The Emerging World Wide Mind

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Webstructor project
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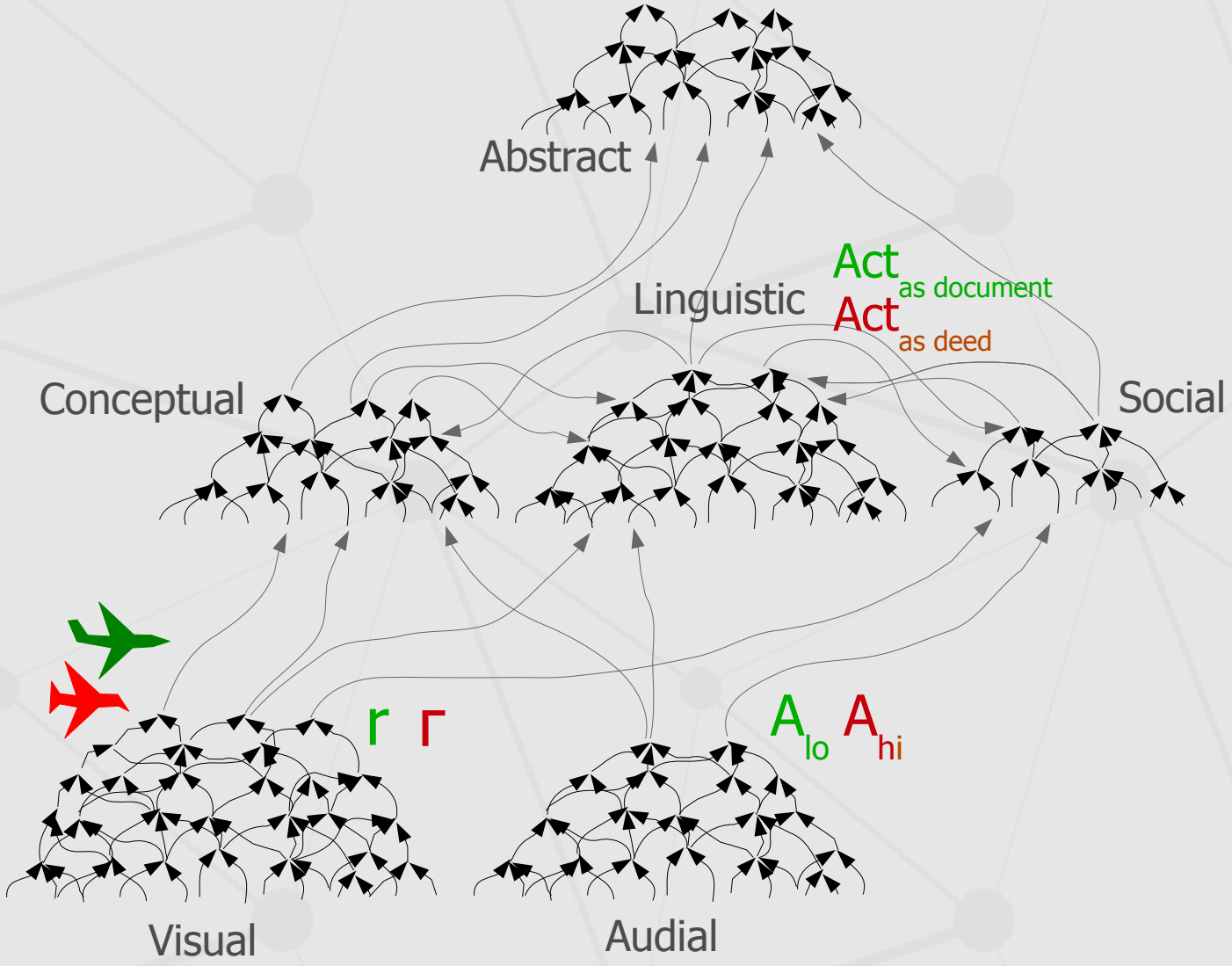
Hierarchy of recognition algorithms



