AURALROOTS (2014)

THREE SONIC ENVIRONMENTS

Play acoustic sculptures based on the stereocilia from the inner ear to hear oral history stories from first Australians and combine them with learning through other acoustic ecologies .

AURALROOTS: THREE RELATED SONIC ECOLOGIES

AURALROOTS encourages the audiences to explore our tactile and aural sensory perception. by exploring oral histories alongside immersive experiences. It invites viewers to interact with 24 hanging sculptures to trigger compositions which can be heard on wireless headphones. The sculptural forms are inspired by the functions and forms of the stereocilia, tiny inner and outer hair cells on our auditory nerves located in the organ of Corti in the cochlea. AURALROOTS offers a metaphorical learning experience about how we learn from being embodied in three different sonic environments: (A) as a growing embryo immersed in the womb, (B) as a daughter listening to her mother's oral stories and finally, (C) as a female artist communicating with auditory scientists. The overall aim is to explore how sound and memory are relatred by giving the viewer the capacity to imagine they are immersed inside each sonic environments. The project accumulates tactile and sound knowledge from the purest forms of embodiment – either from being immersed inside the womb, from being able to learn to survive from storytelling in the natural environment or from learning about hearing problems in the laboratory.

TWO VIEWERS ENJOY THE ORAL HISTORY STORIES IN AURALROOTS. ZEMAK, POLAND. (2014).

THE IDEA BEHIND AURALROOTS

AURALROOTS was developed during an artist-in residency in Symbiotica at the University of Western Australia. It presents three compositions to explore how knowledge is transferred. These three compositions demonstrate that although learning is always "situated" in a particular environment, different forms of sonic knowledge can co-exist simultaneously. At different times in our lives our senses work together to learn but it is the accumulation of this knowledge that regenerates the learning process.

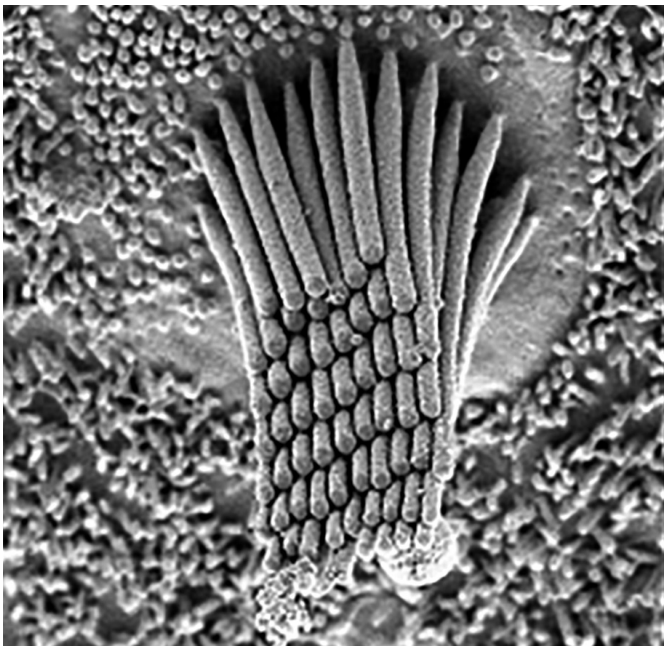
Composition A - in the womb - is a combination of sound, tactile and tacit information based on the embryonic experience in this environment, Here tacit knowledge is difficult to transfer to another person by means of writing it down or verbalizing it.

In composition B - oral stories - the holder of information must be integrated into a network or a community of practice for survival. Here, tactile, and sound transfer is related to beliefs, ideals, values, schemata and mental models – a more cognitive dimension of information that shapes the way that children learn to survive in the world. These stories are based on research into oral histories told by First Nation aboriginal women to their daughters. These stories were written and recorded with indegeous Australians at Koori Radio Station, Gadigal Information Service, Sydney, Australia

Finally, composition C - education - explores how different forms of information always exist in dialogue with other forms of knowledge and are transferred in a horizontal way: one that is dependent on co-productive stimulation and participation of adults. These recordings are from the Auditory Lab at the University of Western Australia.

By presenting these sonic options, AURALROOTS explores less formal, codified, or explicit forms of knowledge, based on place time and storytelling. The aim is to encourage a new research trajectory that can form the beginning of the history of sound from a eco-feminist perspective!

A VIEWER USES THE SENSE OF TOUCH TO TRIGGER THE SOUND COMPOSITIONS ON THE STEREOCILIA SCULPTURES.



