

“Artilects” and the Mechanisms of Cognition

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Are Humans Rational?
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“Are Humans Rational, John Pollock?”

- “... human being are for the most part rational.”
- “... we have procedural knowledge for how to [reason].”
- “These rules describe how the system ‘normally’ functions, but it is also possible for the system to behave abnormally.”
- Pollock — “Cognitive Carpentry” (1995) (CC)

Artilects & Generally-Intelligent Agents

- Artilect: Artificial Intellect
 - Coined by deGaris — “What if AI succeeds?” (1989)
 - Pollock uses the term in CC
- Generally Intelligent Agent (GIA)
 - Coined by Pollock (2008)
- Both refer to an agent with “human-level” intelligence
- “My aim is to construct a sufficiently precise theory of rationality that it can be used to provide the basis for constructing an artilect.” (CC)

Stable Structures

Artilects

Humans

Most (many? some?) animals

Have mental models of the world

Likes and dislikes

Cognitive Agent

Single-Celled Organisms

Viruses

Plants

Simply React

Incapable of Learning

Non-Cognitive Agent

Most Living Things

Interact w/ Environment

in some way

Active Stability

Rocks

Hard to Destroy

Passive Stability

Mechanisms of Cognition

- Reasoning
 - Often too slow
- Q & I Modules (“quick and inflexible”)
- Emotion?
 - (Some) emotions can serve as Q & I Modules
 - Fear
 - Embarrassment

For More...

- <https://johnpollock.us/ftp/publications.html>
 - Online archive of Pollock's work.
 - For a quick intro to OSCAR, read <https://johnpollock.us/ftp/PAPERS/GIA-AAAI.pdf>
- <https://rair.cogsci.rpi.edu/projects/automated-reasoners/oscar/>
 - Software to run OSCAR