

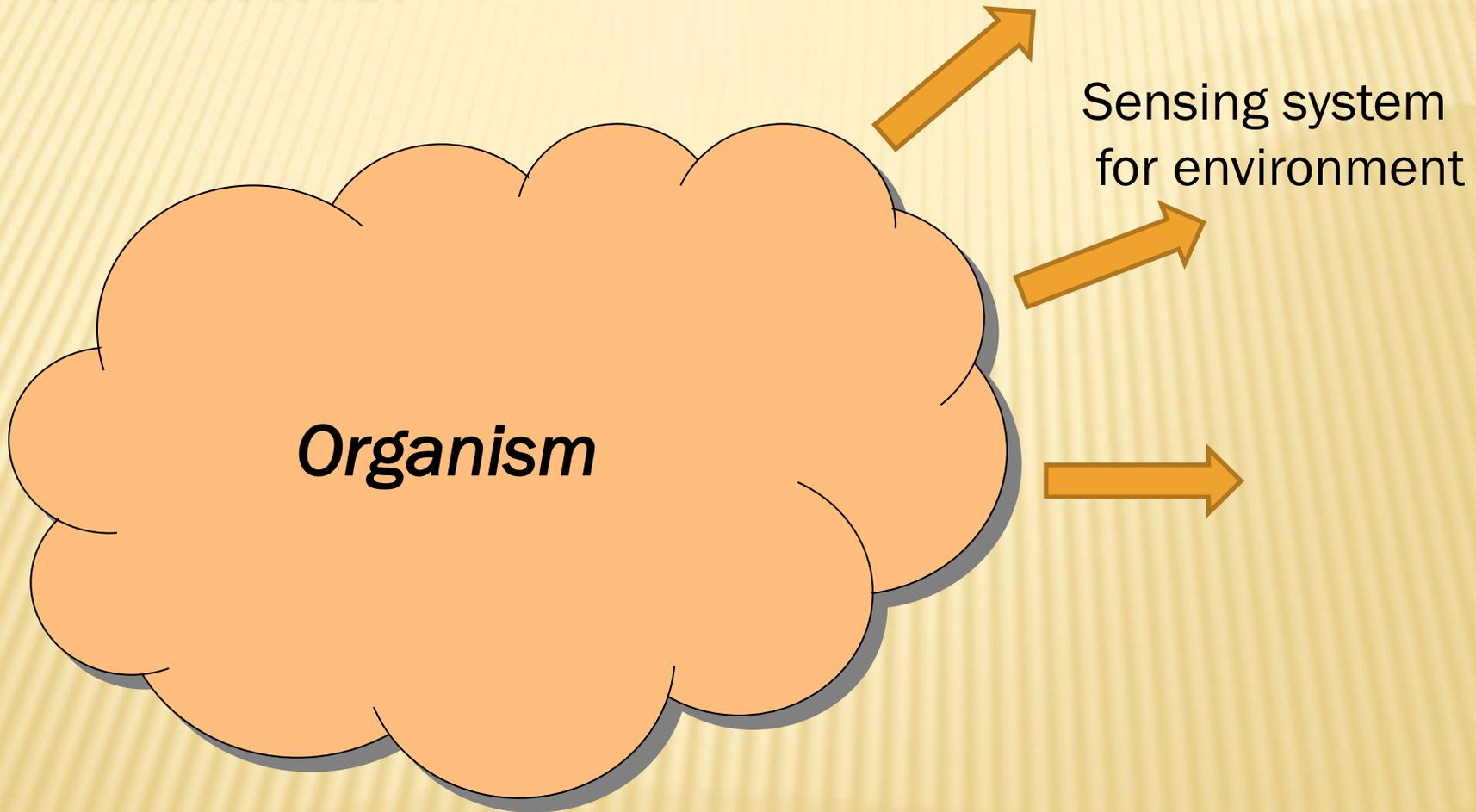


Dr Terence Love

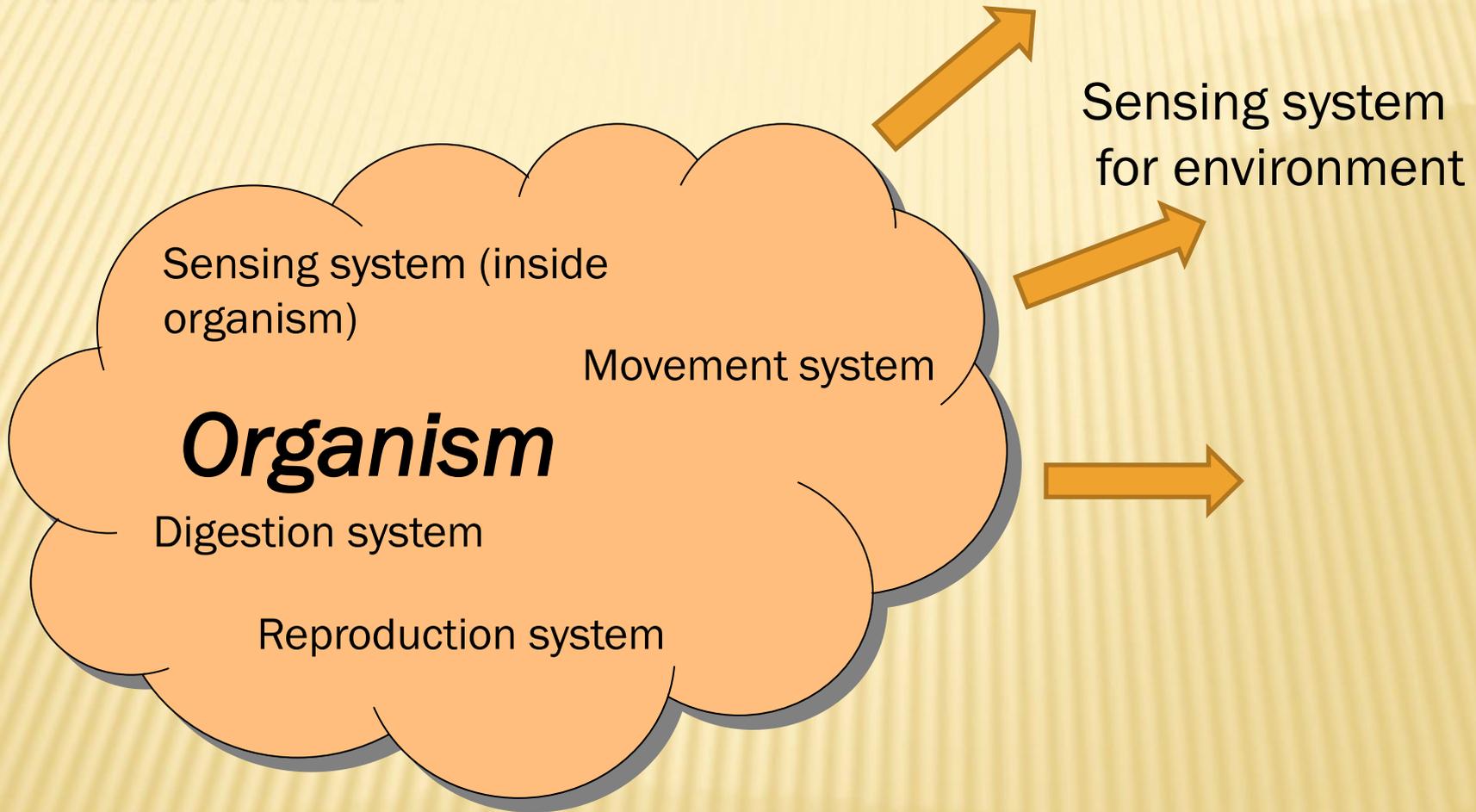
Presented as part of LINUS PAULING MEMORIAL LECTURE Jan 2009
Institute of Science, Engineering and Public Policy , Portland, Oregon

