

A New Approach to Identifying the Mark of the Cognitive

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objectives

- Articulate the distinction between object-based and judgment-based approaches to conceptual explication.
- Describe the sensitive management account (SMB).
- Illuminate how SMB functions as a judgment-based explication of *cognition*.



outline

- Background:
cognition border wars & the mark of the cognitive
- Two approaches to conceptual explication:
object-based & judgment-based
warning: vitalism
three motivations
- The judgment-based approach, illustrated:
the sensitive management account
response to objections

Border Skirmishes



locating cognition in the world



what is cognition?

Hifalutin cognition

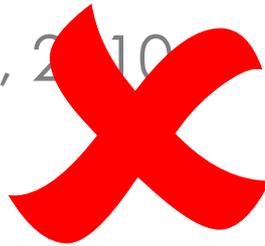
- Thought in general

Greene et al. 2006:

- “cognition”

Rowlands 2009, 2010

- Cognition



- Not perception
- Not affect
- Not motor control

Everyday cognition

- “information-processing”

- cognition

- cognition



- Includes perception
- Includes affect
- Includes motor control

the cognition border wars

- Machine cognition (Turing 1950)
- Animal cognition (Putnam 1976)
- Embodied cognition (Varela, Thompson & Rosch 1991)
- Social cognition (Hutchins 1995)
- Extended cognition (Clark & Chalmers 1998)
- Insect cognition (e.g. von Frisch)
- Plant cognition (Trewavas 2003)
- Enactivism (Varela, Thompson & Rosch 1991)
- Life = Cognition (Maturana & Varela 1980, Heschl 1990, Stewart 1996, Thompson 2010)



the mark of the cognitive



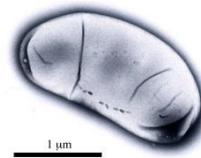
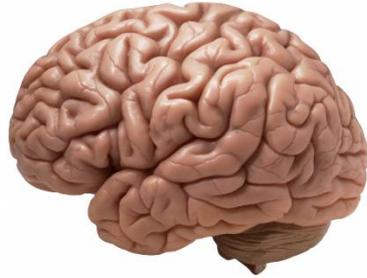
the mark of the cognitive

- Adams & Aizawa (2001, 2008): distinguished by the operation of a causal mechanism that bears non-derived content.
- Rowlands (2009, 2010): at least what belongs to a subject and involves information processing, the proper function of which is making available to the subject (or to subsequent processing operations) Shannon information in the form of representational states bearing non-derived content.
- Adams & Garrison (2013): what enables a system to behave or act for reasons, where those reasons are the system's own and are possessed in virtue of a goal- or desire-like representation.
- Buckner (forthcoming): representational structure that produces flexible behavior.

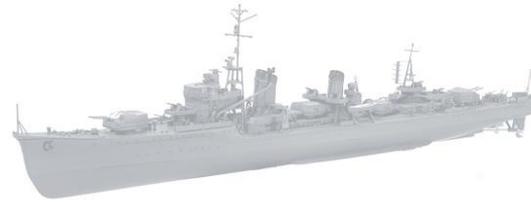
But, you know, whatever.