TOP LEFT /
EXPLORING THE HARMONICS OF THE OUTER STEREOCILIA

BOTTOM LEFT /
A SCANNING ELECTRONIC MICROSCOPE IMAGE OF THE STEREOCILIA

RIGHT /
EXPLORING THE VOLUMES AND SOUNDS OF THE INNER STEREOCILIA

ART INSPIRED BY INDIGENOUS ORAL HISTORIES AND AUDIOLOGY

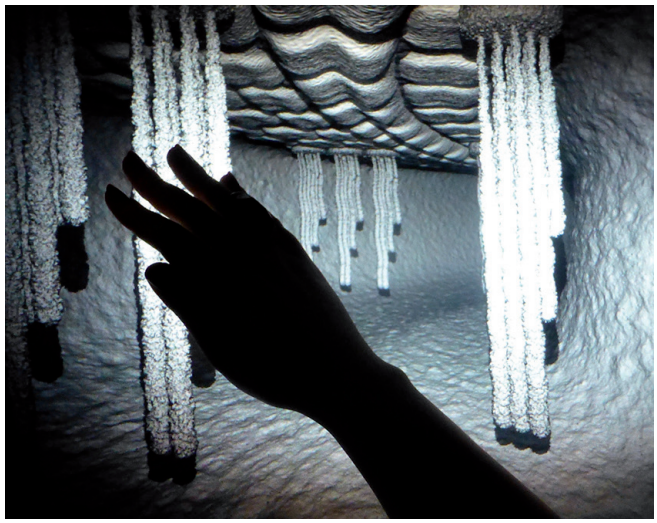
Here, the metaphor from the arts is to be shrunk down to a nano-meters scale and find yourself standing inside the Organ of Corti in the cochlea and playing with the stereocilia. Images of them under a SEM Scaning Electron Microscpe resemble roots from medicinal plants. Therefore AURALROOTS reveals oral history stories from traditional aboriginal cultures about the healing benefits of wild plants and roots. Sound is essential for survival and to remember the gifts from the environment around us. Scientists are currently interested in stories about such plants for their medicinal potentials.

AUDIOLOGY: Healthy stereocilia are necessary for human hearing. They react to the movement of two membranes (tectorial/basilar) and are surrounded by fluid. This movement has a shearing effect on the stereocilia, which then transmit information to the auditory nerves to the mid-brain and the auditory cortex. In our embryonic states, hearing is one of the first senses to develop. In AURALROOTS, the outer and inner hair cells have different roles to play in different acoustic ecologies. The aim is to allow the viewer to explore these associative metaphores about tacit knowledge and anatomy.

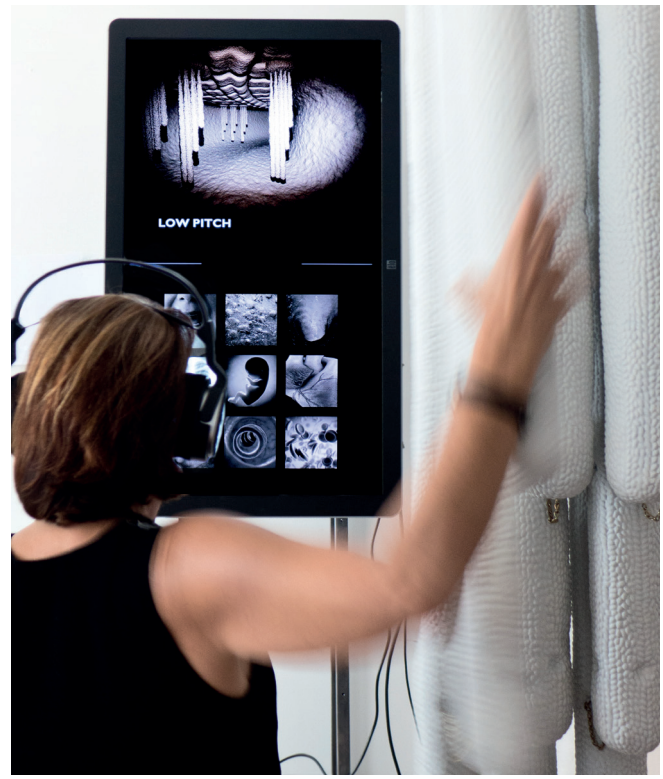
THE HAPTIC INTERACTIVE EXPERIENCE

In AURALROOTS, one set of these sculptural models interprets volume and the other set mimics harmonics. The viewers can mix and manipulate up to 54 sound tracks to be heard on wireless headphones. Interaction with the inner cells set in the cochlea produce harmonics. Playing with the outer hair cells change the volume of the sound samples. The viewer can mix the equalized soundtracks in real-time and change the compositions by touching an animated visualization of the cochlea on a screen. This action triggers three sound compositions. (A) low pitch compositions from the womb, (B) medium pitch stories and landscape sounds from Australian environments and (C) high pitch compositions from the science lab.

