**ALICE: AN AUGMENTED REALITY INSTALLATION
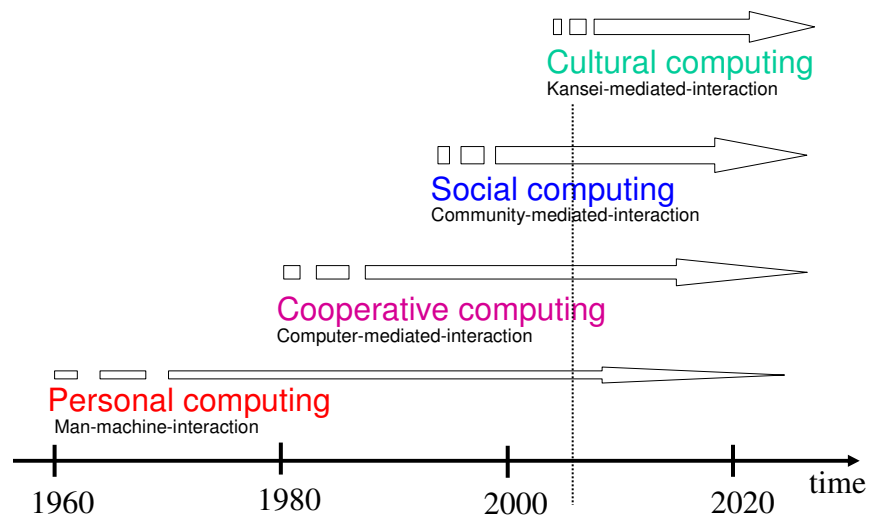FOR AMBIENT CULTURE IN THE WEST**

Matthias Rauterberg
Eindhoven University of Technology
The Netherlands

# Interaction Paradigms in Computing

Cultural computing
Kansei-mediated-interaction

Social computing
Community-mediated-interaction

Cooperative computing
Computer-mediated-interaction

Personal computing
Man-machine-interaction

1960    1980    2000    2020    time

1

# What is Culture?

Culture is the integration pattern of human behavior that includes
- attitudes,
- norms,
- values,
- beliefs,
- actions,
- communications and
- institutions of a race, ethnic, religious and/or social group.

The word *culture* comes from the Latin root *colere* (to inhabit, to cultivate, or to honor). In general, it refers to human *activity*; different definitions of culture reflect different theories for understanding, or criteria for valuing, human activity. Anthropologists use the term to refer to the universal human capacity to classify experiences, and to encode and communicate them symbolically. They regard this capacity as a defining feature of the genus Homo.
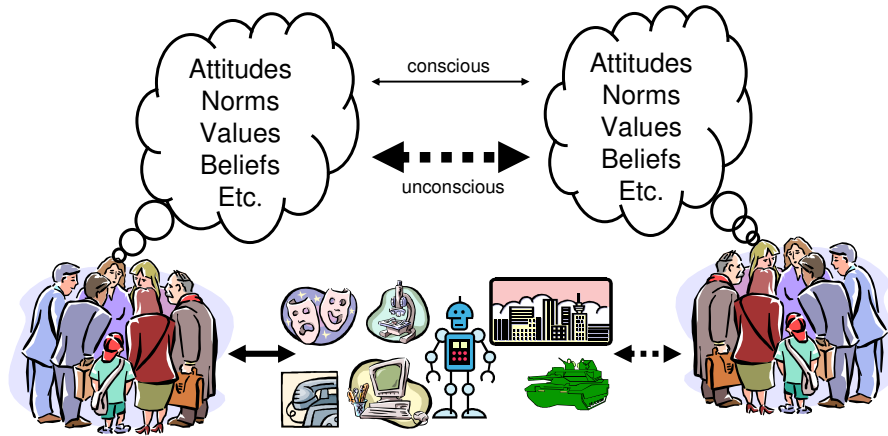
# Culture on different layers



