

BEE DIASPORA

The term *diaspora* is an ancient word that refers to people who have been spread or dispersed from their homeland. It brings up connotations associated with spreading out, sprawling, mobility, transition, transformation, temporality, and in 'finding home'.

Our reinterpretation of diaspora looks into the concept of *temporality* – a temporary home and an eco-equilibric democratic behaviour around being in this movement and living here. It can also be said that humans place on the planet is *temporal*, all but a temporal home in which we rest and must therefore look after for future generations – both human and more-than-human.

This is a work-in-progress, it traverses between architecture, artistic research, ecology, sound art, poetry, and ecological metaphor. Our aim has been to attune to and take queue from our companion species *Apis Mellifera*. We listen to how they can inspire us and encourage collective forms of environmental action and thinking. This attunement is a crossing - philosophical, scientific and theoretical – into swarm intelligence transposed with eco-equity interpreted into a sound composition. The composition is built around 5 MOVEMENTS: leaving the parental hive, Cluster, Scout & recruit, Decision-making, and Move to a new home. We explore by translating the 5 steps into the sound piece made from bee sounds recorded from our hives, and used in a composition with the KORG MS-20 synthesizer. For the Korg, each movement is indicated with different patch settings, bee sounds and synthesizer configurations, reflecting what is happening. We welcome the reader to play along.

Our soundscape is our way of reflecting on the bees flight from their parental hive to a new home site, occurring in 5 behavioural steps (Seeley 2010). Bees themselves use sound as a way to communicate, and the beekeeper uses the sound of the bees to understand the state of the hive. Subsequently, the piece also reflects the profound relation that can grow between humans and nature in order to incite a wisdom that otherwise remains overlooked. It motions for an experiential sonic situated learning. Close your eyes, listen and let the bees carry you along with their diaspora.



*A quote goes here. A quote goes here. A quote goes here.
A quote goes here. A quote goes here. A quote goes here.
A quote goes here. A quote goes here.*

A NAME GOES HERE

DIASPORA

COMPOSITION DIAGRAM

SOUND METAPHORS

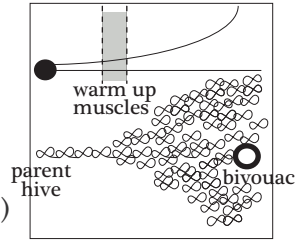
DEMOCRATIC BEE METAPHOR

MS20 KORG SETTINGS



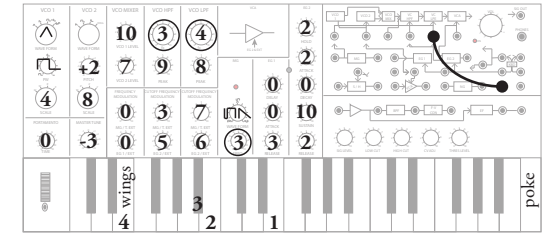
MOVEMENT 1

LEAVE HIVE
(collectivity/common aim)



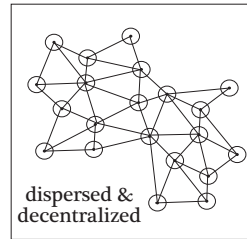
1. poke
2. warm up bee wings
3. start leaving
4. all fly off

- make a common decision to leave parental hive
- start to poke queen
- fly to resting 'bivouac' site
- have shared interests and mutual respect
- colony success/fate depends on common aim
- mass, many bees



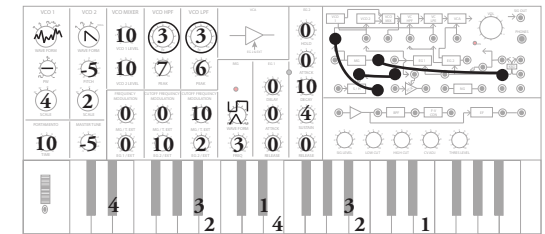
MOVEMENT 2

CLUSTER
(de-centralised power)



