

# **The Wide Open Doors of Perception:**

## **Our Innumerable Ways of Exploring the World**

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# How do I perceive you? Let me count the ways

- Phenomenology largely structured by the senses.
- Consciousness characterised by various “modes of presentation”.
- Questions of “what is presented” constrained or organised by the manner of presentation.



# The Traditional Explanation of Modality

- Called the “specific nerve energies” doctrine.
  - Put forward initially by Johannes Müller in 1826.
- Each sensory organ is sensitive to a specific form of information from the world.
- The sensation is given its character by these dedicated nerves.
  - Extended to “neural organs” in the brain.

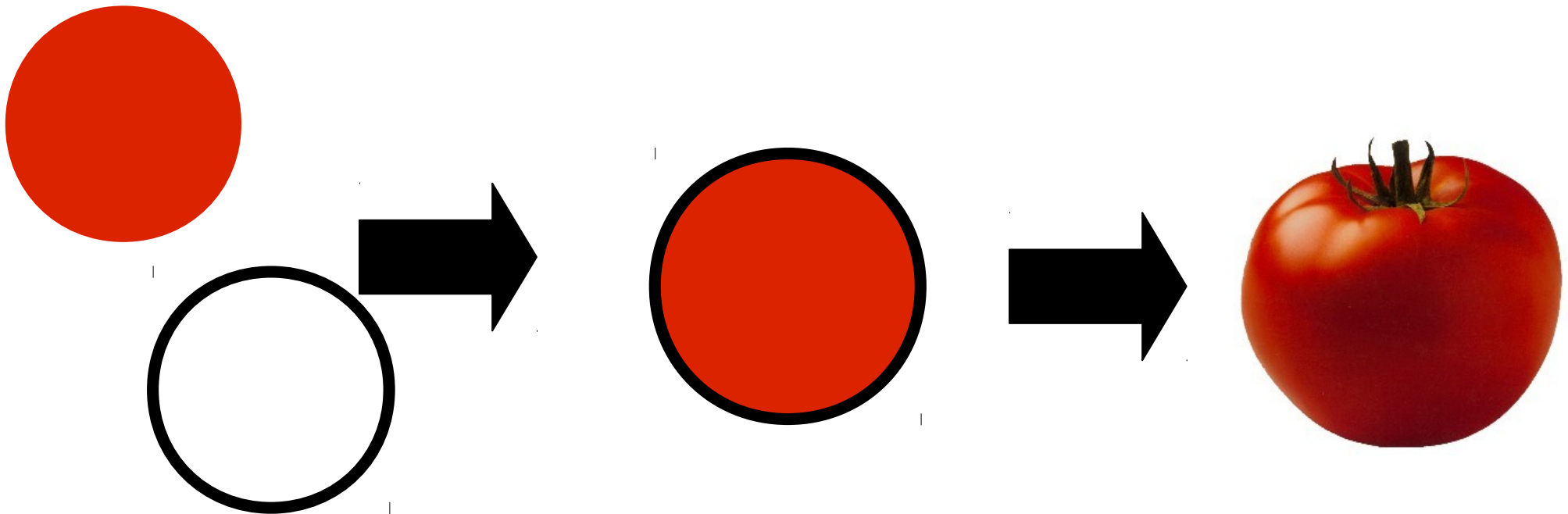


# Challenging Traditional Modalities: Are They That Separate?

- Inter-modality influence at low levels challenges the idea that they are really separate.
  - McGurk effect (McGurk & McDonald, 1976).
  - Illusory-flash effect (Shams *et al.* 2000; Violentyev *et al.* 2005).
- Shimojo & Shams (2001) claim:  
“Sensory modalities are not separate modalities.”

