ROBOTS IN DISTRESS, BOREDOMRESEARCH (VICKY ISLEY & PAUL SMITH)

1/ FROM THE RESIDENCY : FROM SIMULATION TO ROBOTICS THROUGH BIOMIMETICS, ARTIFICIAL LIFE AND PLASTIC WASTE, AND BACK AGAIN

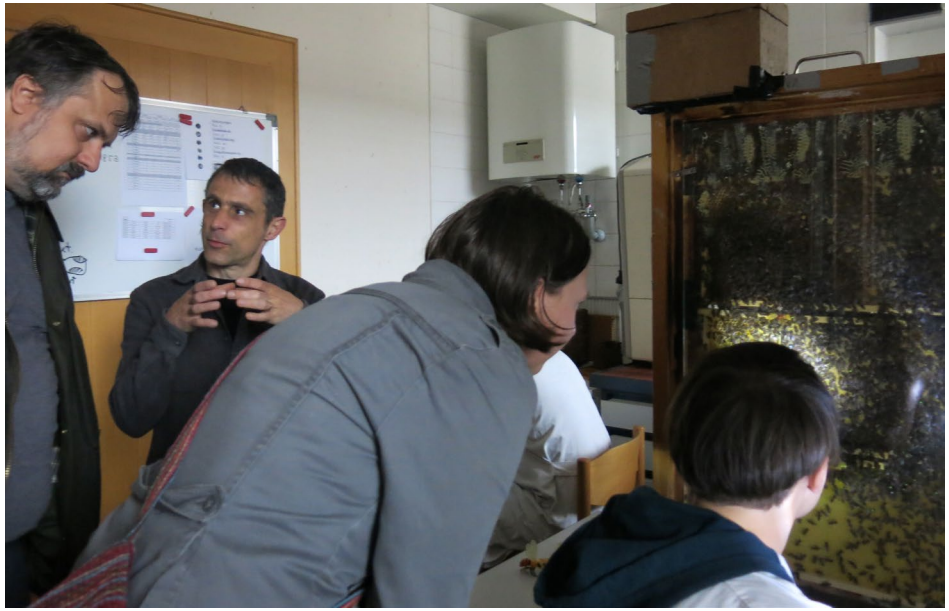
(Compiled from boredomresearch's report, all images © the artists)

MARCH 2016:
MATCH-MAKING PROCESS, THE ARTISTS SELECT THE SCIENCE FET OPEN CONSORTIUM

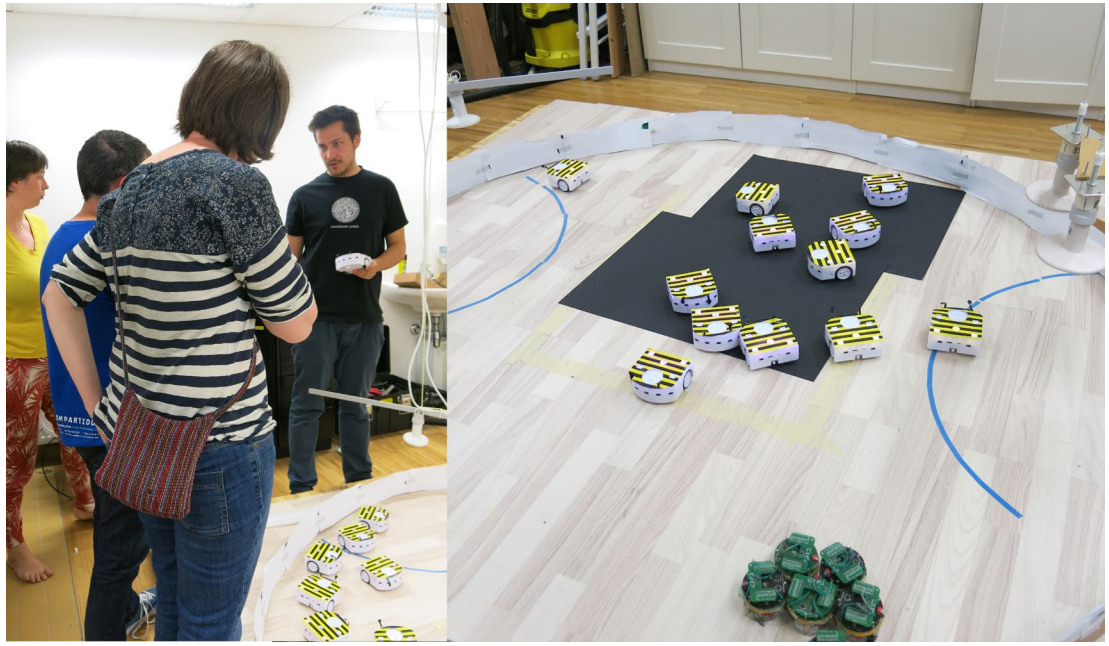
subCULTron is developing a culture of robots designed to live in challenging, human polluted, environments, where they will collect data and monitor their surroundings. We chose to work with the subCULTron future emerging technology project as we have always been fascinated with the mechanics of the natural world. Our artistic practice uses real time computing to create expressions that are informed by how natural systems behave and interact. On hearing about subCULTron's use of bio-inspired techniques, fostering new way of addressing the challenges of a world subject to intensive human activity, we were immediately captivated by, what was for us, an intoxicating mix.

