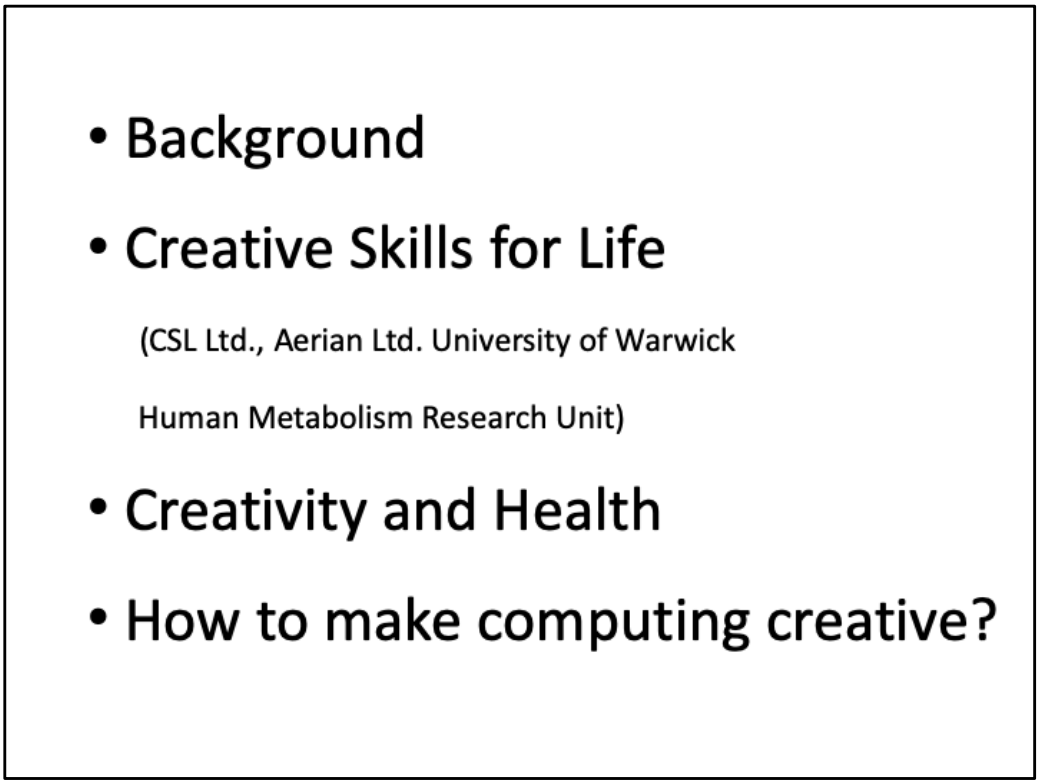


Hello. I am Professor Andrew Hugill, and I am a composer and computer scientist. My colleague Professor Hongji Yang is a software engineer.
We are here from the Centre for Creative Computing at Bath Spa University.
This is a university-wide research centre, which includes research staff from all Schools in the university.
Bath Spa is predominantly a liberal arts university, with specialisms in rt and design, humanities and cuttural industries, music and performing arts. It also has a business school and a science school which includes environmental sciences, neuropsychology an so on.
I founded the CCC two years ago with a mission to explore transdisciplinary work that combines computing with humanistic subjects.
We define “creative computing” as an attempt to reconcile the objective precisions of computer systems with the subjective ambiguities of human beings. Our ambition is to make computers serve human creativity better. We therefore want to embed creativity into the software engineering process.



It should be fairly obvious, then, why we are here today.

The work we are doing builds on a previous project I directed with the Leicester and Rutland Hospice, LOROS. This was called 'LifeSpace', and explored the possibilities of using digital technologies to improve quality of life in palliative care. We carried out some experiments with robots and also with immersive soundscapes. The results were certainly encouraging in terms of patients' reporting of improved wellbeing. A robot dog, for example, provided comfort and emotional responses from patients who were not allowed access to real dogs for hygiene reasons. Similarly, the soundscapes provided patients with an opportunity to revisit locations such as the seaside, at least in their imaginations. This was unanimously described as pleasurable and enhancing of life.