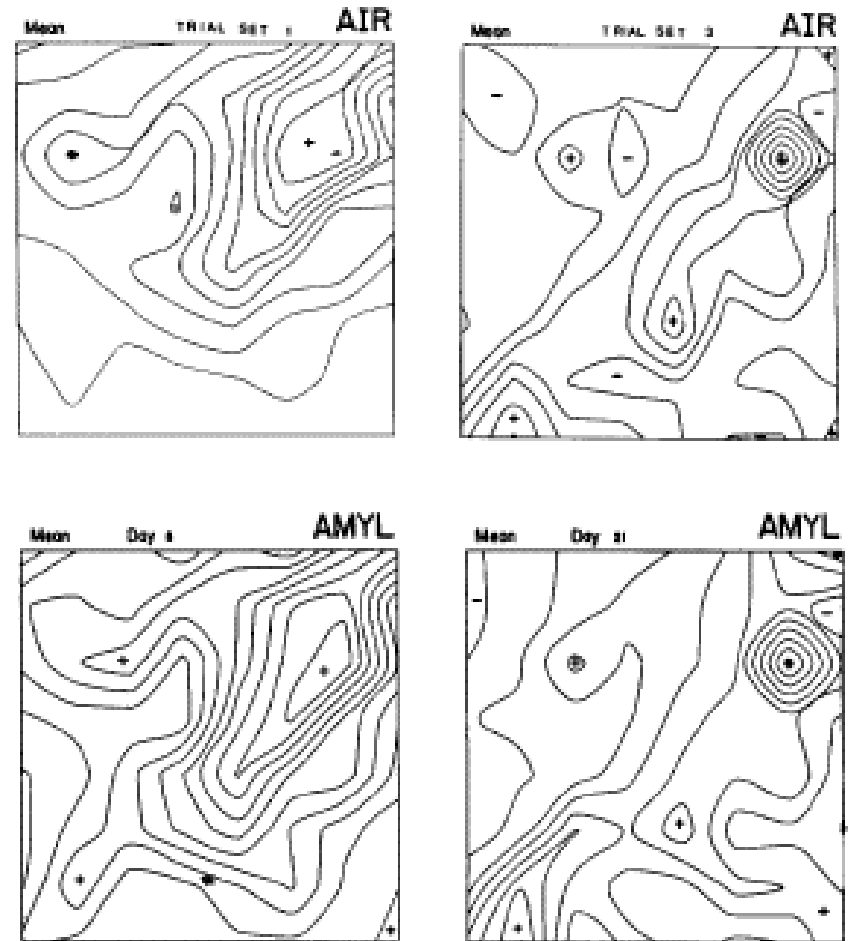
# Challenging Traditional Modalities: Neural Complications

- We tend to think in terms of “progressive processing”.



# Challenging Traditional Modalities: Neural Complications

- The sensory signal is “lost” very early in the brain.
  - Walter Freeman (1991, 2000) has shown that sensation “disturbs” already on-going activity, it doesn't start it.
  - So processing isn't that progressive, and our thinking is organised by what we are already doing, rather than by sensory organs.



# Challenging Traditional Modalities: Seeing With Your Skin



- Bach-y-Rita (1972) has shown that vision-like experiences can be produced by sensations on the skin.
  - Sensations need to be dependent on the perceiver's actions.
    - Passive versions of the apparatus do not produce vision-like perceptions.
- Auvray *et al.* (2007) report participants experiencing a “new sense”.
  - Using a vision-to-hearing device called the Voice.

# The Story So Far...

- Modalities aren't as separate as we thought.
- The brain doesn't much care for the details of sensation.
- Actively engaging with the world is really important.

# Enactive Perception

- Perception exploring the world.
  - Not letting it wash over you.
- Perception involves mastering our interactions with the environment.
  - Not abstract or passive information processing, but skilful action.



# O'Regan & Noë's Modalities

- Modalities are coherent sets of sensorimotor contingencies (O'Regan & Noë, 2001; O'Regan, Myin & Noë, 2005).

<b>Action</b>	<b>Seeing</b>	<b>Hearing</b>
Blink	Big change	No change
Move eyes	Translating flowfield	No change
Turn head	Some changes in flow	Left/right ear phase and amplitude difference
Move forward	Expanding flowfield	Increased amplitude in both ears

# Skills

- The term “skill” only loosely defined in terms of “knowing how”.
- But skills also tend to imply intention.

When we speak of “skill” we mean an ability that allows a goal to be achieved within some domain with increasing likelihood as a result of practice.

