

D·A·T·A protocol

Communication channel between human and non-human agents.

Author: Apostolos Marios Mouzakopoulos

Supervisor: Prof. Claudia Pasquero

Keywords: communication, material, organism, physarum

ABSTRACT: As architects we are used to describe space and qualities with an extreme specificity. By eliminating this specificity of lines and by incorporating organism intelligence into the production of drawings, solutions become more emerging. By introducing living organisms in the analysis of spatial patterns a new way of space exploration is emerging. In this way physical space is becoming an interface to a collaborative system.

As humans we have realised that we need to shift away from the anthropocene where human is the dominant force of influence. This shift to the post anthropocene would be logical to assume that is bringing technology to the centre of attention. But as we already know, machines can be as clever as their creator.

In an effort to shift from the anthropocene, it is clear that we need to redefine the relationship of the digital and the analog; a new era when machines are not mass produced, but customised at will while cooperating with living organisms to achieve a goal. At the same time, the way data is collected needs to be renegotiated within this framework. Data collection should not only rely on electronic sensors and machines but slowly is starting to become a necessity to benefit through the use of inherited intelligence. Thus introducing living biological matter that in collaboration with electronic sensors can sense the way we occupy the city. The digital is becoming the input to the living and vice versa. In this way physical space is becoming an interface to a collaborative or even a symbiotic system.

To create a communication channel with a living organism, we need to develop a symbolic relationship with the organism. We need to go into a machinic aggregation with it. Philip Goodchild characterises the 'machine' in Deleuze, as 'an assemblage of parts that works and produces'. The 'machine' is a production entity, and is adapted by material streams. The 'machine' along these lines reaches out past any prior qualification between the mechanical and the natural, to incorporate the two areas. The 'gathering', then, could be characterised as a loose association of individual parts that have met up to shape a unified body — however a body which is rarely steady or brought together.

The collaboration of the digital with the analog requires us to redefine what the two terms refer to. The digital is about the translation of the real world to series of ones and zeros. But in order to create a collaboration with the digital we need to shift from the von Neumann Model of computation and think of the machine as a tabula rasa. A series of transistors that can run complex computations in a very specific way. This is only possible by redesigning hardware and software according to the problem. Thus the role of the architect is not only to create a design framework but rather to design a machine apparatus according to that framework. Therefore the digital is more targeted into very specific tasks while allowing for the flexibility to change the machine ontology throughout. On the other end, living matter is not confined within the bounds of the binary system but rather to analog gradients of data resulting in a new paradigm of computation where parameters do not need to be represented symbolically and problems are not solved through a series of step by step instructions, instead data are represented into a more natural form of spacial pattern. A computation system that continuously adapts to the patterns of the physical space until equilibrium is achieved. The analog has intelligence which in this case can be used in order to sense and compute physical space. Thus it is not only a computing apparatus but also a fabrication matter with embedded intelligence. This allows for material to adapt to its environment according to the way space is interfaced.

REFERENCES:

- Goodchild, P. (1997). *Deleuze and Guattari*. Sage Publications.
- Hillier, B. (2007). *Space is the machine*.
- Jones, J. (2015). *From pattern formation to material computation*. Springer.
- Moskvitch, K. (2018). Slime Molds Remember — but Do They Learn? | Quanta Magazine. Quanta Magazine. Retrieved 10 October 2021, from <https://www.quantamagazine.org/slime-molds-remember-but-do-they-learn-20180709/>.