MAY 2016

To begin with we knew the project would challenge our understanding of programmed behaviour as we moved out of our comfort zone of simulation and into a world that confronts the challenges of the physical environment as well as those of electrical engineering. When we arrived for our initial residency period in May 2016 at the Artificial life lab in the Karl Franzens University, Graz, Austria, we discovered a contradictory mix of similarities and differences. This combination provoked deep engagement in concepts of behaviour that bridge cultural and scientific domains.



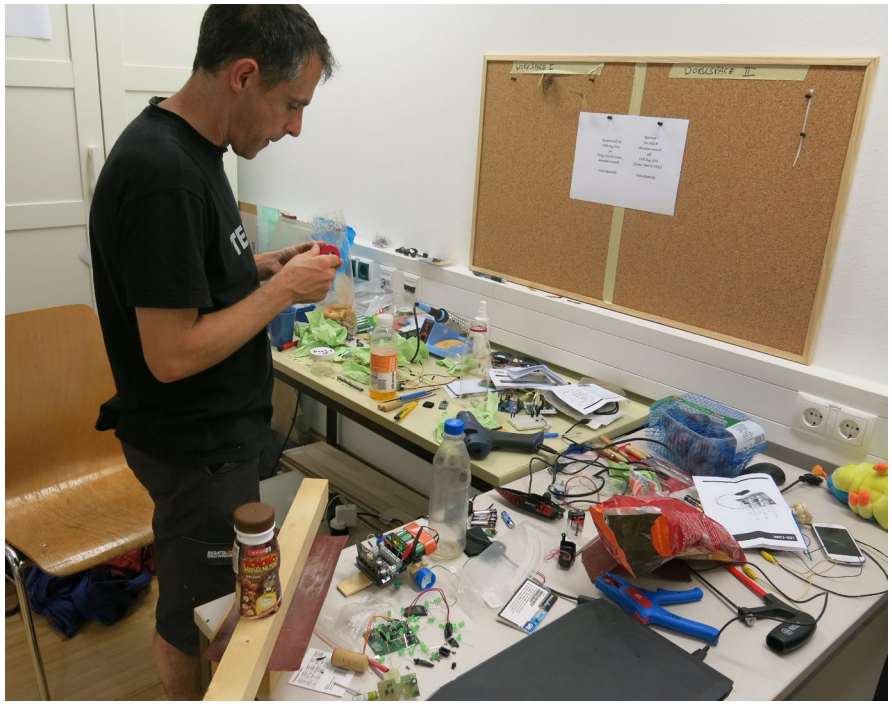
Paul Smith and Vicky Isley with Ronald Thenius in front of the beehive at the Artificial Life Lab of the Karl Frazens University, Graz Austria