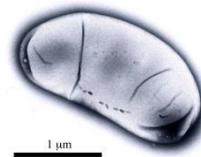
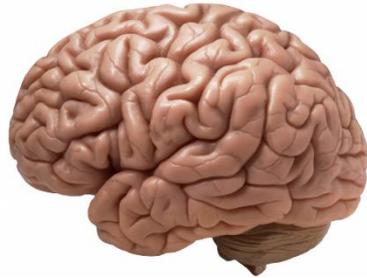
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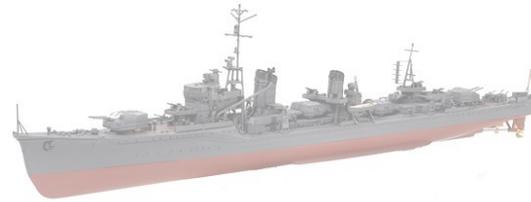
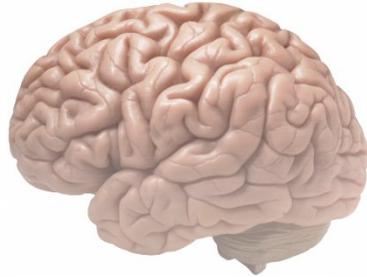
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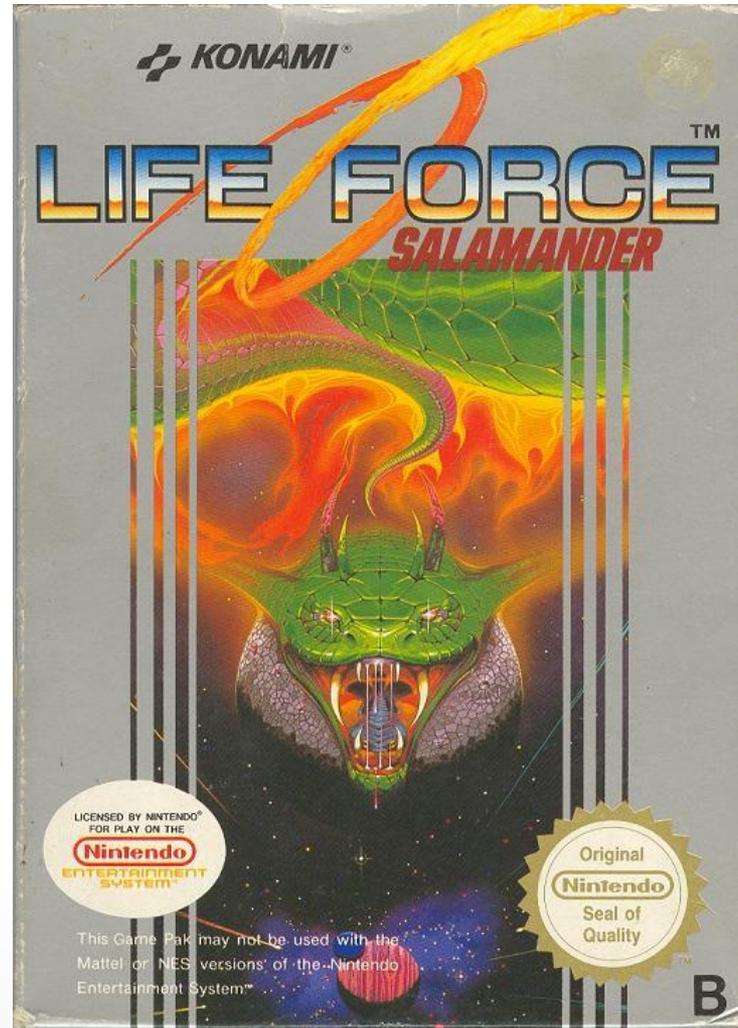


A Copernican Twist

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from object-based to judgment-based approaches

the legend of vitalism



the legend of vitalism



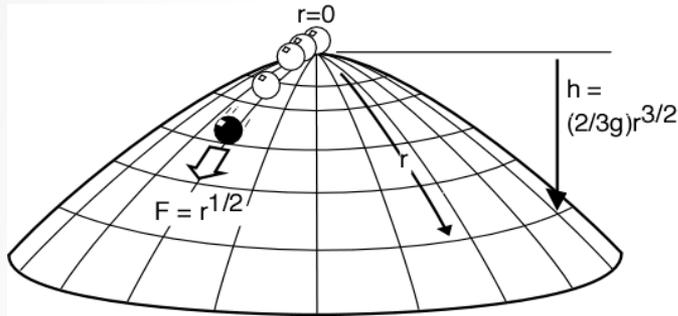
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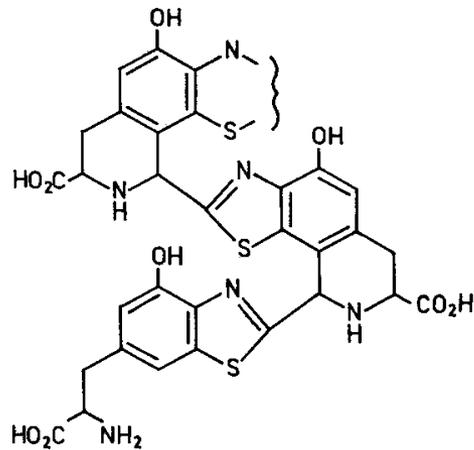


the legend of vitalism



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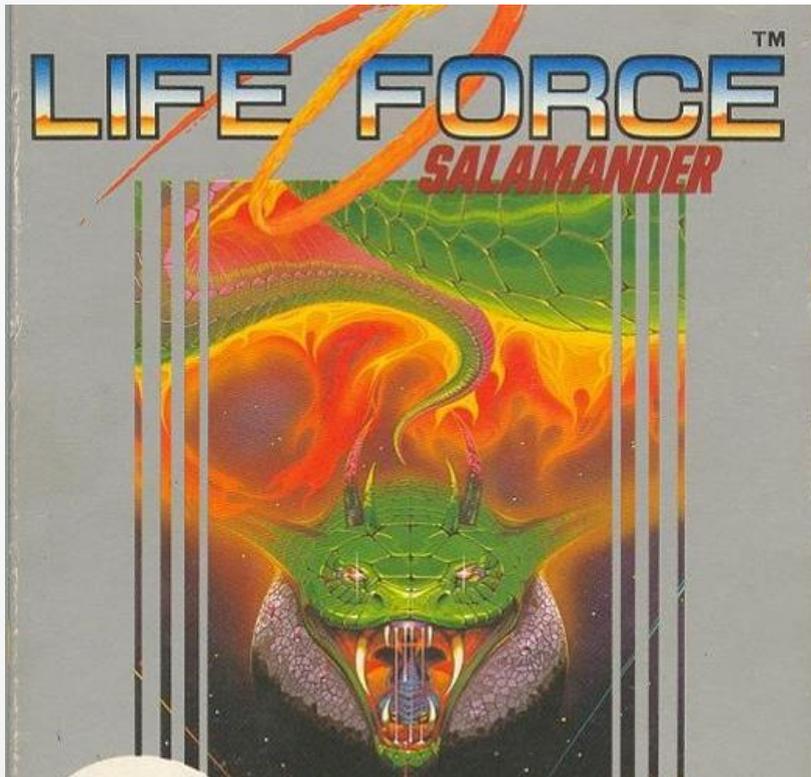