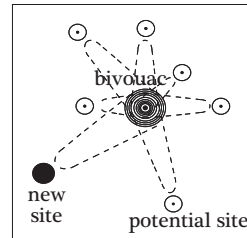
1. multiple actions
2. communal atmosphere
3. repetitive movement

- multiple possible actions
- reduce leaders' role to distribute power
- decrease central power
- increase collective power
- uncover diverse sets of possible solutions
- communal atmosphere
- gathered knowledge
- repetitive movement
- airing of doubts/disagreements



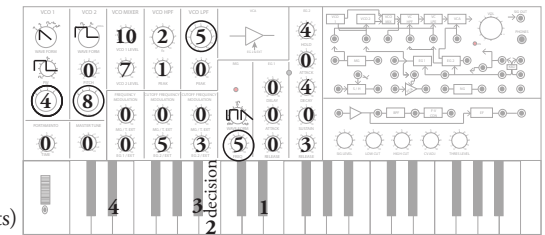
MOVEMENT 3

SCOUT / RECRUIT
(encourage independent experience & voice)



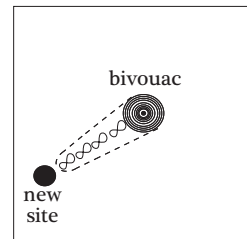
1. scout waggle (distance, location, desire)
2. recruit waggle
3. 4 options down to 1

- gathered knowledge from own experience
- waggle dance / repetition
- reveal direction/distance and desire
- pursue individual experience for whole
- agency / agency-making
- diverse backgrounds, perspectives, experiences
- independent exploration and opinion-making
- social environment conducive to proposals
- 3-5% of scout bees initiate (scouts convince recruits)



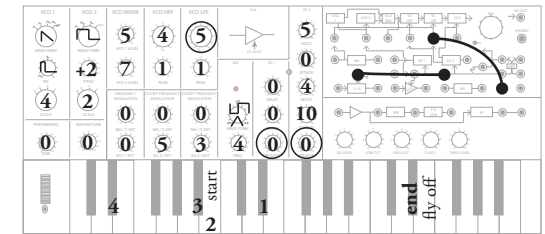
MOVEMENT 4

DECIDE
(communication)



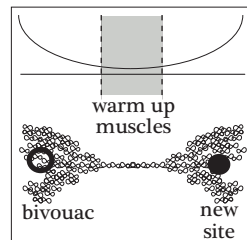
1. winning option
2. waggle winning location
3. winning sound (repeats/increases)

- aggregate knowledge through debate
- interdependence
- continued communication of opinions
- continued recruitment of supporters
- independence
- each works through imitation & intuition
- each decides for themselves
- each visits desired sites to see for themselves



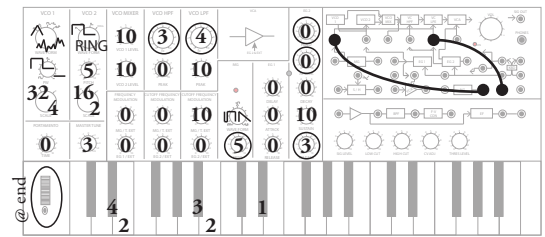
MOVEMENT 5

MOVE HOME
(Reach consensus)



1. winning sound
2. sharp shift
3. waggle shifts to piping
4. warm up bee wings
5. start leaving
6. all fly off

- quorum response (70-80% for the same location)
- cohesion, accuracy, speed
- sharp change in behaviour
- shift from 'waggle' to 'piping' sounds
- accelerate consensus
- warm up bee muscles
- fly away



Our bee story begins during a spring afternoon in 1949 (post war), when Martin Lindauer, a German behavioural scientist, came upon a bivouac of bees suspended in a tree near the Munich Zoological Institute. After careful observation, he watched the bees return to the swarm performing a series of 'waggle' dances oddly covered in a variety of city debris – dirty and dusty. Lindauer plucked a few of these dirty bees, dusted them off with a small paint brush and examined the debris under a microscope. This debris was not pollen grains but various forms of dirt particles. - 'black' with chimney soot, 'red' from brick rubble, 'white' from flour, 'grey' from concrete dust.