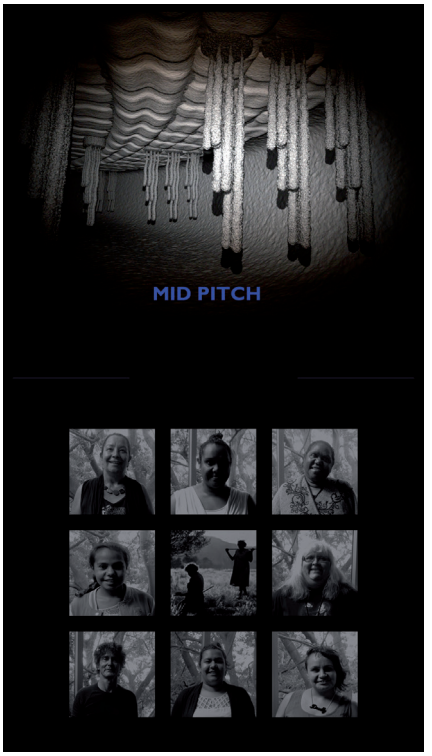
AURALROOTS is programed with Max MSP and C++. The stereocilia swing on balls that are connected to joysticks and all positions on these 120°-degree axes are sent from the joysticks to the C++ program on a Mac mini computer, where 54 sound samples are stored for three compositions. The viewers have responded with fascination and contemplation. They can play alone or with others to create new compositions. Because AURALROOTS has been built based on the behaviour of the stereocilia and oral history stories, the sound compositions encourage the audience to combine touch, sound, and embodied experience in this unique haptic platform.

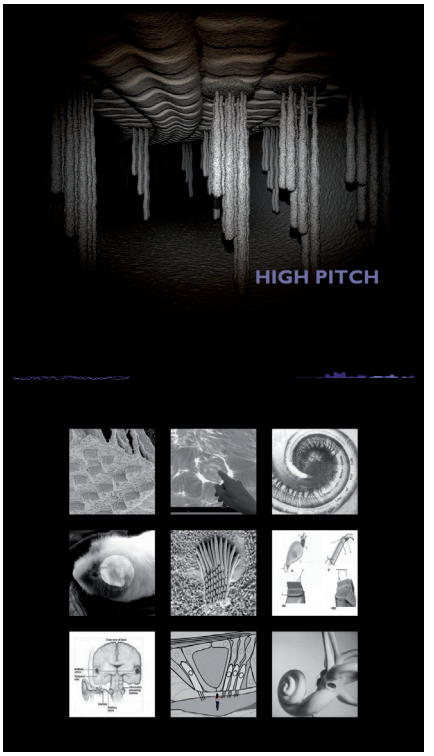


TOUCH SCREEN USED IN AURALROOTS TO TRAVEL UP AND DOWN THE ORGAN OF CORTI TO SELECT THE SONIC ENVIRONMENTS.



THE LOWER SCREEN REVEALS VISUAL INFORMATION ABOUT THE HIGH, MEDIUM OR LOW PITCH SOUNDS.





(LEFT) LOW PITCH SOUNDS RECORDED FROM CONTACT MICS IN THE WOMBS OF SIX WOMEN.

(MIDDLE) MID PITCH STORIES ABOUT MEDICINAL PLANTS FROM INDIGENOUS ORAL HISTORIES UDED TO TEACH DAUGHTERS WHERE TO HARVEST PLANTS
ACTORS: KHI-LEE THORPE, WANDJINA SMITH, LILLIAN CROMBIE, ELAINE CROMBIE, JINNY SMITH, LYN- PAULETTE WHITTON, LILY SHEARER.
COACH: FRED COPPERWAITE. RECOEDED AT THE KOORI RADIO STATION IN SYDNEY, AUSTRALIA

(RIGHT) HIGH PITCH SOUNDS FROM THE AUDIOLOGY LAB AT THE UNIVERSIY OF WESTERN AUSTRALIA WHERE THEY WORK ON EAR PROBLEMS.

CREDITS

PRODUCTION CREDITS
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EXHIBITION HISTORY

2022 | Sonic Ecologies., Gleis 70 . ART ZURICH
2016 | Grounded Visions. The Swiss Federal Institute of Technology. Institute for Integrated Biology. Grounded Visions was part of Co-Op 21 Arts Festival Paris
2015 | Anatomical Museum Basel, University of Basel, Switzerland
2014 | Sensoria: Premier of AURALROOTS, ZEMAK, Poland

LINKS
www.jillscott.org

FUNDING
Pro Helvetia, The Swiss Arts Council
SymbioticA, University of Western Australia

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