Rosenbaum, Carlson & Gilmore, 2001, p.454

- The conception of intention or goal-directedness at use in enactive descriptions not clear.

# Skilfully Engaging With the World



- Perception is never abstract, but always structured by the skills we are using.
- We never just “see”, but see “chessily”, or “socially”, or “walkingly”, or “soccerly”.
  - The modality is the skill as much as the organ.

# Stabilising Emergent Modalities

- Modalities emerge in the context of goal-directed action.
- Such action usually supported by communities.
  - A community encourages, demands and validates perceptions (Smith, 2007).
- Shared embodiment a big plus here.



# Wait a minute...

## Red is red is red

- Surely I can still talk about vision, regardless of what other skills might be going on?
  - After all, other skills change, but my perception of red stays the same.
- True.
  - BUT, without other skills, vision would never happen either.
  - Even when the redness is “the same”, its sameness depends on more than the visual.



# Wait a minute...

## We can talk about consistencies

- By identifying consistencies or continuities across contexts, we can identify the “real” modalities.
  - Surely, underlying basic modalities will show up.
- But this won't get the old modalities back in a way that such critics would find satisfying.
  - A modality will be a fuzzy set of potential interactions, identified not by rigid biological criteria but by the activities they enable.

# Wait a minute...

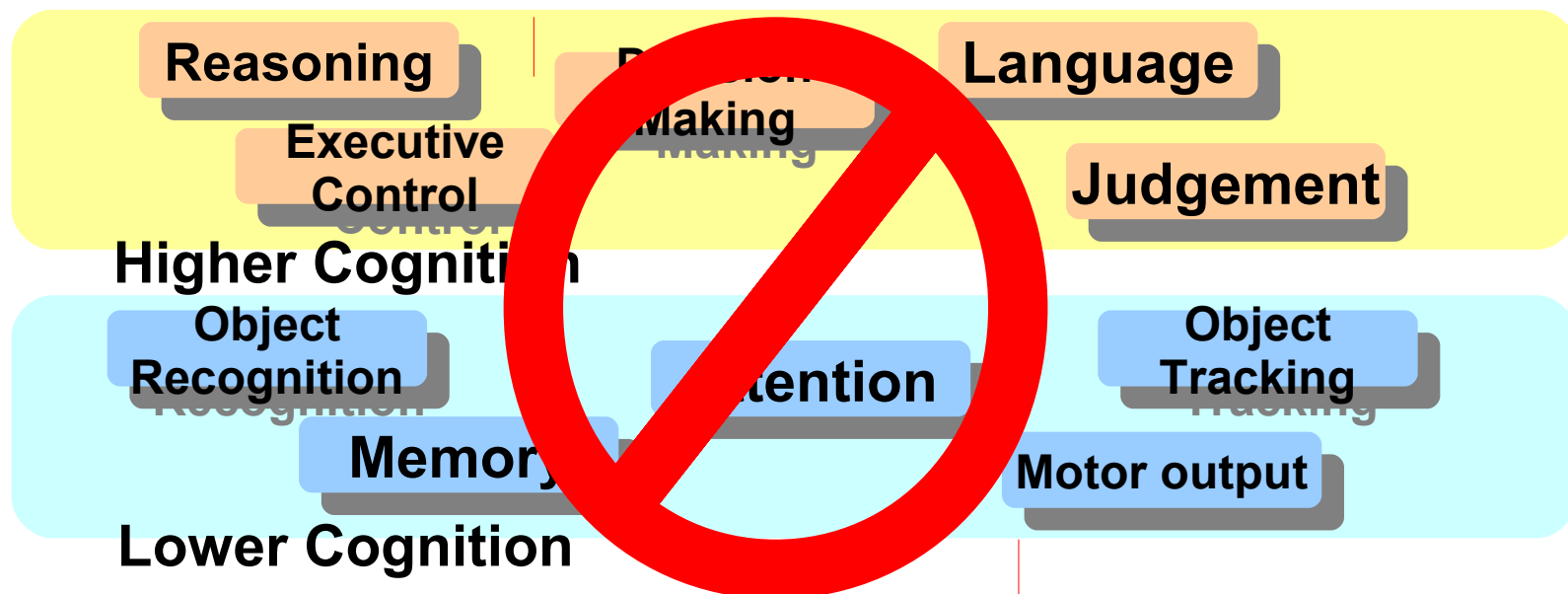
## Some modalities are *special*



- Some modalities have biological organs associated with them.
  - Maybe these are the *basic* modalities, and other skills are derivative.
- Except sensation without action gets us nowhere.
  - We do need sensation, but it is not enough on its own, even for the “basic” senses.