However, there were two problems with this work. The first was that it tended to treat patients as passive recipients of such technologically enabled care. The second was that the health benefits were more anecdotal than scientifically measurable. It is of course nice to have positive verbal reports from patients, but something more than that is needed if we are to evaluate this work more empirically.

I was therefore very pleased to be approached by Ian Spero and the Creative Skills, for Life team a couple of years ago with a much more creative vision of how to improve quality of life for people with life-limiting conditions. In the work we re doing

now, the patient is very much the active agent, the creative hub of the research. Our aim is to provide an online environment in which this creativity is encouraged and enabled, with opportunities not just to make things but also to share and evaluate.

In this endeavour, we are working with the Human Metabolism Research Unit at Warwick University to establish what I call the CSL Experiential Index, a hybrid measure of wellbeing that combines several existing scales and adds automation into the mix. With our partners at Aerian Ltd, we have had some students construct a prototype online platform within which this may be delivered. This enables participants to create and share image, audio and text based work. It also gathers data that will provide the big data feed that will inform the Experiential Index.

Through exploration and analysis of big data, we aim to show how creativity brings tacit knowledge into the procedural domain. This is the essence of the creative process. Our understanding of this aspect of cognition will enable the technology to deliver a uniquely suitable creative environment for each individual, rather than the more familiar 'one size fits all' approach. This would be transformative and resonate strongly with the coming revolution in long term care. Life would be worth living because people, at whatever time of life they may be, will be able to express themselves creatively in ways which would have been impossible until recently. This will also have measurable health benefits.

Fro a technical point of view, we are still very focused on the challenge of how to make computing creative, and for this I would like to hand over to my colleague Hongji Yang.

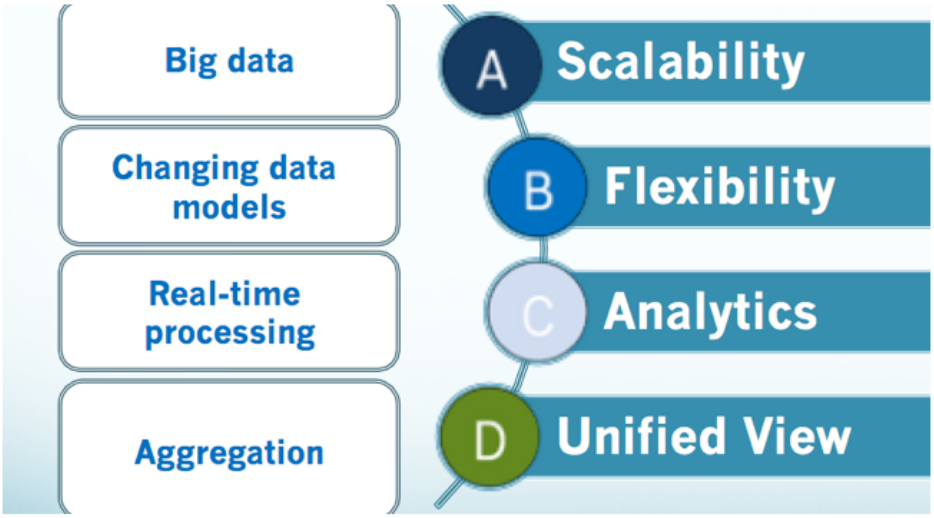
Creativity is a Property of:

- People – who create new useful products (focusing on individual differences in people's creativity or on distinctive characteristics of creative people),
- Products – focusing on case studies of creative production or on computer simulations of creative production, or
- Creative Processes (cognitive) – focusing on analysing the steps involved in creative thinking or in teaching creative cognitive processing.

Corresponding Activities

- Creative Computing is:
  - to develop a computing product creatively (focusing on people via deploying creative methods)
  - to develop a creative computing product (focusing on product via improved expressiveness for contents)
  - to develop a computing environment to support creativity (focusing on processes via general-purpose platform for any product, including computing product, e.g., E-education)

Big Data and Creative Computing



CSL Platform

- Measurable reduction in stress and anxiety
- Opportunities for creativity and collaboration
- Sharing with family and friends
- Secure and sensitive environment
- Automated interactivity