biological judgment



Normative, teleological, and functional concepts

biological judgment

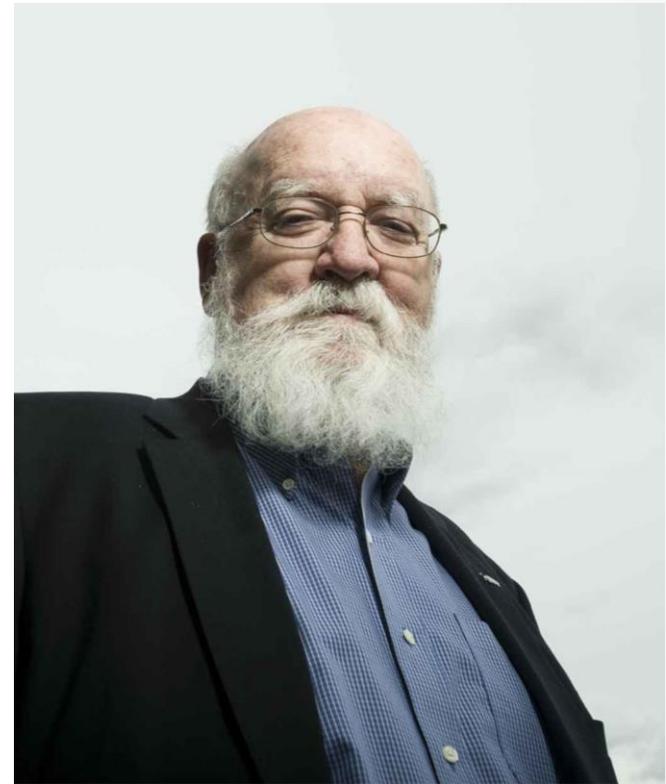


Copernican twist

object-based

“To ask about the bounds of cognition is to ask what portions of spacetime contain cognitive processing. It is to ask about what physical, chemical, or biological processes realize, constitute, or embody cognitive processes.”
(Adams & Aizawa 2008, 16)

judgment-based



Copernican twist

There is an existing practice.

Controversy



Explain the variance

Three Motivations

• • •

for judgment-based approaches in philosophy of science

#1: metaphysical baggage

Aren't judgment-based accounts anti-realist?

- No.
- Real patterns
- Genes & memes

Aren't they apriorist?

- No.
- Conceptual explication, not *a priori* metaphysics.

#2: relation to inquiry

Logical anthropology

“Making it explicit”

#3: semantic humility

“Nothing is hidden” (Wittgenstein 1953, §435)

There is an existing practice.

Controversy

→

Explain the variance

Cognition as the Sensitive Management of Behaviour



the judgment-based approach, illustrated



sensitive management

Cognition is the sensitive management of behaviour.

sensitive management

Cognition is the operation of the mechanisms that

(1) are sensitive to the organism's circumstances,

(2) manage the behaviour of an organism,
and where

(3) that management is rationalised by its
relation to the goals of the organism.