UNDERSTANDING IN DESIGN

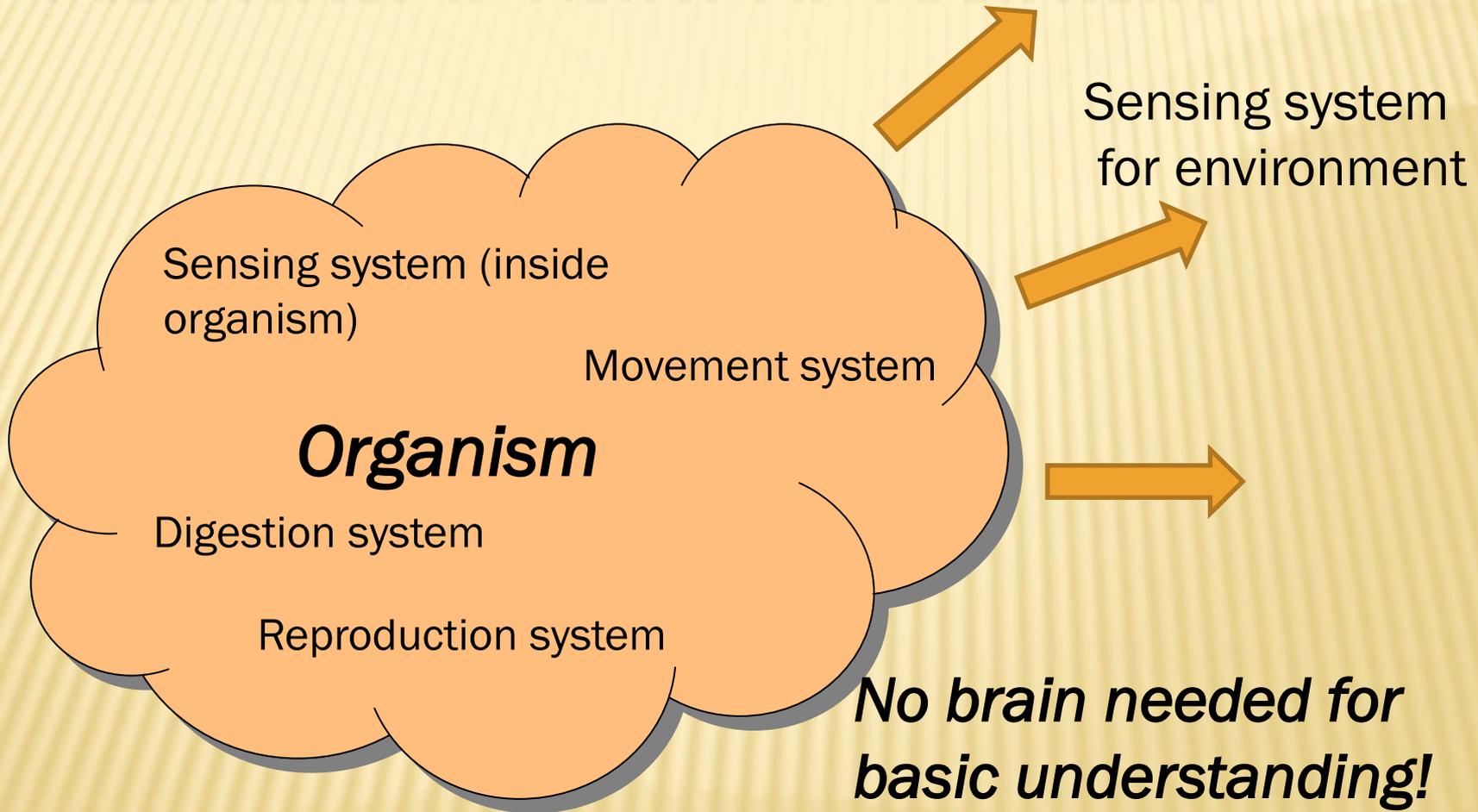
EMOTION



EMOTION



EMOTION & UNDERSTANDING



Sensing system
for environment

Sensing system (inside
organism)

Movement system

Organism

Digestion system

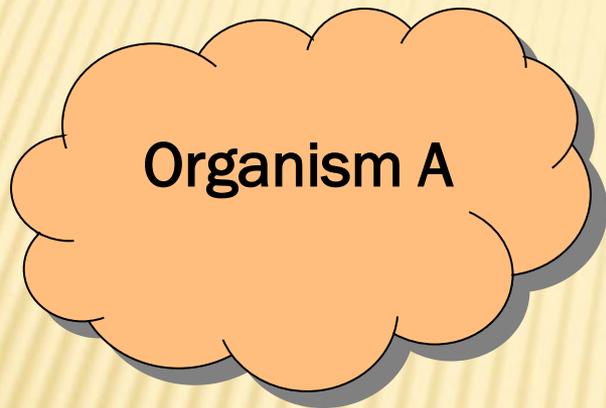
Reproduction system

***No brain needed for
basic understanding!***

Processes that connect systems and result in survival,
continuity, learning & development