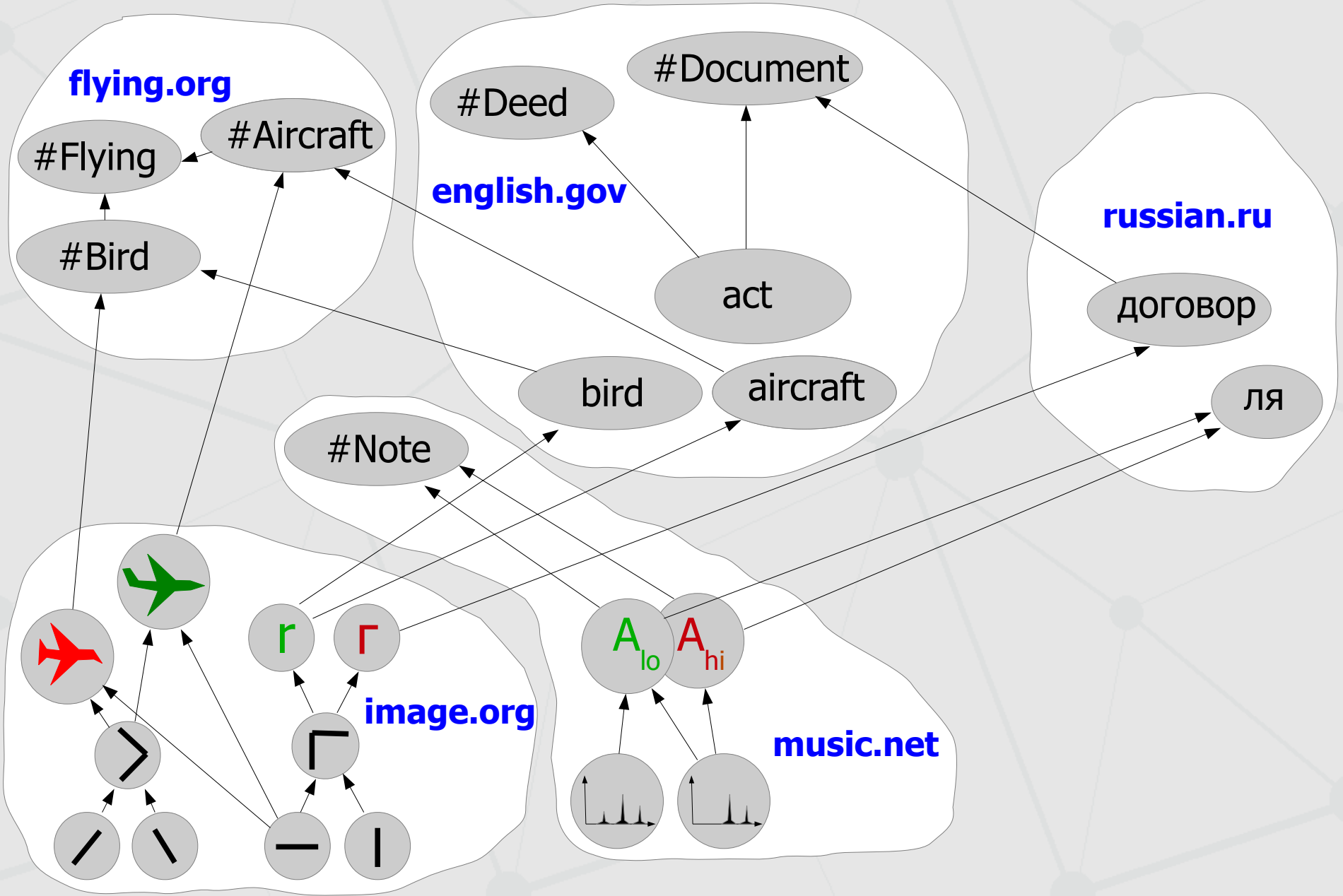
Common need for:

1) General disambiguation technique

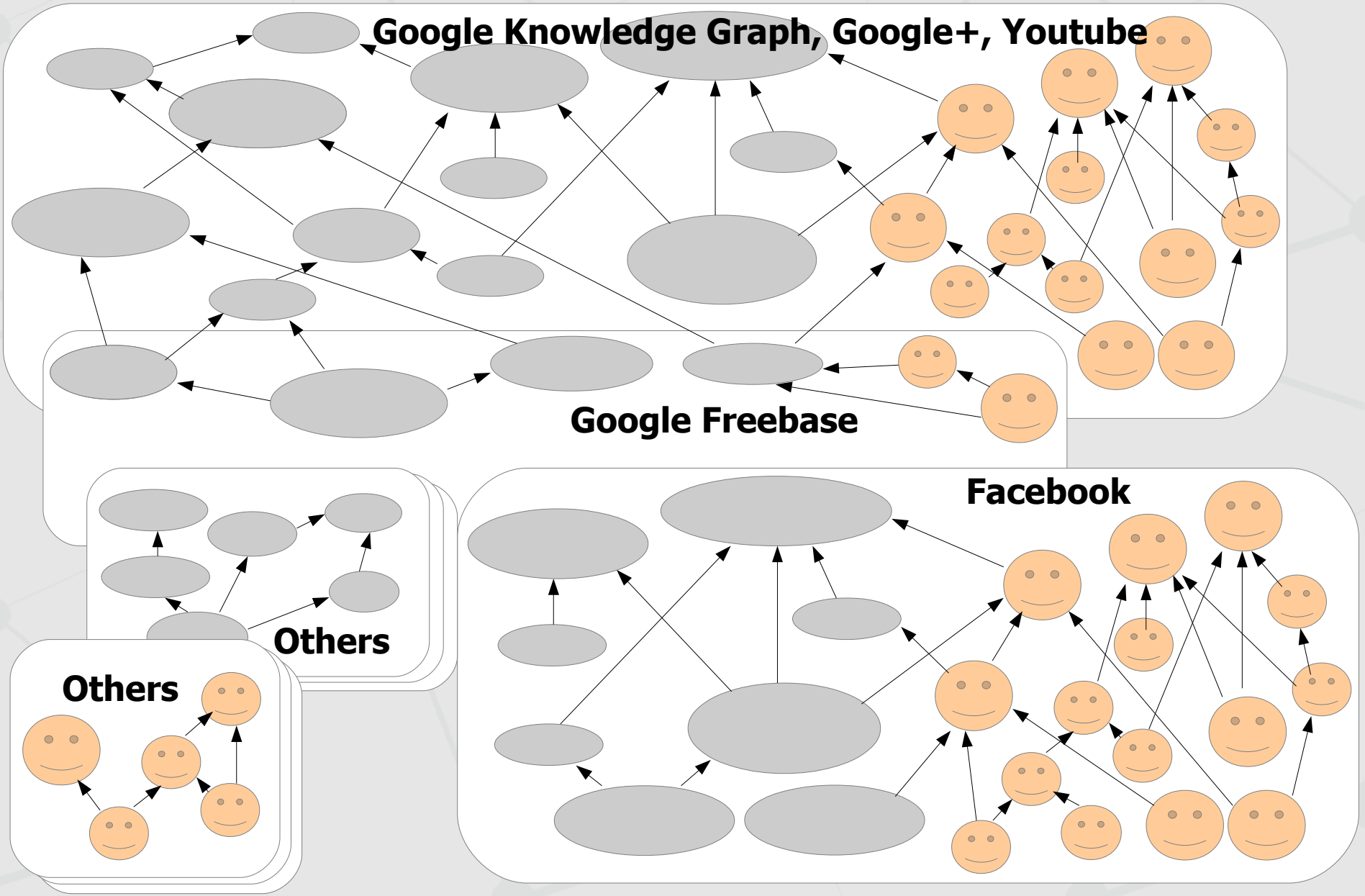
2) Universal recognition schemata

3) Shared knowledge base

Semantic nets and web – as planned



Semantic nets and web - today



Global computational intelligence
Knowledge environments

Information space	Amount of information
Google, Google+ and Knowledge Graph (proprietary, partially public as Freebase)	500 million users, 700 million concepts, up to 20 billion facts and connections
Facebook Social Graph (proprietary)	900 million users, “hundreds of billions of entities, trillions of attributes and relationships”
Cyc Knowledge Base (partially public, “upper ontology” available in LISP or RDF/OWL)	2 million assertions
Wikidata (public, custom format expected to be exportable as RDF/OWL)	1 million statements
English lexicon	1 million words (including scientific terms)
World population	7 billion people 2.5 billion active internet users 1 billion smartphone users
Active social network users	1.1 billion – China's 7 social networks 0.7 billion – Facebook 0.3-0.6 billion – Google+ with YouTube 0.3 billion – Twitter

Numbers semi-speculative, complied from random internet sources, March 2013.