**Year**-layer

**Century**-layer

**Millennium**-layer

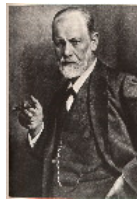**Universal**-layer
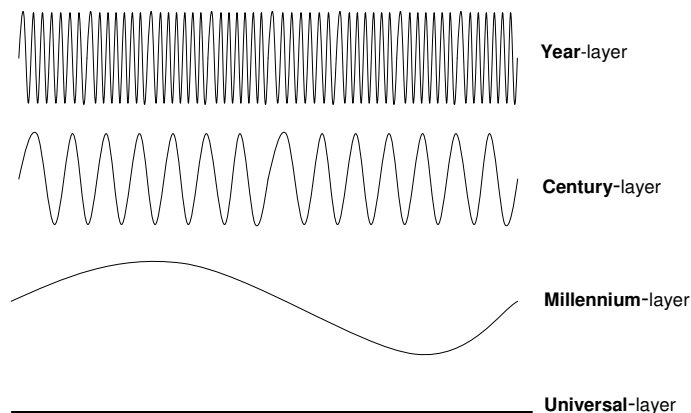
# Cultural Computing: Kansei mediation



Nakatsu R., Rauterberg M., Salem B. (2006). Forms and theories of communication: from multimedia to Kansei mediation. *Multimedia Systems, 11(3), 304-312*

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**First Dogma Attack**: discovery of the *hidden part of mind*



(1856-1939)

In 1932 the discoveries of
**Sigmund Freud**
about the unconscious in particular were revolutionary.
His treatment of neuroses allowed inspection of a "hidden" part of the mind. Freud divided the mind into two parts: the preconscious (ideas and memories capable of becoming conscious), and the unconscious (desires, impulses, and wishes of a mostly sexual and sometimes destructive nature).
All human thought is partly a conflict between the preconscious and unconscious, and partly a compromise to pursue pleasure whilst avoiding danger and dealing with the realities of life.

3
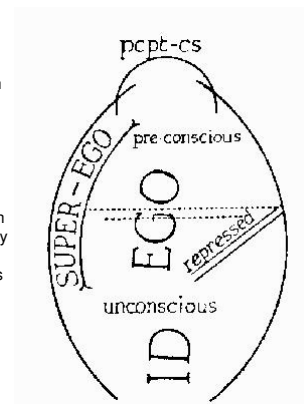
**Second Dogma Attack**: discovery of the *collective unconscious*
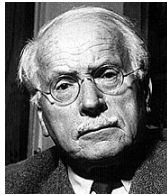
After 1910 the discoveries of
**Carl Gustav Jung**
about the *collective unconscious* and the related *archetypes* were challenging.
Jung dreamt a great deal about the dead, the land of the dead, and the rising of
the dead. These represented the unconscious itself -- not the "little" personal
unconscious that Freud made such a big deal out of, but a new *collective
unconscious* of humanity itself, an unconscious that could contain all the dead, not
just our personal ghosts. Jung began to see the mentally ill as people who are
haunted by these ghosts, in an age where no-one is supposed to even believe in
them. If we could only recapture our mythologies, we would understand these
ghosts, become comfortable with the dead, and heal our mental illnesses.

(1875-1961)

CONSCIOUSNESS

EGO

PERSONAL UNCONSCIOUS

COLLECTIVE UNCON-
SCIOUS
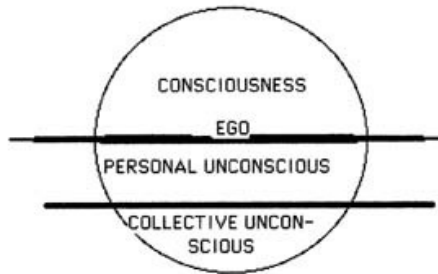
**Third Dogma Attack**: *fields* beyond energy and matter

Most notably, the theory about morphogenetic fields of
**Rupert Sheldrake**
in 1981 reveal a substantial change in the way how we should look at reality.
He developed the idea of *morphogenetic fields*, and has researched and
written on topics such as animal and plant development and behavior,
telepathy, perception and metaphysics. For example, Sheldrake began
working in the 1990s on the alleged telepathic powers of animals, which he
thinks could be explained by *morphic resonance* between two brains.