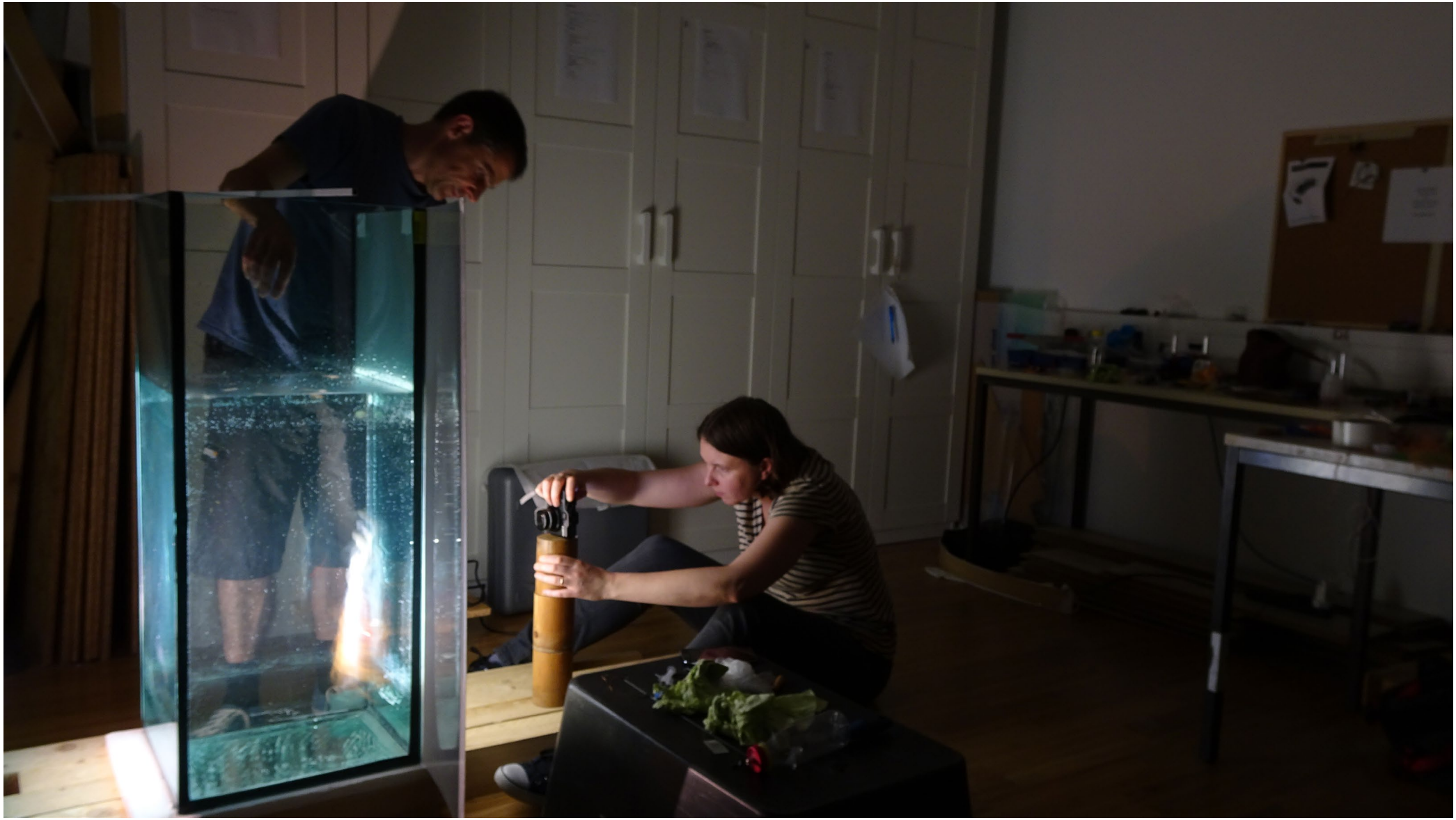
Paul Smith and Vicky Isley with the bee-inspired robots clustering at the Artificial Life Lab of the Karl Frazens University, Graz Austria

