

## The success of quantum mechanics

- staggeringly detailed insights into the properties of matter
- new views of the universe (we see the universe through the eye of the atom)
- new technologies based on our understanding of atoms
- a new way of thinking

has convinced physicists that its foundation, complementarity, is here to stay.

## Complementarity and ‘Complementarism’

(Based on various writings by Victor Weisskopf.)

Throughout his life, Bohr felt that complementarity might bear fruit if applied outside physics - he often used the phrase **the epistemological lesson of quantum theory**.

This idea of extrapolating into other fields - called **complementarism** by Pais<sup>1</sup> - were regarded by Bohr as ‘seeds for further thought’.

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<sup>1</sup>A Pais (1991) *Niels Bohr's Times, In Physics, Philosophy, and Polity*. (Oxford Clarendon Press)

Over the ages people have produced

- Creations myths and religions
- Philosophies
- Art, Literature and Music
- Science and technology
- Medicine
- Social structures
- ... to name some

To Victor Weisskopf attempts such as these to give meaning to life may seem to be

- incommensurable
- mutually exclusive
- or even contradictory

... I believe a better word is *complementary* ... they represent different aspects of reality, one aspect excluding the other, yet each adding to our (*never complete*) understanding of the phenomenon as a whole.'

*We cannot at the same time experience the artistic content of a Beethoven sonata and also worry about the neurophysiological processes in our brains.*