(1942--)

(video, 4:03)

**Reference**:
Sheldrake, R. (1981). A New Science of Life: The Hypothesis of Formative Causation.

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# Global Consciousness Project

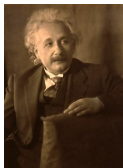Princeton, New Jersey, USA

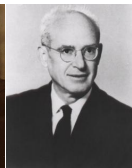(video, 2:30)



**Roger Nelson**
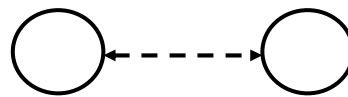


Mindsong MicroREG

# The World of Quantum Mechanics

Einstein-Podolsky-Rosen (EPR) Paradox
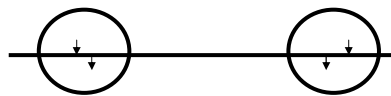


**Albert Einstein**　**Nathan Rosen**

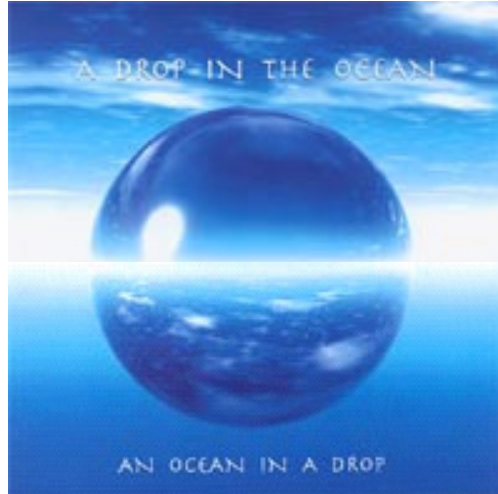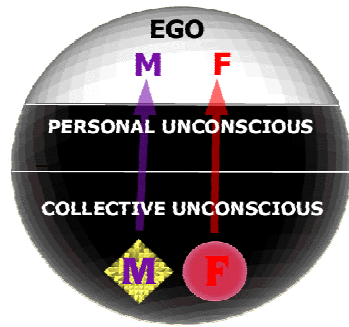locality



**David Bohm**　**Alain Aspect**

non-locality

A. Einstein, B. Podolsky, and N. Rosen, Can quantum-mechanical description of physical reality be considered complete? Phys. Rev. 47, 777 (1935).

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## Cultural Computing: the collective unconscious

## Culture: the East



Enlightenment

**Lao-Tse**
**c.604 - c.521 BC**

**Siddharta Gautama**
**563 – c.480 BC**

**Zen**

**Bodhidharma**
**470-543 AC**

# Cultural Computing

ZENetic computer (2003)
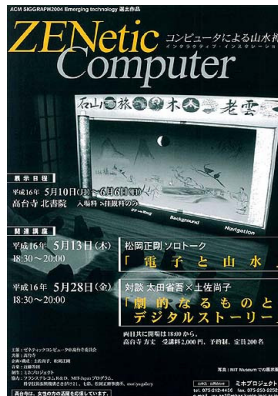


**Naoko Tosa**

**Seigo Matsuoka**

# Cultural Computing

ZENetic computer (video, 3:43)



**Flow**

| Construct *sansui* painting | → | Decide story context |
| Generate *godai* from navigation | ← | Get *goun* personality |

Chaos movement based on user interaction.
Controls user reaction trigger.