Later in the summer of 1951 he observed 4 swarms, mapping their flight paths. He followed them from their bivouac sites in the institute to their new home-sites. He concluded that these 'dirty dancers' were not foragers but that they were nest-site scouts who had gone looking in search for a new hive home in the rubble of bombed-out Munich. Their dirt helped create a cartography map of their territory to sites that included: an unused chimney cavity, a collapsed brick and concrete building, a forgotten flour chest. etc.

Bee's decision-making is seen through their bodily movements, face-to-face communication, sounds, and orientated goals. Seeley explains this as a model for democratic decision-making, one in which a collective behaviour emerges from the communicative and relation-making components of a swarm. His research examines when a portion of a hive swarms from its parental hive to a bivouac, and then their new home. During this period, the bees' communication involves constant interaction; reporting sites visited, confirmation, open debate about sites, and reaching an agreement for the new site. This is done in 5 behavioural steps, our 'movements'.

- **Collectivity - A common aim:** a group with shared interest and mutual respect using a heterogeneous decision-making. They know their fate depends on this collectivity.
- **De-centralised - Bees decentralise power to provide a multiplicity of possible actions:** By reducing a leader's role and distributing power evenly, increases their collective power to uncover a diverse set of possible solutions. The bees create a communal atmosphere of open inquiry, taking in summed knowledge. Each individual scout and recruited bee is included in the process, and they communicate using the waggle dance to reveal direction, distance, and desirability.
- **Diversity - Bees encourage individual experience and voices:** They pursue diverse solutions as a search team where each individual bee explores and sees for themselves.
- **Communication - Bees foster dialogue and gather knowledge through active debate:** It begins when scout-bees (3-5%) find their favourite 'home' sites. They return to the swarm and 'waggle' the location to find recruit bees. Next, recruit bees fly to their chosen 'site', if they like it, they return to the swarm to perform the same waggle. This continues until all reach a 'decision' site.
- **Decision-making - Reaching a consensus:** This is called a Quorum response when a critical threshold number (about 80%) is reached for one site. The 'bees make sharp changes in their behaviour' begin to make piping signals instead of the waggle. This indicates 'we have a site, prepare!' The bees start preparing their flight muscles and lift off to their new home.

The bees' democratic decision-making can be used to think about our movement and transition to ecological hopeful futures that include the use of artistic encounters that play a critical role in communicating, inspiring, and gathering these directional aims. As a diaspora living on a decaying planet, we have to agree where we go to from here collectively.

'Bee Diaspora' is a joint contribution between Anna Maria Orrù (architect/ artistic researcher) together with Morten Søndergaard (poet and sound Artist). It is a performative lecture that weaves together textual reading with the soundscape piece.



SELECTION OF POEMS

*I say it again, nothing else to be done,
it's a way of proceeding,
a way of finding a foothold,
a complex dance inside the bees' hive,
the crackling warm brain of the anthill in pinewoods,
gravity lies awake, unable to sleep,
but your fingertips tingle with cautious knowledge,
the sense of everything being within reach,
even the dark in the mirror, a crack in the wall,
seeing it all disappear, seeing the shadow flowers
cover your face,
it getting late, and that which is near becomes distant,
and a glimpse of infinity in the clouds
gives up and collapses, tired and titanic.*

- MORTEN SØNDERGAARD

*You say
bees die sleeping
but they crash to the ground
struck by a stroke
in the brain
there is
presumably honey
inside the wall
and they keep on returning
year after year*

- MORTEN SØNDERGAARD

*Come again, an unseen, traced and lost,
the creepy-crawly feeling of insects under the poem's surface,
the measured clarity and bees
that have eaten fermenting fruit and are flying heavy and swirling
toward the nets we've set up
as protection against all the madness,
but all humans are made of glass,
it requires little effort to look
inside their transparent skull
to know what is going on inside,
and follow the skips and collapses of each single thought
in that honey-hued landscape.*

- MORTEN SØNDERGAARD