VOICING

Martin Backes

Marcus Coates

Michelle Jaffé

October 21 – December 22, 2017

MARTIN BACKES, (DL)
what do machines sing of?
2015

Variable (22 min)
University of Art Berlin
Prof. Dr. Alberto de Campo, Hannes Holzl, Prof. Joachim Sauter, Fredrik Olofsson
Whitney Houston, R.Kelly, Toni Braxton, Bryan Adams, Celine Dion

MICHELLE JAFFÉ, (USA)
Wappen Field
2013

Time Variable
David Reeder, Code Design & Development
Ayelet Rose Gottlieb, Music Director & Vocalist
Vocalists: Akim Funk Buddha, Nick Hallet, Kyoko Kitamura,
Jeremiah Lockwood, Sofia Rei Koutsovitis, Fay Victor
Bob Bielecki, Audio Consulting

Marcus Coates, (UK)
DAWN CHORUS
2007

18:11 min
Wellcome Trust, London
Geoff Sample, Wildlife Sound Recordist
18 Bristol Choristers

Curators
Sarah Joyce & Gordon Duggan

VOICING

Scholars and Scientists have long been captivated by the origins of human speech & language and how we communicate through voice, song. VOICING presents three artists from three countries. Through their work they explore the evolution, boundaries and emotional territories of the human voice from bird song through digital code.

Voicing describes the manipulation of notes and chords in any sound-producing entity; human, bird, or instrument, thus changing the personality of a tone and altering its emotional quality. We control the emotional qualities of our voice instrument in ways we're not even aware of; modulating expression through delicate physiological increments, reappraising our feelings in fractions of a second, redirecting signals in the blink of any eye. Although the mechanisms behind the production of vocal emotion are unclear, scientists have observed that when listening to another emotional voice, our own emotional state can radically change. One of the most effective ways humans communicate emotion is through song.

We don't quite know when, how or why we began using language, but many believe the first attempts were made through song. Human Language allows us to communicate and share complex ideas in flexible ways. Gestures may well have been the earliest form of communication in our modern primate ancestors. The vocal tract that allows us to speak arrived much later, about 100,000 years ago, and then gradually evolved to become a complex instrument.

Aristotle noticed the ability of songbirds to express emotion through song, and noted the uncanny resemblance of bird song to human language. Two thousand years later Darwin noticed the same thing when he remarked; 'all the members of the same species utter the same instinctive cries expressive of their emotions'. We now know there is a remarkable level of genetic similarity between vocal learning in humans and songbirds. They learn songs by imitating their elders; stuttering and burbling

when young... progressing from baby talk to full vocalizations. Like humans learning to speak, songbirds learn to sing from their elders. They learn songs better in their youth, and have to practice to get better. They can improvise and string riffs into new songs. They learn melodies that have one single meaning, but like us, birds can reorganize these melodies to form diverse new meanings.

We combine music and speech in ways that are intuitive and natural: our brains process music and language in similar ways. Recent research shows that there are two layers to human language. An expression layer which relates to the changeable organization of sentences (very similar to bird song) and a lexical layer (the core content of a sentence, similar to that found in primates). Did these two layers come together to form a uniquely sophisticated language with its origins in song? Did we form the ability to construct complex patterns, like a song, but with words? Again it was Darwin who theorized that our ancestors sang love songs to each other even before they could speak a language.

Using a remarkable process, Marcus Coates explored the origins of human language and song, by studying and recording bird song for the 14 screen, sound and video installation *Dawn Chorus*.

Marcus Coates is a British Artist known for unusual and sometimes eccentric works that explore encounters between the human and animal worlds. He has had more than 60 solo exhibitions around the world, and has been awarded the Paul Hamlyn Foundation Artist Award and first Daiwa Foundation Art Prize. He often appropriates the language and behavior of wild animals, insects and birds as a means of deciphering our emotional and social conventions.