sensitive management

Cognition is the operation of the mechanisms that

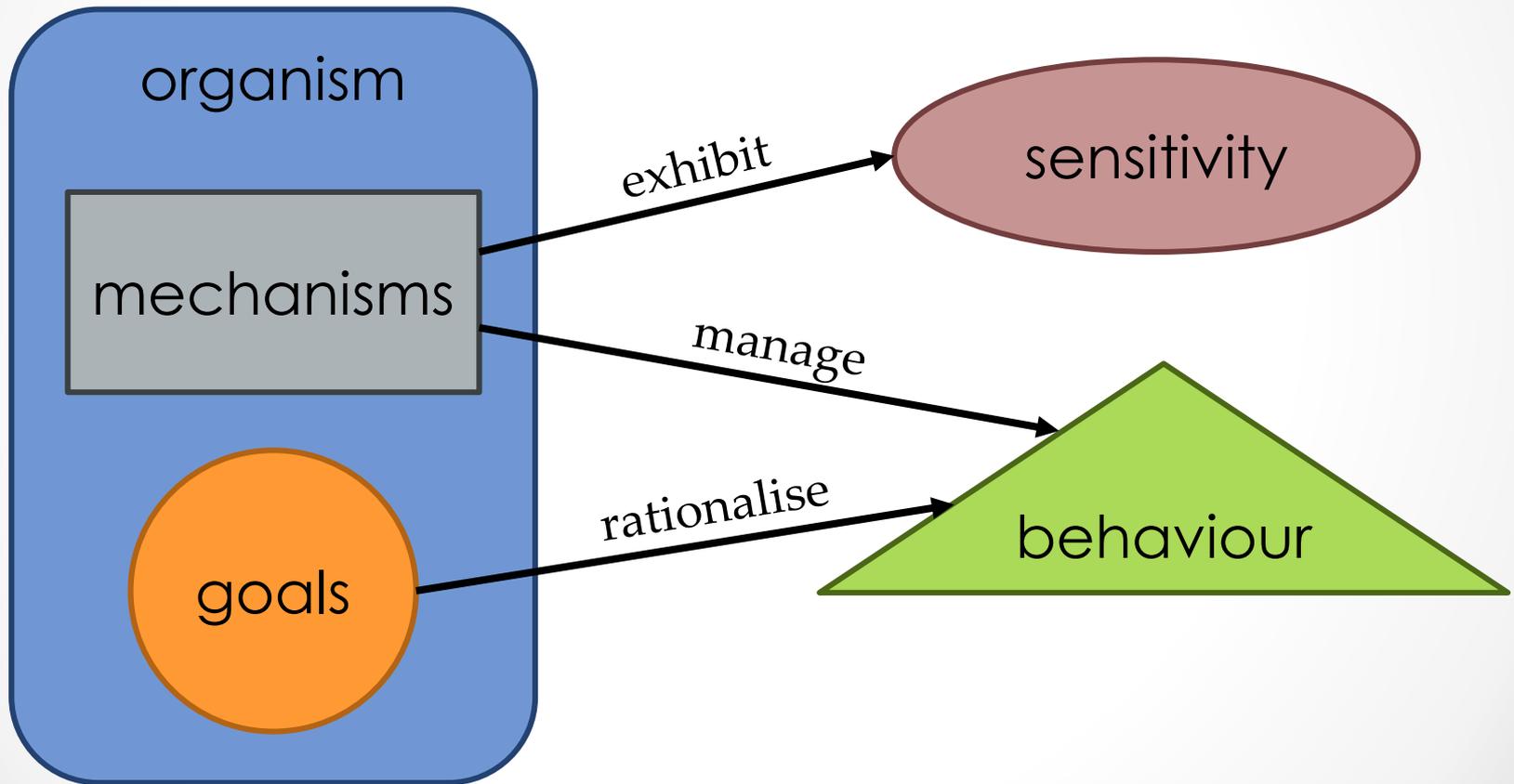
(1) are **sensitive** to the **organism**'s circumstances,

(2) manage the **behaviour** of an organism,
and where

(3) that management is rationalised by its
relation to the **goals** of the organism.