SUMMER 2016

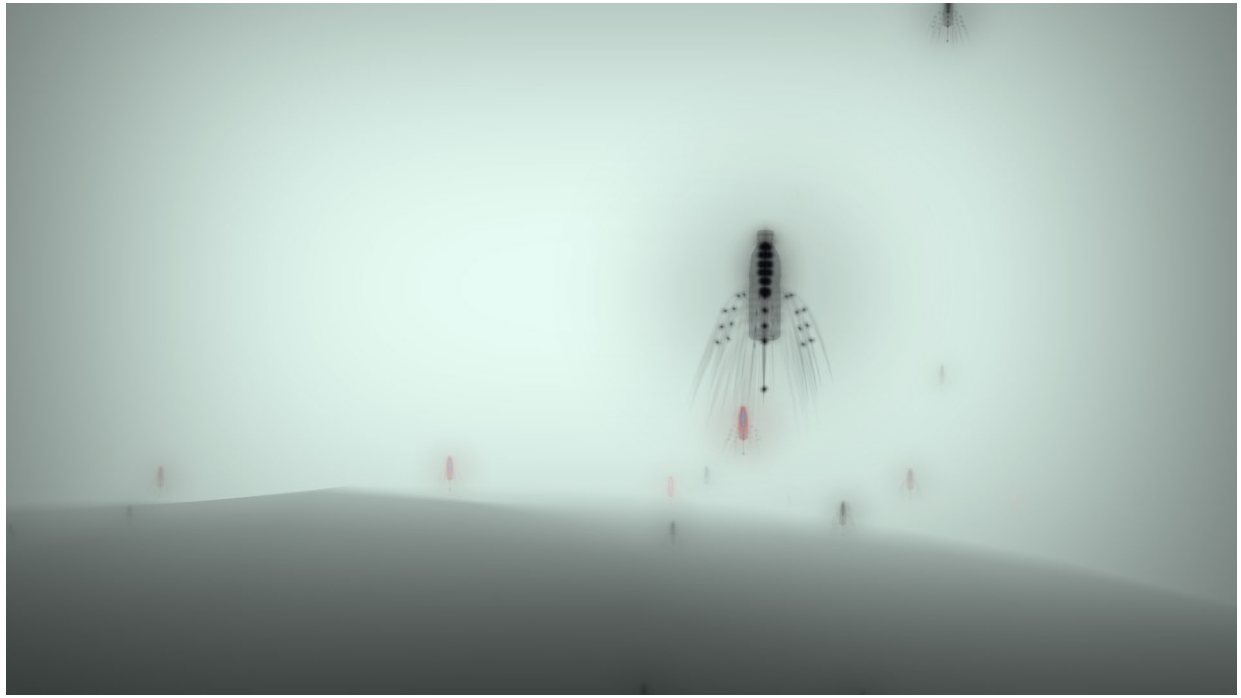
During the summer we returned to the a-life lab where we worked with an electrical engineer building robots made from plastic waste. Although these contrast with the highly engineered robots that will ultimately inhabit the Venice lagoon, the plastic waste robots have been inspired by the simple test bots made in the lab as proofs of concept. This interaction has been rewarding on both sides. We have gained many new skills but more importantly have gained a deeper appreciation of the processes, considerations and challenges of the subCULTron project. The scientists on the other hand have enjoyed the freedom to explore ideas with a playful freedom that can often be lost within the constraints of a scientific framework.