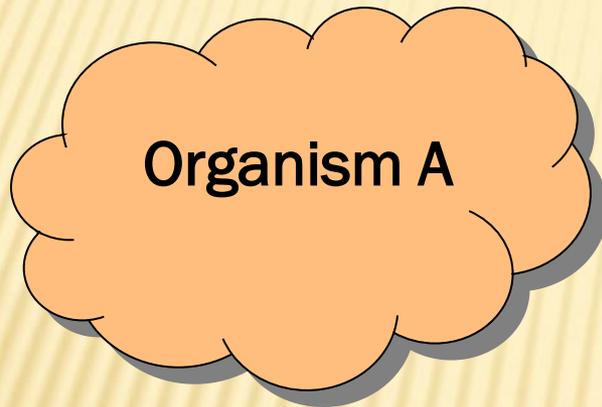
EMOTION BEHAVIOUR

*Move away from? Attack?
Eat? Mate with? Have fun
with?*



EMOTION BEHAVIOUR

Changes inside A



*Move away from? Attack?
Eat? Mate with? Have fun
with?*



Changes inside B



The changes are emotions

DAMASIO - EMOTION

- ✗ **Emotion** – body changes from perception of an object
 - + Internal milieu - endocrine system
 - + Visceral– blood flow, skin, gut etc
 - + Musculoskeletal - muscle tone, posture, facial appearance etc
- ✗ Animals also show emotions



DAMASIO – FEELING AN EMOTION

Feeling of an emotion

Neurological *image* representing
the *emotion*

Feeling an emotion is usually
unconscious.

Different from the **physicality** of
the **emotion**

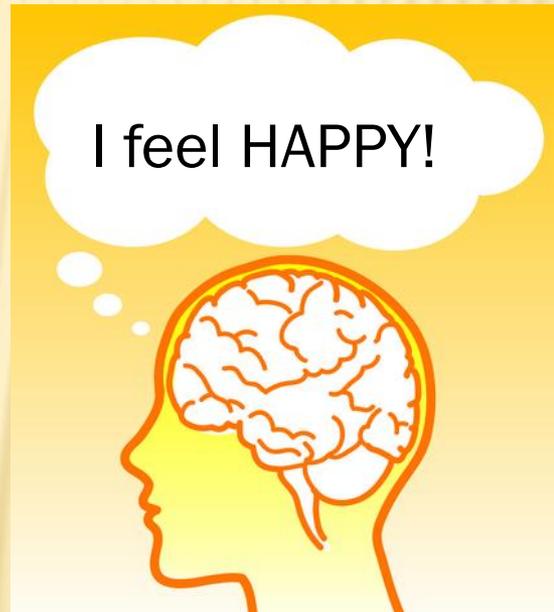


DAMASIO - SELF FEELING AN EMOTION

- ✘ Sense of **self** feeling an emotion (usually conscious)

Different from feeling an emotion.

Different from the emotion itself.



SELF AND CONSCIOUSNESS

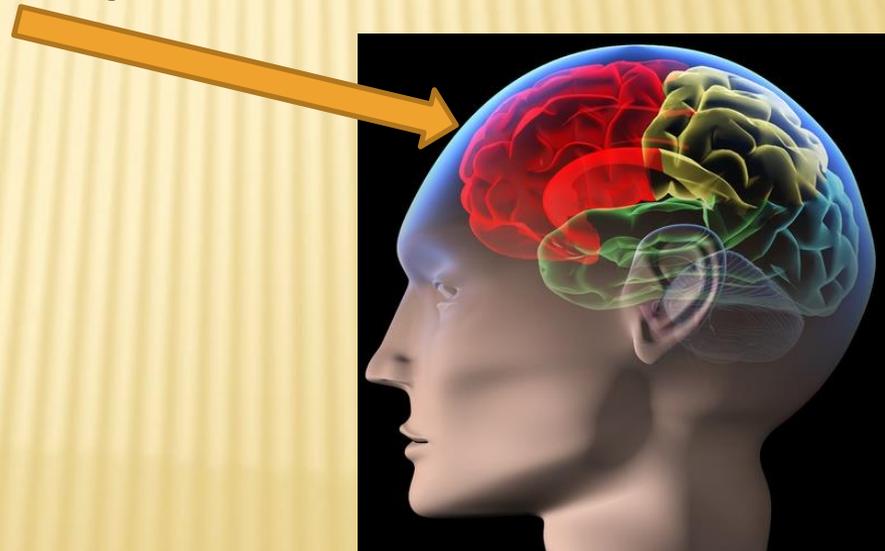
Damasio distinguishes:

