, which suggested that 111 Hz prompted a positive shift in emotional states, as evidenced in recordings of brain activity. Despite this research being contested, the myth around 111 Hz as a healing frequency has persisted.

The sonic material of this installation is produced by a Yamaha FS1R digital synthesiser. Released in 1998, the Yamaha FS1R was one of the first commercial synthesisers to offer 'formant shaping', a synthesis technology that could simulate human vocal sounds. In *The myth of 111Hz*, the synthesised and non-gendered human voice is at the centre of the composition, refuting the conclusions drawn by archaeoacoustics researchers about the specifically male vocal frequency. The use of the audibly artificial voice alludes to the work of the feminist theorist Sophie Lewis, whose book *Full Surrogacy Now* (2019) argues for new forms of queer kinship and forms of technological reproduction beyond the gender binary.

Mastered by AGF.

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Part 1: Cyber-quetzal

Ultra-directional loudspeakers, oscillating mechanism, generative sound synthesis code, Mac mini, motion sensor

The El Castillo pyramid is a site of archaeoacoustic interest, found in the centre of the Mayan city of Chichén Itzá in Yucatán, Mexico. This installation takes inspiration from the archaeoacoustic phenomenon of a 'chirping echo', where a handclap is reflected by the pyramid's steps into an echo that resembles the sound of a bird. In *Cyber-quetzal*, Goh re-creates the fleeting sound of a quetzal in-motion. The quetzal is important to Mayan and Aztec culture. The small, strikingly coloured bird is connected to Xochiquetzal, an Aztec goddess of fertility, beauty and love, who is emblemised by flowers and bright feathers. In this installation, Goh has imperfectly replicated the chirping echo in sonic virtual space. Instead of a human handclap at the pyramid steps, a simple computer-generated impulse is digitally echoed against the number of steps of the pyramid – ninety-one – and the resulting cyber-chirp is correspondingly artificial.

El Castillo is also a site of astrological significance: at both spring and autumn equinoxes, crowds gather at sunset to observe the sun cast a shadow that ripples down the steps like a snake. As a nod to this ritual, the chirps increase in frequency as the exhibition nears the winter solstice on 21 December.

With thanks to Alberto de Campo for sound programming in SuperCollider.

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Part 3: The Echoing Mother

Engraved mirror, audio track, media player, headphones.

The drawing on the engraved mirror depicts an imaginary archaeological site, bringing together three different locations the artist has visited, which are sites of sonic significance and goddess or matriarchal worship. The audio composition weaves together different voices: one that represents a sobering, scientific approach to the archaeological site; one that represents a romanticised view of female-icon worship; and one that meditates somewhere between these two poles. The composition features original improvisations on a Moog synthesiser, an analogue model aptly-named the 'Matriarch', as well as recordings of an improvised performance of audio feedback that took place at Art-Villa Garikula, Georgia, in 2018. The interwoven narratives bring into question different interpretations of history – and constructed truths – that co-exist when it comes to the distant past. It also raises questions around the romanticised, and often conservative, narratives around the figure of the matriarch, particularly in relation to kinship, reproduction and parenthood.