

Feedback digital excursion: Workshop on “The Nature of Intelligence | The Intelligence of Nature” in cooperation with Heather Barnett, UAL, 2 September 2020

Brief description

As part of the two-week Z-Module “Art + Artificial Intelligence” at the ZHDK, a half-day workshop with Heather Barnett (Pathway Leader on the MA Art and Science at Central Saint Martins, University of the Arts London) took place on 2 September 2020.

One of the aims of the workshop was to try out meaningful, new ways of communication and interaction over distance and to evaluate the experiences. A special challenge was the communication in the concrete laboratory situation.

The theme of the workshop was the exploration of functions and the search for definitions of intelligence in living systems. This was done using the example of SLIME MOULD (Physarum Polycephalum).

At the beginning of August, Heather sent some cell cultures of SLIME MOULD to Zurich by mail. After some difficulties the cultivation of a culture succeeded. Two SLIME MOULD cultures for each student were grown in Petri dishes.

Andreas Kohli, in exchange with Heather, designed some mazes and printed them out with the 3D printer as an experimental set-up. Some of the printed labyrinths were also sent to Heather by post. Thus the students in the workshop in Zurich had an adequate environment in comparison to the laboratory in London.

The workshop was introduced the previous day with the following exercises:

- Discussion on the definition of “intelligence”
- simple sets of rules were built up with “intelligent” algorithms (Cellular Automata) and simulated the simplest biological phenomena with algorithms

As an introduction, Heather made a lecture on 2 September and gave an insight into her artistic field of research.

Via online-teaching, she then guided the students in Zurich through some experiments and conducted a practical workshop in SLIME MOULD modeling.

It was important for Andreas to have sufficient competence in the classroom and to be able to complement or recover from Heather’s guidance through direct interaction with individual students. For the smooth running of the event such a person on site is absolutely crucial. After the workshop had started, Andreas did most of the ground work to support the students.

The plan was, that Heather would be present in the classroom via a large display. In addition, the students were to open further ZOOM channels with their smartphones and thus provide detailed insights into her actions via the mobile cameras. Unfortunately, the data connection was too bad and the communication via smart phones did not work.

Using notebooks, however, it was still possible to send detailed views of the actions to London. However, the experiments were clearly pre-planned and also supplemented by written instructions from Heather, and the students were able to set up and conduct the experiments largely on their own initiative.

For Heather, however, it was a strange and a new experience not to be present at the actions in the physical space and to be able to directly supervise the students.

She commented that “whilst I could see that students were actively engaged in the practical and were being supported well by tutors in the room it was frustrating not to be able to informally observe and intervene with student activity. It made me realize how much ‘tuning in’ is done in teaching practical workshops. I wanted to be able to wander from group to group and chat to them about their ideas and how they interpreted the task. This wandering can also help identify students who are confused or struggling in some way. It is in these moments where knowledge sharing and building can truly emerge.”

The preparation for the workshop turned out to be complex. The lecturer in Zurich first had to acquire the basic knowledge necessary for breeding the SLIME MOULD. In addition, the online exchange is mostly linguistically focused, and there is no knowledge transfer where someone shows how to do it by means of an action.

Since the SLIME MOULD is a living being, its handling and breeding from scratch was challenging and required daily care for three weeks before the workshop.

The workshop itself was well run and the permanent possibility to consult with Heather via ZOOM was used a lot by the students.

The experiments with SLIME MOULD lasted for several hours, sometimes for whole days. Due to the spatial and temporal limitations, the long-term monitoring and evaluation of the results was limited.

The workshop went well and was rated highly by the students. They were interested in the completely new field (SLIME MOULD) and the possibility to carry out the experiments in a straightforward, physical test arrangement.

But all in all it was definitely worthwhile, if the Z-module takes place again the workshop will be scheduled.

Andreas Kohli, Heather Barnett, October 2020