Global computational intelligence
Computational resources

Resource	Processors	RAM	Storage
Cray Titan	**300 thousand cores** (19000 nodes of 16 cores)	**710 terabytes**	**10 petabytes**
Google Cloud	1 million servers (4 cores, 16 gigabytes memory, 10 terabytes storage) **4 million cores**	**16 petabytes**	**10 exabytes**
Desktop computers in personal use	1 billion personal computers (average: 3 cores, 3 gigabytes memory, 100 gigabytes storage) **3 billion cores**	**3 exabytes**	**100 exabytes**
Smartphones in personal use	**1 billion smartphones** (average: 5 gigabytes memory)	**5 exabytes**	

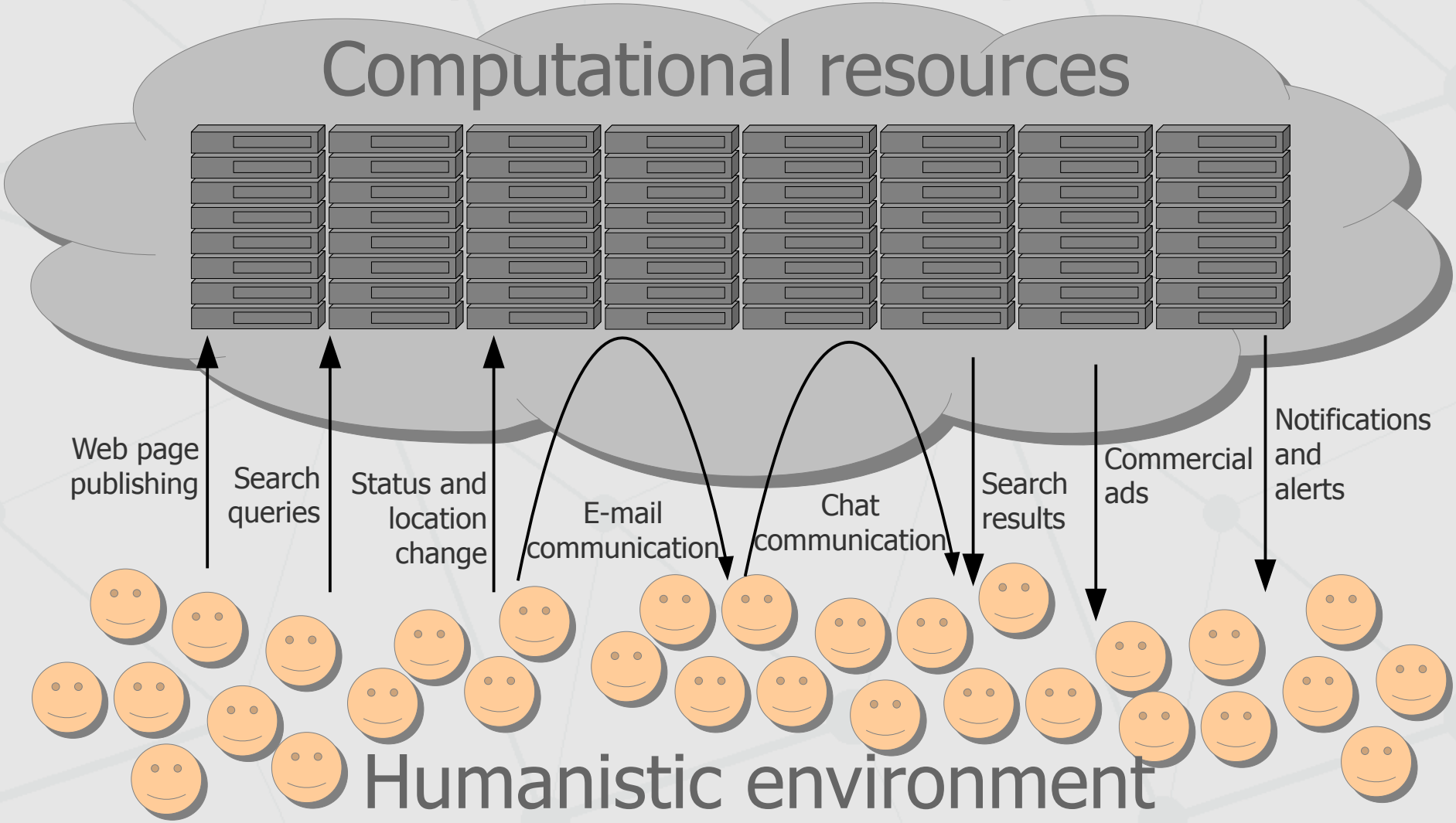
Numbers semi-speculative, complied from random internet sources, March 2013.
Corporate, government and office computers in use are not considered.

Global computational intelligence
Who does set the rules?