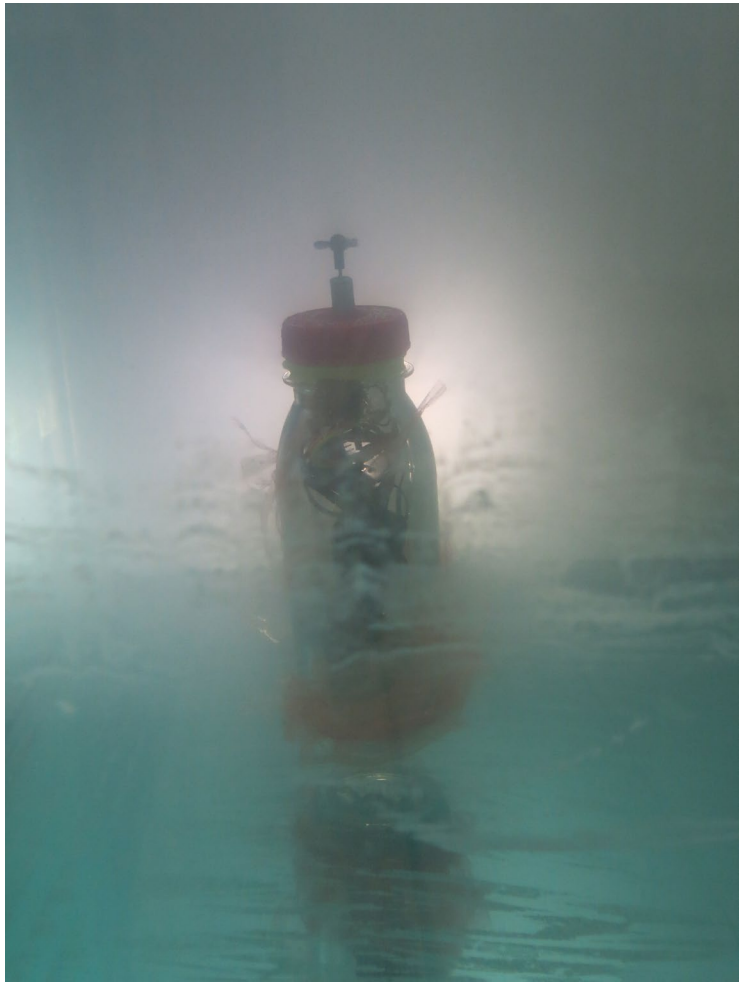
Confronting the electronics …



Testing motion dynamics of micro-controlled plastic waste…



The shape of the digital robot in the final work *Robots In Distress* has been inspired by the plastic bottles the artists used in the lab to experiment with physical robots.



In the course of testing the motion dynamics of micro controlled plastic rubbish, the robots would start losing their synthetic tendrils to end up swimming in a plastic soup of their own remains which would get trapped in their propellers and ultimately interrupt their life cycle. Through this process we realized if we built these robots into an installation they wouldn't be able to return to their base anymore to get charged and the robots would die -suffering the same fate as much of the world's marine life.

In the time available it was important for us to follow a concept through to a point with a visual expression. This was ambitious to the point of challenging lab protocol. The established routine of analysing data sheets, testing specification and formulating and testing principles to evaluate performance of components was, in this case, a process that we needed to abridge. In doing so we encouraged a more spontaneous approach to engineering which engaged with the sometimes playful nature of artistic production and an open ended freedom common to much creative practice. This was something that lab members found inspiring and we left feeling we had made a strong and positive contribution to the language of practice by way of introducing what we came to call 'visceral engineering' where choices and directions arise from a deep feeling or sense.

2/ BIO-INSPIRED FRAGILITY AND TECHNOLOGICAL ADVANCEMENT

On April 5th 2017, as part of the Arts/Sciences lecture series organised by iMAL in Brussels, boredomeresearch presented a large body of their works.

Among those, they discussed the ideas behind *Robots In Distress* and how they emerged from the confrontation of the artists's creative world with the researches conducted at the Artificial Life lab in the Karl Franzens University in Graz, Austria during their residence.
Robots in Distress is discussed towards the end of this video recording of the lecture, around 45'30".

https://www.youtube.com/watch?v=mCT0feZGmJ4&feature=youtu.be

3/ CONVERSATION WITH THE ARTISTS AND THE SCIENTIST

Inspired by Nature: Swarm of robots and artificial life works

Conversation between Vicky Isley, Paul Smith (boredomresearch), Thomas Schmickl and Annick Bureaud (podcast)

The artists, Vicky Isley and Paul Smith and Thomas Schmickl, the project leader of the scientific research project subCULTron talk about their respective approach of artificial life, both «in vitro» (artificial virtual creatures in a computer environment) and «in vivo» (robots and more precisely swarm of robots in natural environments). They present and discuss their common ground and questions in relation to the FEAT residency.

https://creativedisturbance.org/podcast/inspired-by-nature-swarm-of-robots-and-artificial-life-works-meeting-with-vicky-isley-paul-smith-boredom-research-and-thomas-schmickl-eng/

4/ *LEONARDO* ARTICLE ABOUT THE PROJECT

« Simulated Despondency for *Robots in Distress* », boredomresearch (Vicky Isley and Paul Smith), *Leonardo*, MIT Press

http://olats.org/feat/BoredomResearch-leon_a_01468.pdf

CREDITS

«Robots in Distress» has been created by boredomresearch
in collaboration with subCULTron (www.subcultron.eu),
Artificial Life Lab, Karl Franzens University Graz (http://zool33.uni-graz.at/artlife/)

«Robots in Distress» has been created as part of the FEAT/Future Emerging Art and Technology project, featart.eu

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