


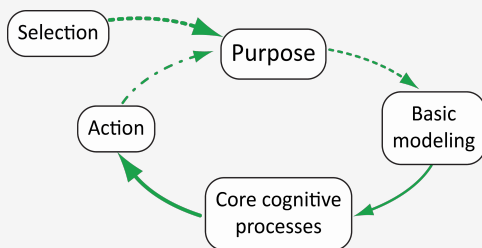


Cognition Squeezed Between Nature and Values

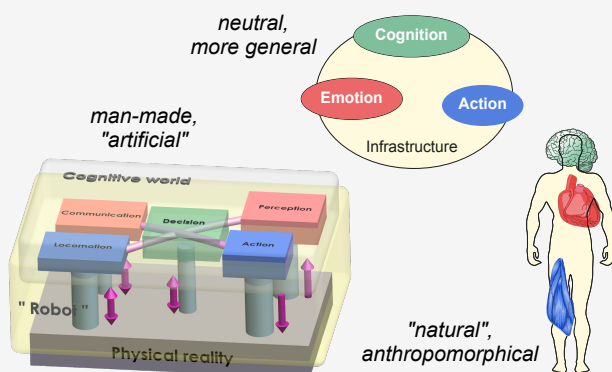
C o g n i t i o n (via modeling)		
Action for survival and changing the world	Cognition (per se) for planning and steering action	Emotion for synchronization with reality* for launching action**
"Muscle", physical engine	"Brain", cognitive engine	"Heart", Indicator of values at stake (threats and opportunities)
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

References.:

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3. Cours RAC, HEIG-VD, Yverdon-les-Bains, Juin 2016
4. Robotics and Automated Systems-Elsevier, nov. 2016, <http://dx.doi.org/10.1016/j.robot.2016.08.008>