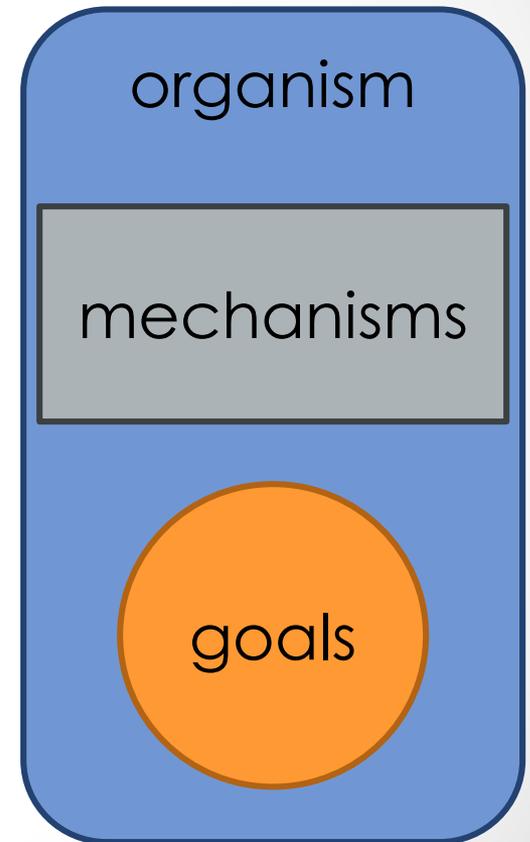


sensitive management



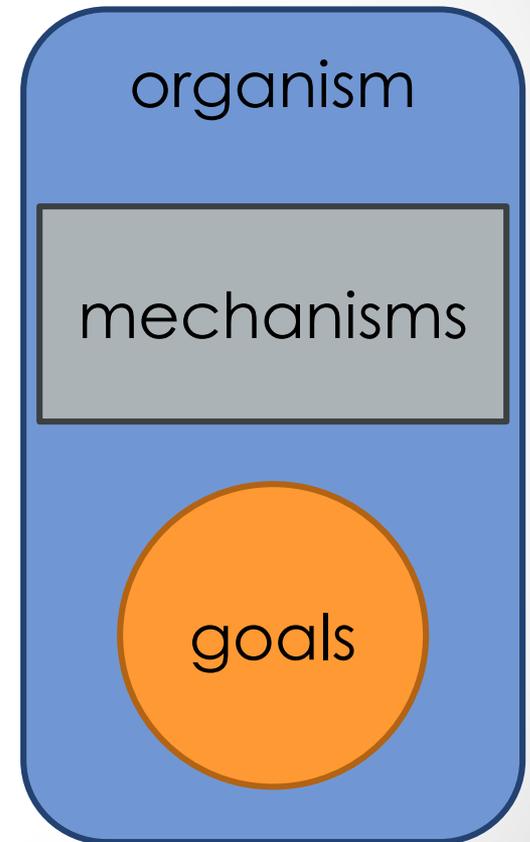
sensitive management

- To view a system as an organism → to view it as a system of mechanisms organized to promote its goals.
- Goals include fitness, but potentially other objectives. The set of admissible or actual goals is contestable.
- Where there are multiple goals, their relations (relative weights, defeasibility conditions, &c.) are also contestable.

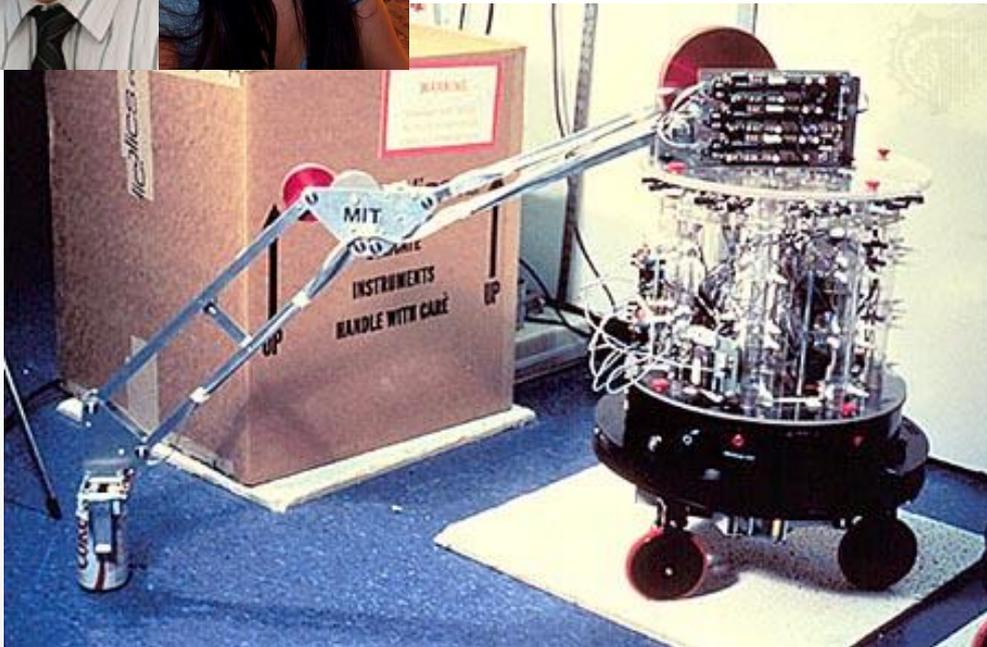


sensitive management

- A mechanism is a structure of component entities and component operations that are organized such that they produce a phenomenon. (Machamer, Darden & Craver 2000, Bechtel & Abrahamsen 2005)
- Phenomena = intelligent behaviour, cognitive capacities.
- Components need not be physiological (pace Weiskopf 2011).



sensitive management

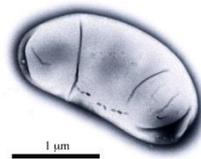
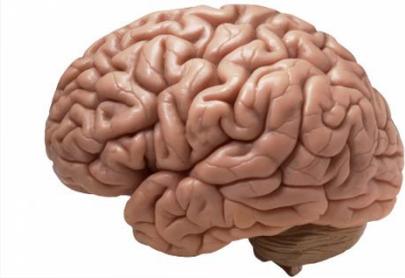


organism

mechanisms

goals

sensitive management



organism

mechanisms

goals

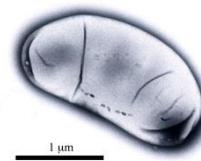
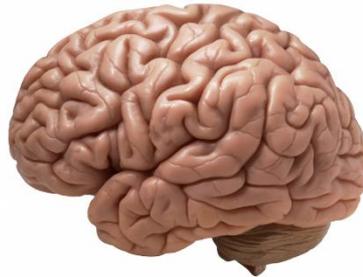
sensitive management

- Managing behaviour → producing differential behaviour.
- Behaviour is contestable.
(Cf. embodied cognition.)



