In search of hidden mechanisms..

Denis Mareschal

CBCD 21st Anniversary
Computational Modelling

• A standard in the physical sciences and other life sciences

• They are tools for exploring the causal mechanisms of learning and development

• *Connectionist/Neural Networks* are computer models loosely based on neural information processing

• Abstraction and rule-like behaviours are *epiphenomena*
In the beginning

- **Object permanence** (Oxford)

- **Categories and concepts** (Exeter)
The early days

- Complementary learning systems
- Control of knowledge
- Re-entrant processing
Somewhere in the middle

- Analogy (and metaphor)
- Cue integration work
- Sequence learning (TRACX)
- Embodied time percept
- Visual Salience
- Multisensory learning
And now...

- Educational neuroscience
- Embodied action planning
- Multiple interacting systems
- Continuing on concepts and object knowledge
The future...

- Toddlerlab

- Wide ranging programme, recognising diverse ages and longer developmental periods

- Maintaining *mechanisms* of change at the core of the programme

- Continuing to work with *wonderful people*
The future...

- Toddlerlab

- Wide ranging programme, recognising diverse ages and longer developmental periods

- Maintaining *mechanisms* of change at the core of the programme

- Continuing to work with *wonderful people who challenge your thinking*

THANK YOU!