Haiku or Zen dialogue

Determine Japanese cultural form from interaction result

**Display kimono patterns**

Comparison    Combination
Choice/Metaphor    Order/Set Series

Personalized *Ten Ox Story*
(ZEN Discipline in ten ox pictures)
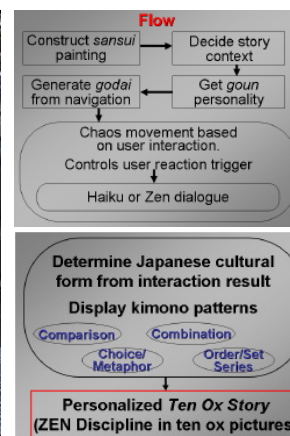
# Culture: the West



**res cogitans** - mind

**res extensa** - body, matter, etc

**René Descartes**
**1596-1650**



synthetic
*a priori* knowledge:

**- time**
**- space**

both *pure forms of intuition*
and *pure intuitions*.

**Immanuel Kant**
**1724-1804**

# Culture in East and West

Cross-cultural psychologist's juxtapose
Eastern *holistic* and Western *analytic* reasoning.

**Eastern** reasoning embraces contradictions among objects in a
yin–yang field of constant change.

**Western** reasoning tends to focus on objects and categories,
and is driven by *formal logic.*

Nisbett RE., Peng K., Choi I. & Norenzayan A. (2001). Culture and Systems of Thought:
Holistic versus Analytic Cognition. *Psychological Review*, 108(2), 291-310 .

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# What would be a Western equivalence to ZENetic Computer?

Possible Answer:

- an interactive experience based on the story of **Alice in Wonderland**



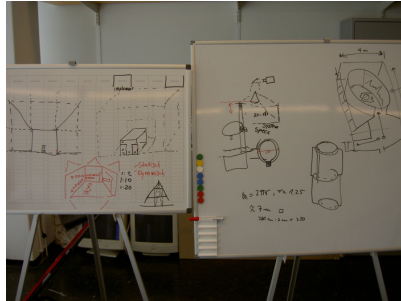**Charles Lutwidge Dodgson
1832-1898**

# ALICE-Lab at TU Eindhoven: Microsoft **Research**

# Planning and Modeling

# Stage-1: In the Park

## Stage-2: Down the Rabbit Hole

**Flow stair lift**

(video, 1:03)

## Stage-3: Drink me – Eat me

(video, 1:25)

**Five sides Cave**

11
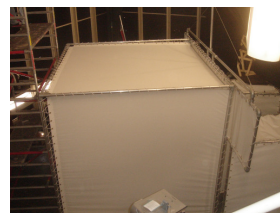
# Stage-5: The Caterpillar

*'Who are YOU?' said the Caterpillar.*
*This was not an encouraging opening for a conversation. Alice replied, rather shyly,*
*'I–I hardly know, sir, just at present– at least I know who I WAS when I got up this*
*morning, but I think I must have been changed several times since then.'*
*'What do you mean by that?' said the Caterpillar sternly. 'Explain yourself!'*
*'I can't explain MYSELF, I'm afraid, sir' said Alice, 'because I'm not myself, you see.'*
*'I don't see,' said the Caterpillar.*

(video, 2:18)
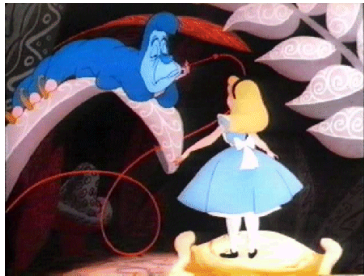
# Stage-6: The Cheshire Cat

*'Come, it's pleased so far,' thought Alice, and she went on. 'Would you tell me,*
please, which way I ought to go from here?'
'That depends a good deal on where you want to get to,' said the Cat.
'I don't much care where–' said Alice.
'Then it doesn't matter which way you go,' said the Cat.

(video, 0:19)

# Stages 1-6: an overview

(video, 8:57)

Let's get aware about our connections to the collective unconscious…

*Thank you for your attention.*

**Team Members**

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