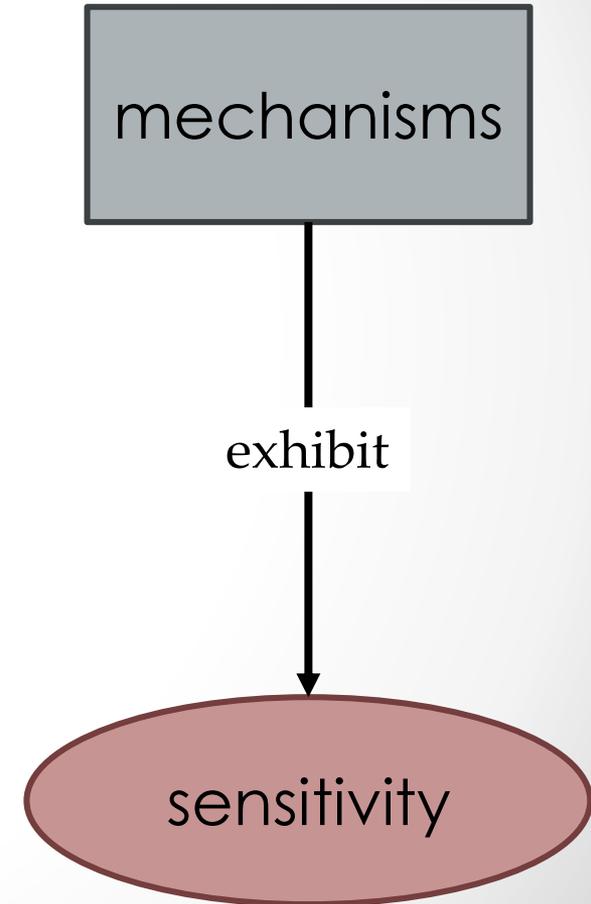
manage

behaviour



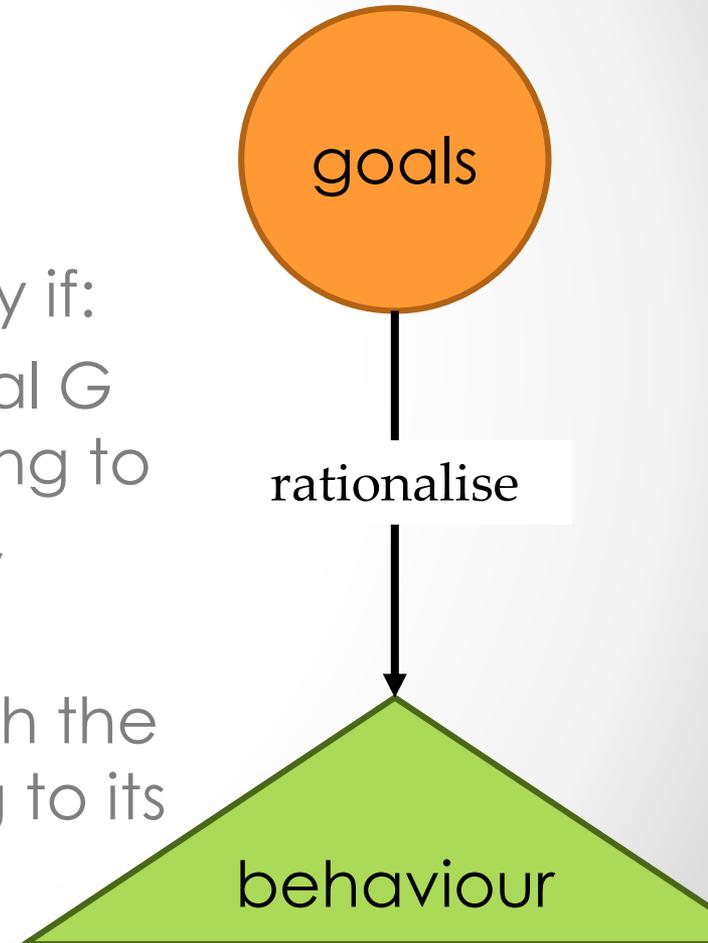
sensitive management

- Sensitivity e.g. by perception, interoception, or inference.
- Maybe robust (cf.  ,  .)
- Maybe only creatures that manifest ontogenetic adaptation, but 
- Maybe only global sensitivity (à la Fodor), but cf. Müller-Lyer, &c.



