

**TOWARDS A NEW  
SCIENTIFIC  
PARADIGM**

Brian D. Josephson

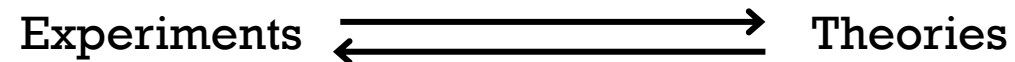
Mind–Matter Unification  
Project

Department of Physics,  
University of Cambridge

*[www.tcm.phy.cam.ac.uk/~  
bdj10](http://www.tcm.phy.cam.ac.uk/~bdj10)*

# CURRENT PARADIGM

- Focused on non-living systems
- Treats linear dynamics only
- Driven by preconceptions



This is a restricted view of nature!

# NATALIE WOLCHOVER (@ELEMENTS)

## A DIFFERENT KIND OF THEORY OF EVERYTHING

- *This web of laws creates traps for physicists. Suppose you're a researcher seeking to understand the universe more deeply. You may get stuck using a dead-end description—clinging to a principle that seems correct but is merely one of nature's disguises. It's for this reason that Paul Dirac, a British pioneer of quantum theory, stressed the importance of reformulating existing theories: it's by finding new ways of describing known phenomena that you can escape the trap of provisional or limited belief.*

# MOVING ON

- There are parallels between biology and the quantum

<b>LANGUAGE OF QUANTUM PHYSICS</b>		<b>LANGUAGE OF BIOLOGY</b>
quantum subsystem, describable by a state vector	↔	signal or form
particle type	↔	type of signal or form
state vector representing a specific possibility	↔	signal representing a specific possibility
collapse of state vector	↔	decision process
measuring instrument determining state of subsystem	↔	structures which determine and regulate signals or forms

*Table 1. Proposed identification of entities described in terms of the respective frames of reference of the quantum physicist and the biologist.*

# LOOKING DEEPER

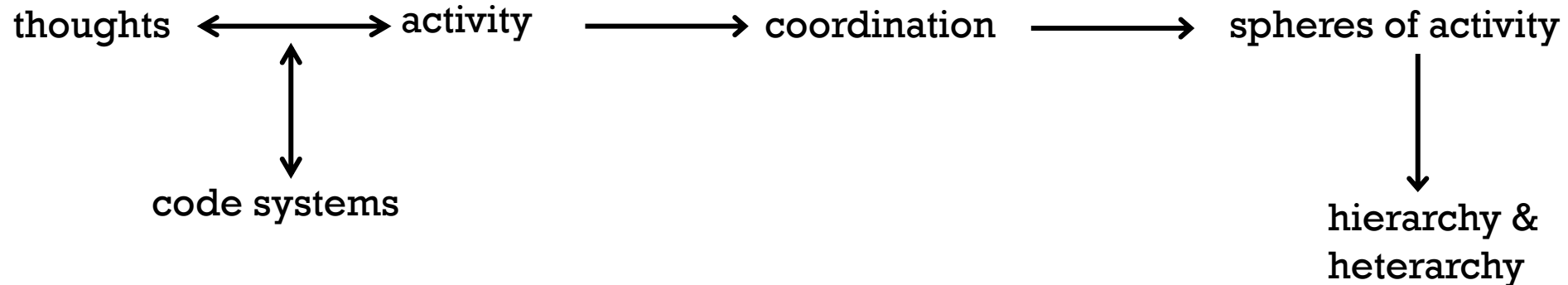
- Biology asks: ‘What is going in, to produce what we see?’
- The power of signs (biosemiosis)
- ... and of coordination (coordination dynamics, and synergies)
  
- Conjecture: the same principles apply more generally
- *In this way we can escape the constraints of conventional physics*

# SIGNS AT WORK (CYMATICS)

- Video shown during the lecture is available at <https://www.youtube.com/watch?v=dv9UMJbU1kI>

# THE POWER OF TEMPORAL PATTERNS

- Everything depends on interplay of temporal and other patterns
- Insights, code systems, and spheres of activity coevolve
- This is what observation is all about



# EMERGENT ORGANISATION

- Spheres of activity
- Local order → Global order



# THE NEW PARADIGM

- Starting from *new concepts* makes for a new paradigm
- Many interesting phenomena for physicists to work on
- Has implications for e.g. memory of water, paranormal, etc.
- Supports 'Intelligent Design' (phenomena driven by ideas)

# THANKS TO

- Scott Kelso (coordination dynamics)
- Ilexa Yardley (origin of ideas: Circular Theory)

# THE END