- ✘ Proto-self
- ✘ Core –consciousness
- ✘ Extended (autobiographical) consciousness

PROTO-SELF

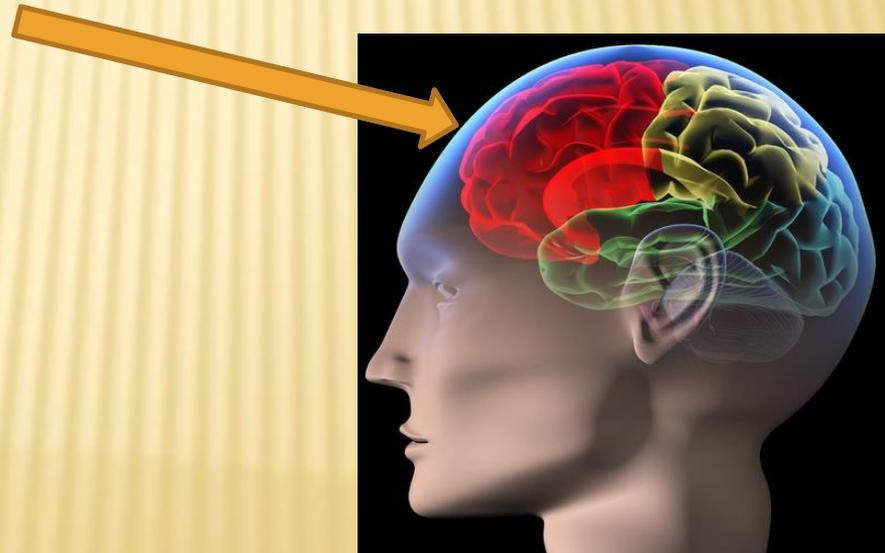
- ✦ **A neurological image** of all aspects of the body at a moment in time. This is homeostatic and unconscious.

Neurological *image* representing all aspects of the state of *body*



PERCEIVING AN OBJECT

Image representing changes in the perceivers body due to perceiving an object



CORE CONSCIOUSNESS

Core Consciousness is the process underpinning an individual's 'sense of self'.

It comprises a neurological 2nd order *neural image* representing the moment by moment differences between the **proto-self** and body and neural changes due to perceiving an *object*

Core -consciousness is the **basic** sense of the existence of oneself

It **does not** depend on **language!**



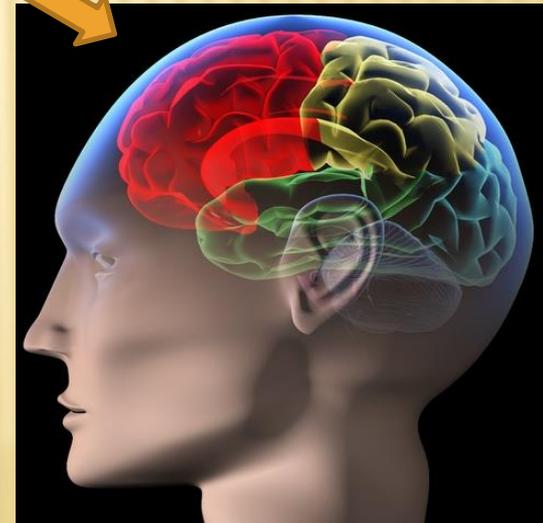
'AS IF' LOOPS

Memories and thoughts are **objects** and have similar emotional effects to real objects