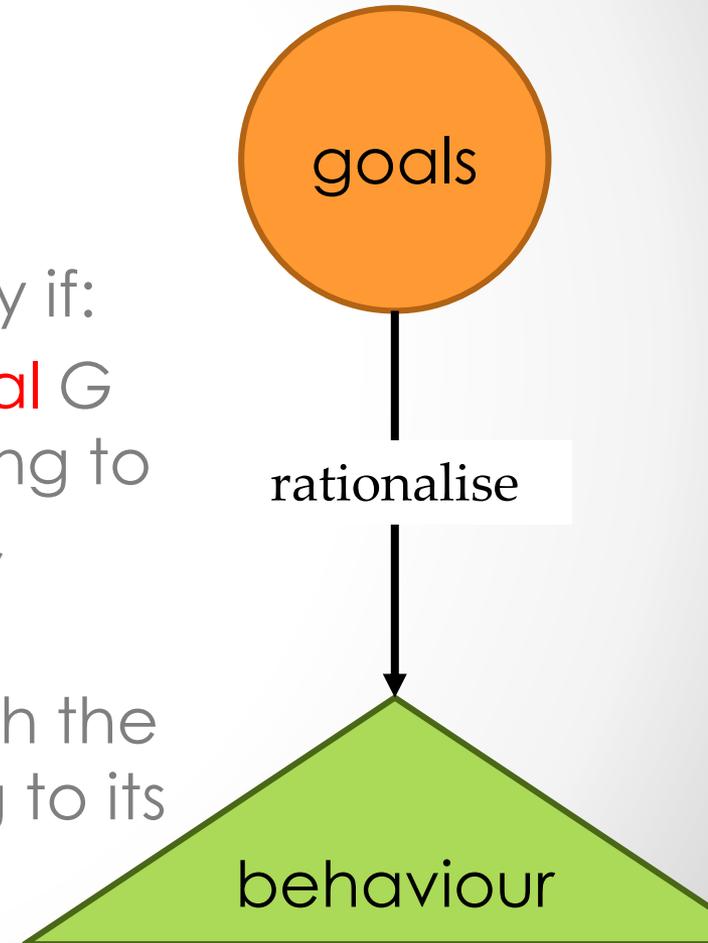
sensitive management

- Cf. Davidson 1963.
- A pattern of behaviour B of an organism is rationalised if and only if:
 1. B is adaptive, relative to a goal G of the organism, and according to a pattern of circumstances C ,
 2. The organism is sensitive to C ,
 3. there is a mechanism by which the organism exhibits B according to its sensitivity to C .



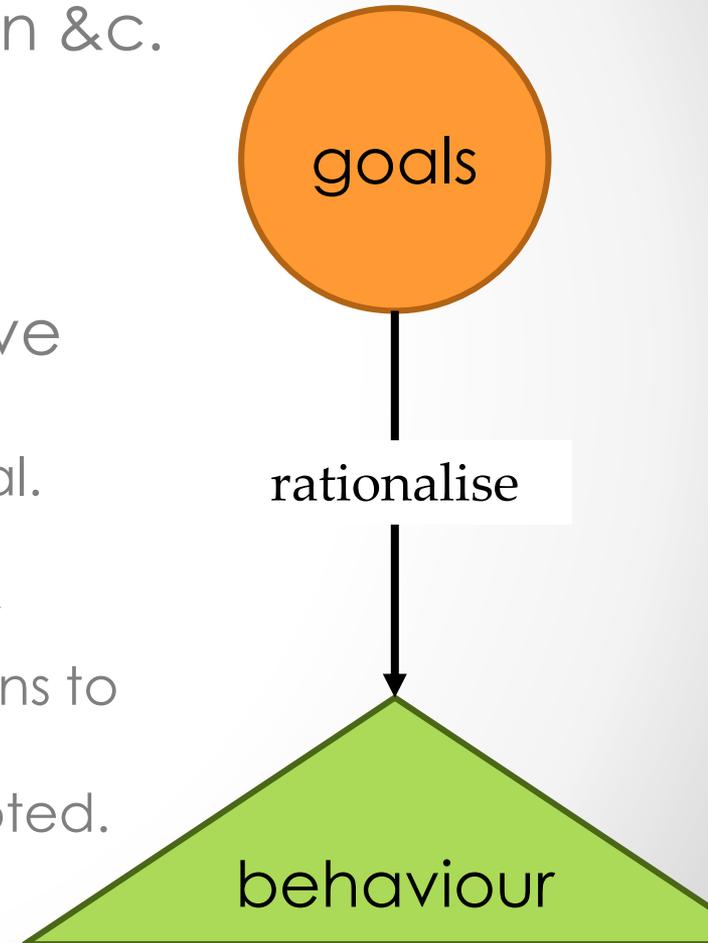
sensitive management

- Cf. Davidson 1963.
- A pattern of **behaviour** *B* of an **organism** is rationalised if and only if:
 1. *B* is adaptive, relative to a **goal** *G* of the **organism**, and according to a pattern of **circumstances** *C*,
 2. The **organism** is **sensitive** to *C*,
 3. there is a **mechanism** by which the **organism** exhibits *B* according to its **sensitivity** to *C*.

