

The Ada Lovelace Bicentenary Lectures on Computability, December 2015 – January 2016

[Aaron Sloman](#) (Birmingham University)

Evolved Construction-kits for Building Minds

Thursday, 21 January, 11:15-12:15

This will be a highly interactive tutorial introduction to the Turing-inspired Meta-Morphogenesis Project, which brings together a host of problems and ideas about evolution, how it started on a lifeless planet, how natural selection produced branching layers of construction kits (some physical, some abstract, and some hybrid), and how these made possible increasingly complex and varied morphologies and behaviours based on increasingly complex and varied forms of information processing. Among many topics to be discussed are the unknown evolutionary precursors to human abilities to make mathematical discoveries leading up to Euclid's Elements, and related aspects of human and animal visual abilities. Support for Kant's philosophy of mathematics will be presented, along with criticisms of the visual, mathematical, and linguistic competences of current AI systems. Some possible ways of overcoming those limitations will be considered, with implications for current theories of how brains function.

An extended abstract will be made available here:

<http://www.cs.bham.ac.uk/research/projects/cogaff/misc/links/lovelace-turing-jan-2015.html>

More information on the Meta-Morphogenesis project is available here:

<http://www.cs.bham.ac.uk/research/projects/cogaff/misc/m-m-related.html>

Watch the video