Dawn Chorus is an immersive installation. The viewer enters a room on which large monitors are positioned at different heights on steel poles. The positioning of these poles is methodical and meaningful. The sound of bird song fills the room. Marcus used unique digital methods to unpack the relationship between birdsong and the human voice. The artist worked with scientist Peter McGregor who specializes

in birdsong and animal behavior, as well as notable birdsong expert and wildlife sound recordist Geoff Sample. They spent a week living in a camper van in the Northumberland woods. Each morning they'd get up at 3 am and record bird song on a 24 track digital recorder. Marcus was fascinated with Sample's ability to tell birds apart; even when some were mimicking other birds. Together they recorded 576 hours of song and a huge variety of different birds. They formed an understanding of where to place microphones. For their final recording they captured 14 birds at the same time. In nature these birds always sing together as a dawn chorus.

Back in his Bristol studio Marcus slowed the recordings right down to a sludgey, drone of individual intonations. Then he hired amateur choir members (e.g. the ladies barbershop choir), to learn these strange riffs and sing them aloud...in their own time. The choristers were filmed at dawn, alone in their own habitat : in garden sheds, hospital waiting rooms and bathtubs. Later the film speed was increased, sometimes 16 fold, until the choristers 'become' birds. Monitors in the gallery replicate the positions of the microphones in the woods where that original bird dawn chorus was recorded. This *Dawn Chorus* is a fascinating exploration into the origins of human language and voice in bird song.

If human language and emotional voicing does have its origins in bird song...how will the voice and song develop through code into the future?

These days scientists and artists ask : When robots speak, how human should they sound? The placement and recognition of human qualities like inflection and emotion in speech is known as prosody. Prosody signifies the ability to tell if other humans (or birds, or machines) are communicating with irony, sarcasm, love or anger. Birds appear to have this ability too. Robots can now recognize human emotions from tone of speech...instantaneously and in real-time. Martin Backes and Michelle Jaffé present two captivating installations that explore the emotional singing voice created through algorithm and a program called SuperCollider.

Martin Backes is a Berlin-based artist, creative technologist, designer, hacker and composer. He studied Media Art & Design and Sound Studies at the University of Arts in Berlin. He uses media technologies to reflect certain functionalities, effects, ideologies and differences in human perception. His experiments in art, science, technology and culture range from sculptural and multimedia sound works to interventions in public spaces, as well as radio plays and computer/video works. He shows and performs around the world.

what do machines sing of? is a modest robot, a fully automated machine, standing on a lit stage, singing Number One Love Ballads from the 1990's. It sings without words, the intonation of each sound is laden with emotional affect. As the computer program performs these already emotionally laden songs, it attempts (through programming) to apply appropriate human sentiments where required. The artist has noted that this behavior could be interpreted as a desire, on the part of the machine, to communicate as we do: Through song to become human.
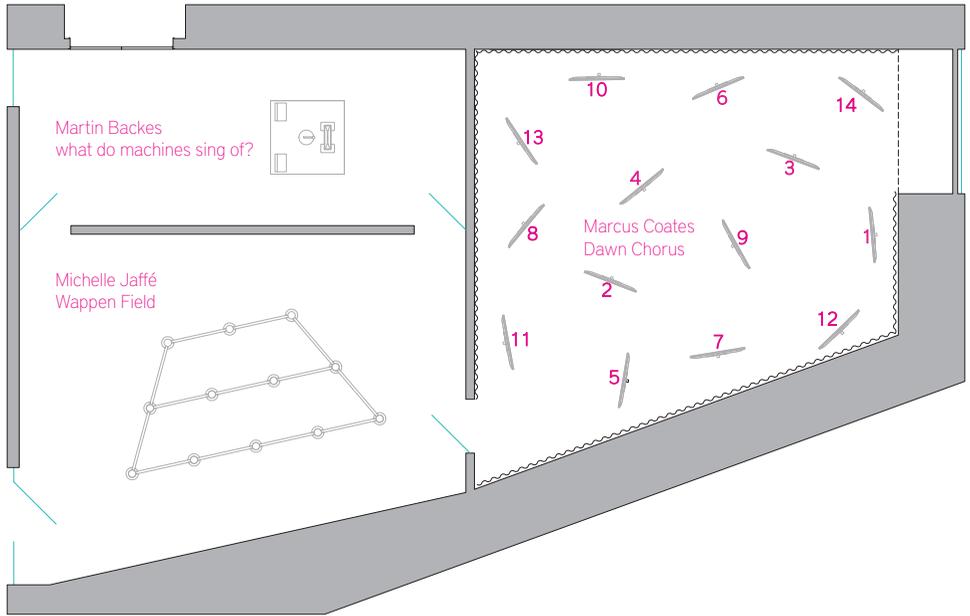
If a robot is a machine, programmable by a computer, and capable of carrying out a complex series of actions automatically, then this is a robot. This one's face is rendered as a digital facial emoticon so familiar to us through social media that it has become its own language   The humming voice and abstract face are linked and generated by a real time synthetic programming language called SuperCollider, to mimic the pitch of whatever it is singing, and alter the appearance of the face in real time. The voice adheres closely to what we might understand as human emotional resonance. Empathic tendencies present in anthropomorphism and personification are critical to the success of the work.

