

# The Future of Art and Computing: A Post Turing Centennial Perspective

Anna Dumitriu<sup>1</sup> and S Barry Cooper<sup>2</sup>

*Mathematical reasoning may be regarded rather schematically as the exercise of a combination of two facilities, which we may call intuition and ingenuity.*

- Alan Turing. *Systems of Logic Based on Ordinals*, in *Proceedings of the London Mathematical Society*, series 2, vol. 45 (1939)

## 1 INTRODUCTION

In the 60 years since Alan Turing's premature death in Manchester, his work on higher order computation - particularly that concerning human thinking and morphogenesis - has provided a meeting of the ways for scientists, social scientists and the creative arts. This Symposium seeks to bring together workers across a spectrum of disciplines, to both evaluate and promote cooperative activity in this area.

The theme of the Symposium builds on that of the "Intuition and Ingenuity" exhibition, part of the Alan Turing Year celebrations, which took place at AISB 2013 in Birmingham, and the related article written by exhibition co-curator Anna Dumitriu for the AISB journal. Framed by past work within the Turing Centenary Arts and Culture subcommittee, the symposium will focus on new directions in art and technology collaboration, for example that via the major EU funded project ICT & ART Connect, which sets out to explore new boundaries bringing together artists and technologists. Collective acts of co-creation, together with an open and multidisciplinary discussion, will foster the collaboration of art and technology.



[Luciana Haill](#). Photograph by Nick Wilson.

## 2 ART, COMPUTING, AND ALAN TURING

At the same time, we will be concerned with clarifying the nature of the relationship between art, meaning and science, with a focus on fundamental issues relating: human and machine intelligence; higher type and algorithmic computation; creativity, emergence and phase transitions; statistics, language and 'big data'. This is a huge field of investigation, but we will attempt to keep it focused on the informational nature of the creative arts and how they can enhance our understanding of science.

We are meeting at a time when the dominant computational paradigm - having acquired a certainty and dominance that

might have surprised Alan Turing himself - is being questioned from many directions. The creative arts have the potential to take a key role in these new developments. And the bringing together of a hugely talented group of speakers from across a spectrum of disciplines cannot but make for a unique and exciting event.

The majority of the speakers are active in various branches of the creative arts, while computer science, mathematics and history of computing are also represented. Specifically Turing-related contributions come from a number of speakers, and there is international involvement from Australia, Italy, Latvia and the Netherlands.



'Universal Turing Machine' by Jin Wicked © Jin Wicked

<sup>1</sup> ICT and Art Connect/Waag Society, 4 Nieuwmarkt 4 1012 CR Amsterdam, NL. Email: [annadumitriu@hotmail.com](mailto:annadumitriu@hotmail.com)

<sup>2</sup> School of Mathematics, University of Leeds, Leeds, LS2 9JT, UK. Email: [pmt6sbc@leeds.ac.uk](mailto:pmt6sbc@leeds.ac.uk)