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Deep Learning and Beyond

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swiss group for artificial intelligence and cognitive science

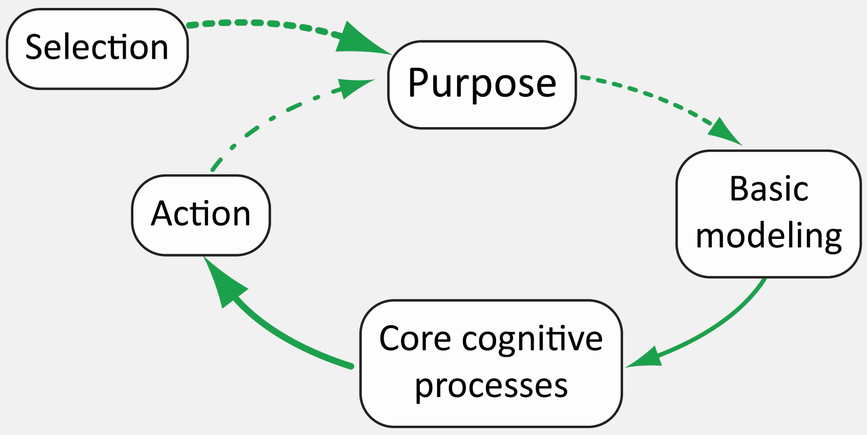
Cognition Squeezed Between Nature and Values

Cognition **(via modeling)**

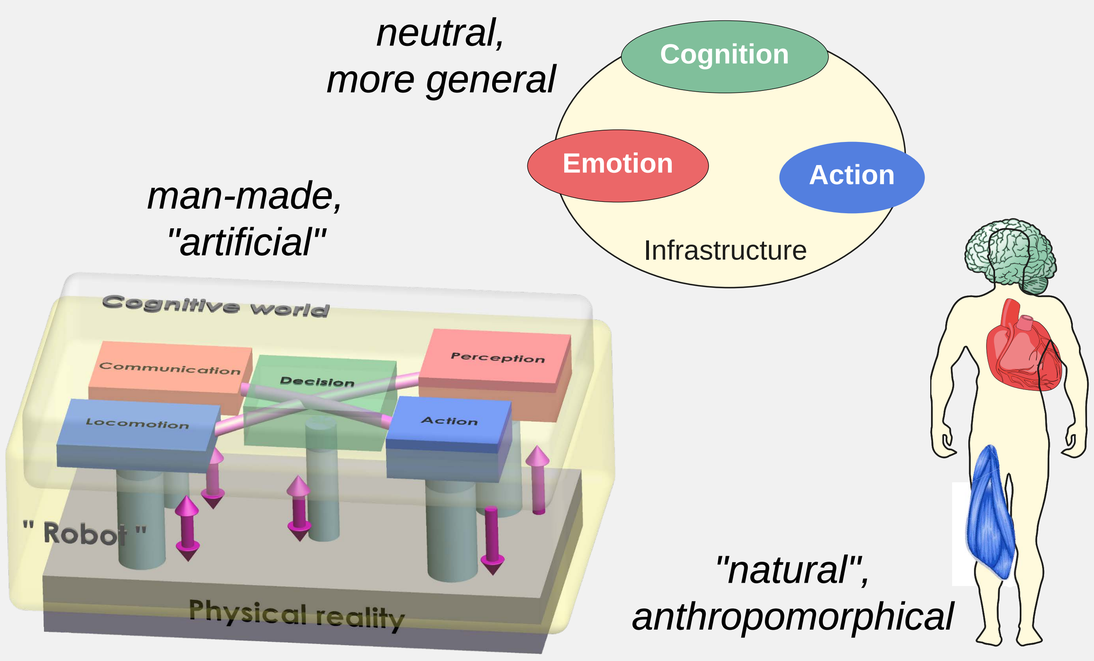
Action for survival and changing the world	Cognition (per se) for planning and steering action	Emotion for synchronization with reality* for launching action**
"Muscle", physical engine	"Brain", cognitive engine	"Heart", Indicator of values at stake (threats and opportunities)
physical world, Laws of nature; true	cognitive world , "non-physical", Laws of logic; right	mixed mode, ("meta-logic") emotional domain; Laws of value ; good

* immersed part of iceberg (unconscious)
** visible part of iceberg; re. etymology of emotion

For cognition, it all starts from value-based selection of appropriate goal, in synchrony with nature (i.e. from emotion)



Examples of smart cognitive systems, operational in real world



Cognition in the context of action (re. nature) and emotion (re. values) – Some typical aspects for humans and societies, agents and groups

Action	Cognition	Emotion
support operations, logistics	follows & optimizes rules, guidelines, standards; computes; evolution; syntax	changes rules and paradigms; irrationality, deception; changes price, gives and takes; revolution; peace or war
Motor and brake operation	cruise control (re. gear, throttle targets)	tempomat adjustment and braking control; starts-stops
force, energy; fight or flee; control power,	notions of truth, c-goodness, imagination, if-worlds, modeling, prediction	internal monitoring, communication, wisdom, consciousness, empathy, solidarity, dignity, mercy
shepherd's dog, horse	shepherd, shepherdess	lamb, flock of sheep, Romulus's & Remus's lupa
executive power (Cesar, MT)	Legislative power, science	People initiatives, fashion, strikes, mobs
lion, bear, bull	think tank, re. Martians in "Mars attacks"	flock of birds; "federative" imperial dragon (camel head, etc.)
technology, engineering	philosophy, "analytic" philosophy	religion, "continental" philosophy
work, operation	rational thinking, meditation, function, administration	strategy, art (value-laden, symbolic communication), dreams and nightmares, relaxation, mindfulness
Mars; permanence (constancy, determination, time)	mixed mode	Venus; change (synchronicity with circumstances and instant values, speed)
soldier, police, fire squad, farmer, entrepreneur, sports - individual	school, research institute, science, admin., games of strategy (logic), chess	ambassador, mediator, court system, social services, insurance, banking, sports-team

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