

Future Memory: Womb Sound As Shared Experience Crossing Time and Space

Maile Colbert

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Abstract

This Month will feature a two-part post by SO! regular writer Maile Colbert. Look for Part Two on Monday, January 19th. — I was a child obsessed with time travel. Beyond favorites such as *A Wrinkle in Time* and *Time Bandits*, I perpetually daydreamed of the ability to pause, reverse, and

fast-forward my life.

Keywords

Music (Subfield), Acoustic Ecology, Acoustics, Article, Field Recording, Language

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I was a child obsessed with time travel. Beyond favorites such as *A Wrinkle in Time* and *Time Bandits*, I perpetually daydreamed of the ability to pause, reverse, and fast-forward my life. I had a book on the “olden days” and it amazed me that my great-grandparents, whom I had the fortune to know, had lived them. I wanted to fast forward and see myself *their* current age, telling stories to the next generations of a good life lived. I used to entertain the thought that if I let my breath go and let myself sink to the bottom of a body of water, I could pause time, or at least slow it down, as the sound of the fluid world around me seemed to suggest. Whenever my family moved, I made a time capsule, and I always scanned the ocean for long lost bottled messages. These were the beginnings of my future in time-based media—both image and sound—my love for found footage, and my recent research and writing on sound back in time.

Now as a new mother, I am beginning to think about the future in a way I hadn’t before. I see my mother in my daughter, and I see her mother, and my partner’s mother. I recognize my grandfather’s eyebrow when furrowed, and her grandfather’s nose. My mouth when smiling, my partner’s mouth when in concentration.

And our ears. . . our very sensitive hearing, almost like a punch line. Our daughter is truly the daughter of sound artists. In this first post of a two part series on humans’ earliest interactions with sound, I document our work sounding and listening together, which began in a future-oriented past I am still learning about.

Womb

There was a study in which doctors gave babies only a day old pacifiers connected to tape recorders. Depending on the pattern of the new babies suck, the tape recorder would either switch on the sound of the mother’s voice, or a stranger’s.

“Within 10 to 20 minutes, the babies learned to adjust their sucking rate on the pacifier to turn on their own mother’s voice,” says the study’s coauthor William Fifer, Ph.D., an associate professor of psychiatry and pediatrics at Columbia University’s College of Physicians and Surgeons. “This not only points out a newborn’s innate love for his mother’s voice but also a baby’s unique ability to learn quickly.”

– “What Babies Learn in the Womb,” 2014, Lara Flynn Maccarthy, Parenting

My daughter Odette knew my voice the moment she was born. In a strange, bright, cold new world, it seemed one constant she could rely upon. When she was first placed upon my chest, I started to sing to her, and she was calming, staring at me, as much as her newborn eyes would let her, with an expression of surprised recognition, as this familiar voice sang a familiar song, one I sang her often in the womb. One I knew by heart because my mother would sing it to me when I was a child.

<https://vimeo.com/110702430>

Are you going to Scarborough Fair
Parsley, sage, rosemary and thyme
Remember me to the one who lives there
She once was a true love of mine. . .

The mother's voice comes to the fetus not solely as ambient sound through the abdomen, as other external sounds and voices would, but also through the vocal cords' internal vibration. There is a direct connection, a shared space. As early as the seventh month, a fetal heartbeat will slow and calm to the sound of the mother's voice, and research has shown newborns even prefer a similar version of their mother's voice to what they heard in the womb, muffled and low. When Odette suffered colic in her early months, one sure way to help comfort her was to sing to her while she was on my chest. Aside from the close contact of skin, the familiar smell, the warmth, it could be that hearing my voice also through the chest mimicked the womb filter.

In the tape recorder study, researchers also noted that newborns would suck more intensely to recordings of people speaking in the language of their mothers, most likely picking up on the melody and rhythm. We are beginning to understand that learning starts in the womb.

Fetal Soap Addiction

Carmen Bank found her 1985 pregnancy rather boring. So, to pass the time, she started doing something she would never have dreamed of: watching a soap opera.

Unexpectedly, she found herself hooked. And so she spent almost every morning in front of her television set, ready for the familiar theme of "Ryan's Hope." After Melissa was born that October, Bank bought a videocassette recorder so she could tape the show when she was too busy to watch.

Bank isn't sure when she discovered the behavior, but, shortly after Melissa was born, Bank realized that the baby seemed to recognize the "Ryan's Hope" theme and would stop fussing when the program began.

"She'd just sit there and watch the whole introduction and then she would start imitating what they do on the show," Bank said. "This has been going on forever."

-The Very Young and Restless, Do Soaps Hook the Unborn? June 28, 1988, Allan Parachini, The New York Times

My third trimester was a rough one. I was a walking swimming pool of about forty pounds of baby and amniotic fluid. My pelvis had gone completely out of line, making even that pregnancy waddle slow and difficult. Needless to say, I was less and less mobile. I was lucky that much of my remaining work was writing and studio based, but often found myself having to take mental breaks as well. My body/mind chemistry was working overtime. Something that happens with

pregnancy when preparing mentally for your new, shared life is to think a lot about your own childhood. I was lucky to have a happy one, and so strong nostalgic feelings and memories would come up, particularly around the television show *Dr. Who*. I used to spend a happy hour with my father once a week watching reruns from the 70's in the 80's.