American sculptor Michelle Jaffé creates participatory installations of sculpture, sound and performance video. She first explored sound in 2000. She has exhibited widely across the U.S.   Her work is found in the collections of the Philadelphia Museum of Art, Museum at FIT and Museé de la Mode in Paris.

Wappen Field is a sculpture and sound installation that is an exploration of song voice from different vocalists and cultures. This work also uses the SuperCollider Program to manipulate and modulate voice. 12 chrome-plated, steel helmets hang from the ceiling facing the visitor in a grid; their reflections cast a reflective shadow on the floor below. The human body is not immediately present but is implied. The work unites sound and body through the addition of the viewer. Jaffé has spoken of her desire to convey the presence of song and a voice that stretches into a distant past, and is in a continuous march forward. Each helmet is a resonant chamber in which a dedicated speaker transforms the helmet into an immersive and connected audio environment. Song sounds are transferred form one helmet to the next algorithmically with the help of a program called SuperCollider. The term Wappen is the German word for Coat of Arms suggests a brand or badge identifying groups such as family, team, tribe or order.

Remember the two layers of human language: lexical and expression layer? Compare this now to the layered language abilities of a program like SuperCollider. IT Giants have all invested heavily in Voice Technology. First generation voice products were clever, but very much first generation...just babies really. Thanks to deep learning, machines nearly equal humans now in their ability to transcribe voice, and are getting much better generally at handling natural voice in all its forms. Machines still don't understand the meaning of language...but they will. Traditional telephony format is at an end. The new voice interfaces will exceed the first in both intelligence and pervasiveness. A major turning point is upon us as the boundaries between human and synthetic voice dissolve. We will no longer understand and relate to technology and the world around us through a systemic geography of physical connections. What is the future?

Through multi-screen video, sound, robotics & sculptural electronic media, and through the expert manipulation of code, sound and language, three award-winning artists explore, in unconventional, funny, menacing and poignant ways, the emotional qualities, origins and possible future of the human voice in a world mediated by technology.

Floorplan & Bird Species Map

Martin Backes
what do machines sing of?

Michelle Jaffé
Wappen Field

Marcus Coates
Dawn Chorus

#	Room	Species
1	Living Room	Common Pheasant (Phasianus colchicus)
2	Living Room	Common Whitethroat (Sylvia communis)
3	Kitchen	Yellowhammer (Emberiza citrinella)
4	Bedroom	Yellowhammer (Emberiza citrinella)
		Dunnock (Prunella modularis)
5	Surgery	Common Linnet (Linaria cannabina)
6	Hospital	Common Chaffinch (Fringilla coelebs)
		Eurasian Wren (Troglodytes troglodytes)
		European Robin (Erithacus rubecula)
7	Bedroom	Eurasian Blue Tit (Cyanistes caeruleus)
8	Office	Eurasian Wren (Troglodytes troglodytes)
9	Living room	Eurasian Blackcap (Sylvia atricapilla)
10	Bedroom	Song Thrush (Turdus philomelos)
11	Bathroom	Eurasian Blackcap (Sylvia atricapilla)
12	School	Chiffchaff (Phylloscopus collybita)
		European Robin (Erithacus rubecula)
		Eurasian Wren (Troglodytes troglodytes)
		Eurasian Blue Tit (Cyanistes caeruleus)
13	Shed	Common Blackbird (Turdus merula)
14	Car	Barn Swallow (Hirundo rustica)