Memories and thoughts trigger emotions and feelings



Emotions and feelings facilitate memories and thoughts

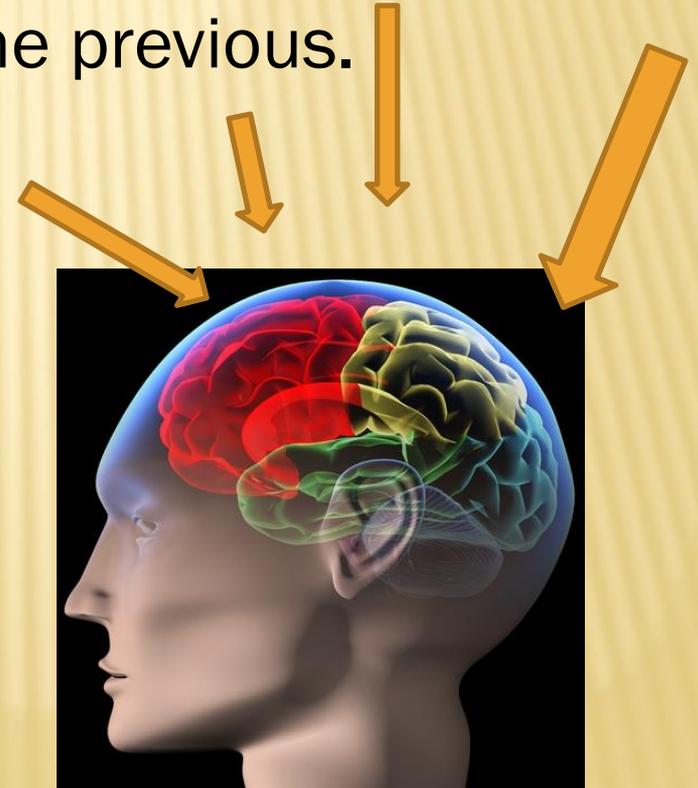


EXTENDED CONSCIOUSNESS

Memories, experiences, thoughts, fantasies in a person's history all exist as neural objects dependent on and processed by the previous.

Over time, all incidents through core-consciousness convert to memories and autobiographical self

This is the functional basis of design, creativity, intuition, ethics, free will....

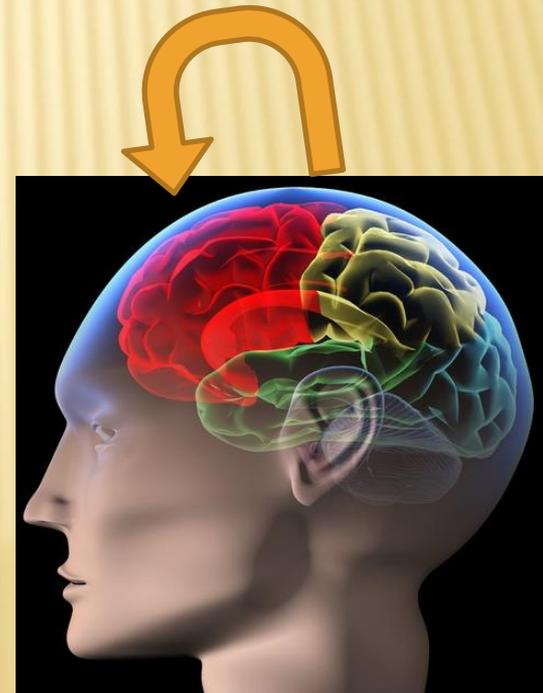


Implications
for
Holistic Design
and
Philosophy

LEARNING, EMPATHY AND CULTURE

- ✘ **Remembering** memories results in core consciousness processes that emphasize and associate with emotions .
- ✘ Gives the ability to identify objects (real, social, conceptual, imagined etc), associate objects with emotions and behaviours and attribute **meaning**.

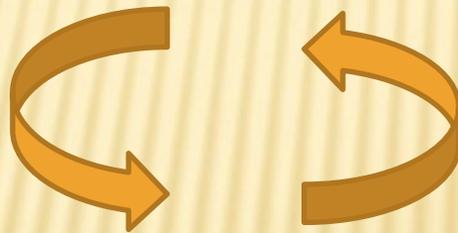
This provides the basis for learning, empathy, culture, conditioning etc



DESIGN CREATIVITY & ABDUCTION

- ✘ Thoughts about **design problems** and **solutions** create opposing emotional states with changing feelings of increased or reduced relaxation.

Emotions in the body result in thoughts of possible solutions - creativity



Changes in feelings of body tension guide abductive cognitive judgements

HOLISTIC DESIGN

Thank you for your attention

Questions?

CONTACT DETAILS

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SOME OUTSTANDING QUESTIONS

- ✘ Which parts of designing involve emotions? How? What do they do? How essential are they?
- ✘ Which parts of designing involve feelings? How? What do they do? How essential are they?
- ✘ How important is the ability to represent the world in imagination with feelings and emotions? Why?
- ✘ How important is it to be able to distinguish between reality and fantasy when everything is full of emotion and feelings? Why?