# Implications for Cognition and Consciousness

- Rejection of progressive processing model.
- Emphasis on the agent's *perspective* rather than modular cognitive processes.
- Cognition to be examined and assessed with context in mind.
  - Dynamics of the interaction to be analysed rather than exchange of information.
  - Goals of the agent and skills available must be part of any analysis.

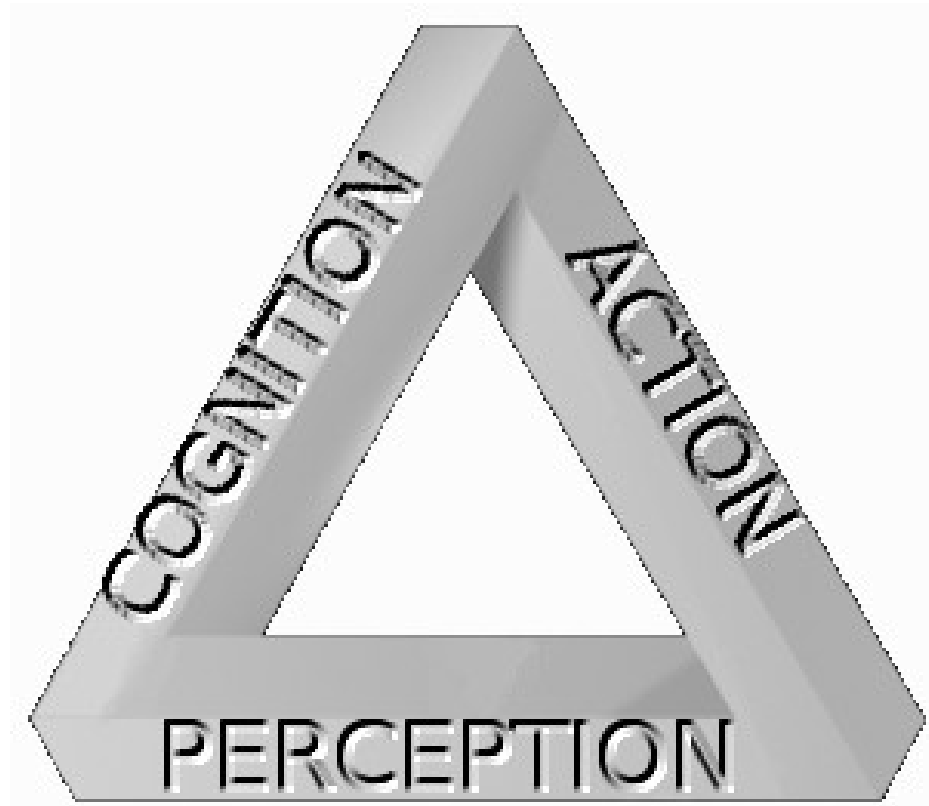


# Exploratory Capacities

- Enactive thinking does not only emphasise the traditional sensorimotor aspects of exploration of the world.
- Other sensitivities:
  - Affective / empathic (Thompson, 2007; Lewis, 2005)
  - Linguistic
  - ...
- Some of the conclusions available here similar to those of Harré (1999), Benson (2001) on the role of the self in “navigating human worlds”.

# Questions for the Future

- Just what is context anyway?
  - Everything about the mind seems to have a perceiver-figure-ground structure, but we tend to either ignore the ground or the perceiver.
- Can we understand the emergence and dynamics of perspectives?
  - Enactive theorists place a heavy emphasis on autonomous dynamics. Are there principles of such dynamics to find in human cognitive activities?



Thank You.