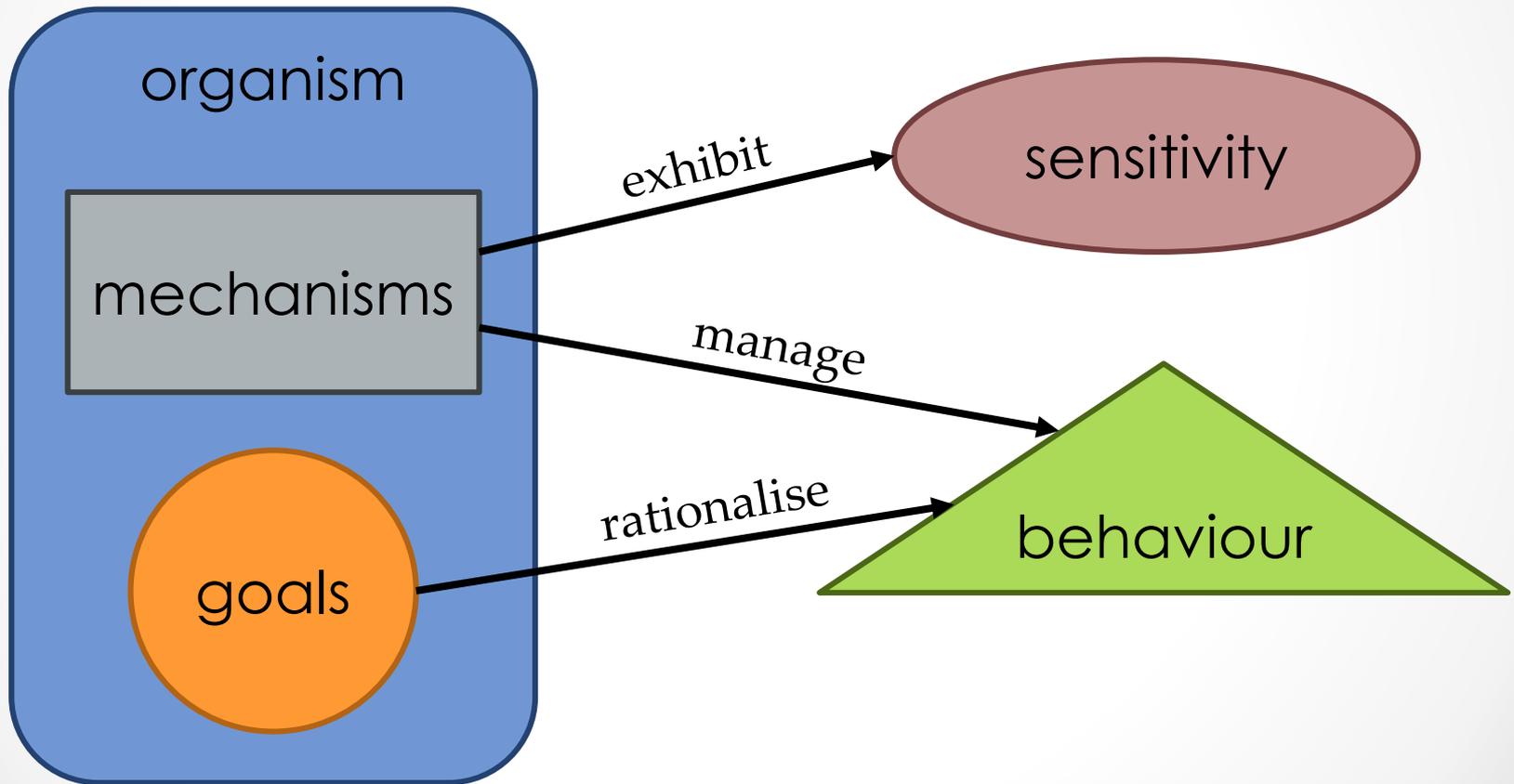


sensitive management

- Rationalisation, like goal-ascription &c. is performed by the inquirer, not necessarily by the target system.
- Rationalisation allows for normative failures:
 - A behaviour may not achieve its goal.
 - Mechanisms may malfunction.
 - There may be failures of sensitivity, or
 - sub-goals may not be effective means to ultimate goals, or
 - mechanisms may become maladapted.



sensitive management



Cognition as the Sensitive Management of Behaviour



objections anticipated



objections

This is not a theory of cognition.

Right. It's a conceptual explication.

objections

Isn't this really liberal?

No. It's only potentially liberal.

It's easy to constrain the target systems to animals by stipulation.

objections

There's no mention of representation here.

What is a representation, really?

Anti-representationalism.

Representations can be components.

Where's the information-processing?

Information-processing is a technical term.

There's no non-derived content here.

Right.

objectives

- Articulate the distinction between object-based and judgment-based approaches to conceptual explication.
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Thank you



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