Dr. Who returned to broadcast in the 2000s, in a few new successful regenerations. The new iteration uses a lot of the classic themes, characters, and even remixes and re-masters the the original opening score written by Ron Grainer and realized by the great Delia Derbyshire for the BBC Radiophonic Workshop in 1963; the *Dr. Who* theme was one of the very first signature electronic music tunes, and performed well before commercial synthesizers were even available. Derbyshire used musique concrete techniques, cutting each note individually on analogue tape, speeding up and slowing down to create the notes from recordings of a single plucked string, [white noise](#), and the simple [harmonic](#) waveforms of [test-tone oscillators](#). ([Grainer was famous for asking after hearing Derbyshire's magic, "Did I write that?". Derbyshire replied "Most of it."](#) The BBC, who kept members of the Radiophonic Workshop anonymous, prevented Grainer from giving Derbyshire a co-composer credit and a share of the royalties.)

It is a really, really catchy tune:

<https://youtu.be/CM8uBGANASc>

While Odette was in the womb, I watched all of those decades addictively, one after another. When I came across the soap opera study after she was born, I decided my obsessive *Who*-watching had set up a perfect laboratory to try it out myself. We started in 1963 and moved through time with the Doctor. Odette looked up in surprise and her brow furrowed in concentration. She looked around slowly at first, then faster and faster. She smiled; she cooed; she laughed. She started to flap her arms.

<https://vimeo.com/111509900>

When I finally turned it off, she stopped everything and looked concerned. I turned it on again and we danced together in clear recognition of this already-shared future past sonic moment, one I had with my father and now with her. Now I understood that as I consumed *Dr. Who*, Odette was not only hearing, she was learning, and beginning the act of listening.

Sounds have a surprising impact upon the fetal heart rate: a five second stimulus can cause changes in heart rate and movement which last up to an hour. Some musical sounds can cause changes in metabolism. "Brahm's Lullaby," for example, played six times a day for five minutes in a premature baby nursery produced faster weight gain than voice sounds played on the same schedule (Chapman, 1975)

-The Fetal Sense, A Classical View, David B. Chamberlain, Birth Psychology

Wombscapes

Odette's very first movements, her first "quickening", was in response to David Bowie's "Starman". This was around 16 weeks, often the time for first movements in the fetus, and interestingly also the time when the hearing has developed. The fetus floats in a rich and complex soundscape; it is anything but quiet. The womb filter...amniotic fluid, embryonic membranes, uterus, the maternal abdomen-low frequencies, and blood in veins whooshing, then Mother's voice and body noises such as hiccups and the gurgles of digestion and of course, the heartbeat. The Mother's heartbeat can be as loud as a vacuum cleaner and ultra sounds as loud as a subway car arriving in a train station. We can try to mimic the womb-scape, imagining sounds being filtered through the body. We can use a hydrophone—a pressure microphone designed to be sensitive to soundwaves through fluid matter—on the abdomen to get an idea and sample for our womb-scape.

Perhaps it would sound something like this...

...reactive listening begins eight weeks before the ear is structurally complete at about 24 weeks. These findings indicate the complexity of hearing, lending support to the idea that receptive hearing begins with the skin and skeletal framework, skin being a multireceptor organ integrating input from vibrations, thermo receptors, and pain receptors. This primal listening system is then amplified with vestibular and cochlear information as it becomes available. With responsive listening proven at 16 weeks, hearing is clearly a major information channel operating for about 24 weeks before birth.

-The Fetal Sense, A classical view

Sound artist and Acoustic Ecologist [Andrea Williams](#) has been recently working on a composition for Bellybuds, for her yet born nephew. [Bellybuds](#) are "a specialized speaker system that gently adheres to your belly & safely plays memory-shaping sound directly to the womb." Much of her work is composed with space in mind, using room sounds in a live performance situation. Williams told me it was interesting thinking about the womb as a new "venue," with her little developing nephew as her audience. "What is he hearing?" she asked, "will he recognize me right away upon meeting him for the first time if he only hears the sound of my voice through the Bellybuds while he is a fetus?" I love the idea that she could send a "hello" from one place to her nephew in the womb in another.

The more we understand and realize about fetal hearing and processing sound, the more we understand how fetuses can detect subtle changes and process complex information. Memory starts to form around 30 weeks, and it's possible early sound interventions at this time could help babies with detected abnormal development. Speaking and singing to the unborn fetus, allowing them to experience different soundscapes while still in the womb, helps shape their brains. This is probably why the urge to do so is there.

...Odette's first dance. Odette's first songs. ...transcending time and space.

I

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dedicated to Odette Helen, and to the family, daughter, and memory of [Steven Miller](#)

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Featured Image: *Odette's Birth Cry*, photo credit Rui Costa

The album Future Memory, for Odette will be released in 2015 through [Wild Silence](#). A dedication album to a newborn daughter...a mix of her parents' recorded and shared sounds, memories, hopes, and dreams towards a future with her. Sounds of her womb-scape, birth, and first year... music in collaboration with friends and family across oceans and land...an album of lullabies for Odette.

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[Maile Colbert](#) is a multi-media artist with a concentration on sound and video who relocated from Los Angeles, US to Lisbon, Portugal. She is a regular writer for Sounding Out!

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