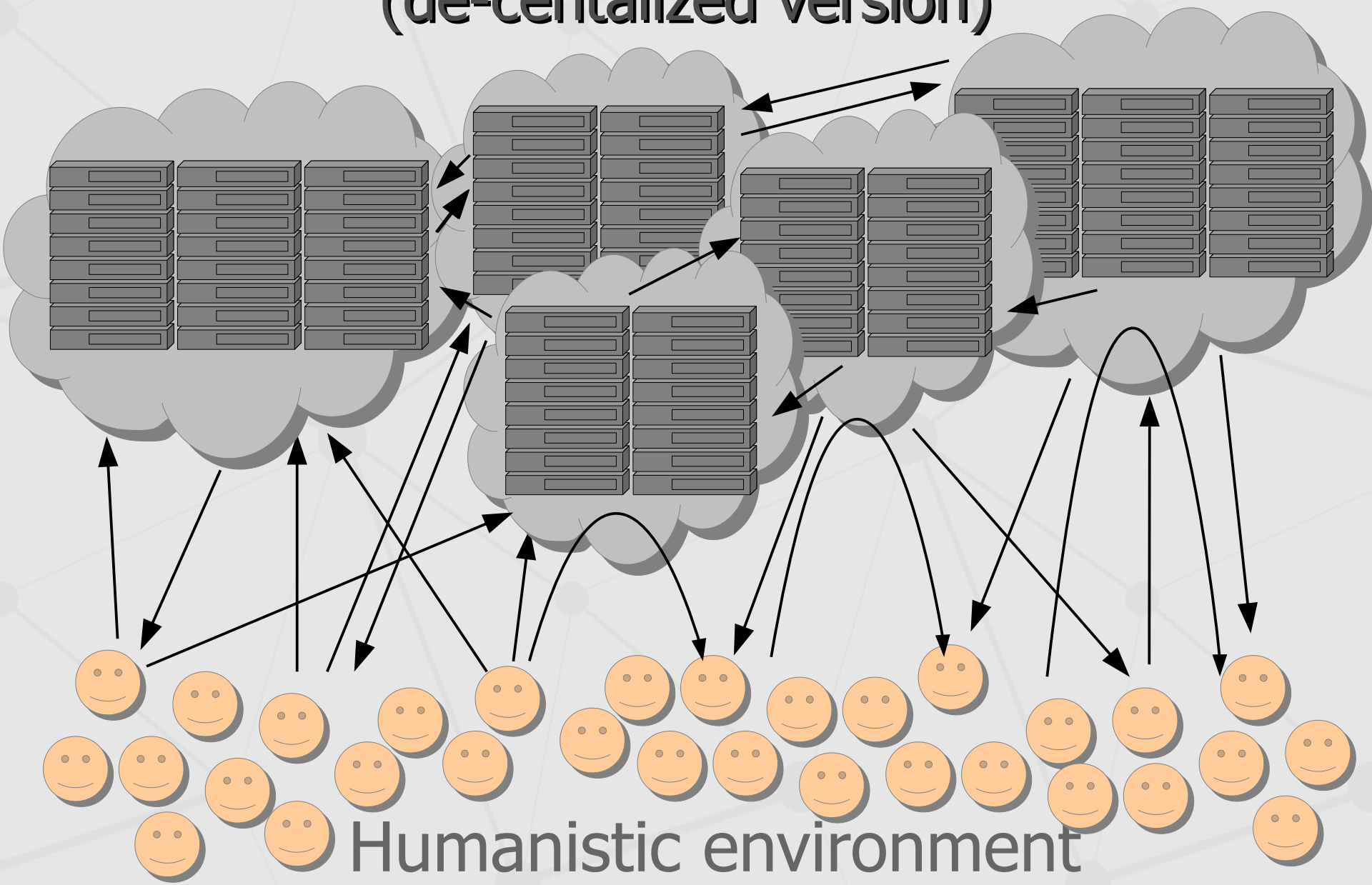
	Desktop OS	Mobile OS (smartphones)	Any OS	Semantic & Social Nets	Search Engines
Microsoft (Windows, Bing)	91%	-	45%	-	5%
Apple (OS X, iOS)	7%	55%	31%	-	-
Google (Android, Google+, YouTube, Search, Knowledge Graph)	-	26%	13%	26-48%	83%
Yahoo	-	-	-	-	8%
Facebook (Social Graph & Graph Search)	-	-	-	52% (???)	-

Numbers from NETMARKETSHARE and GlobalWebIndex sources, March 2013.
Any OS measure computed given nearly equal numbers (1 billion) of personal computers and smartphones.
Market shares under 5% are not considered.

Global computational intelligence as a human-computer ecosystem (centralized version)



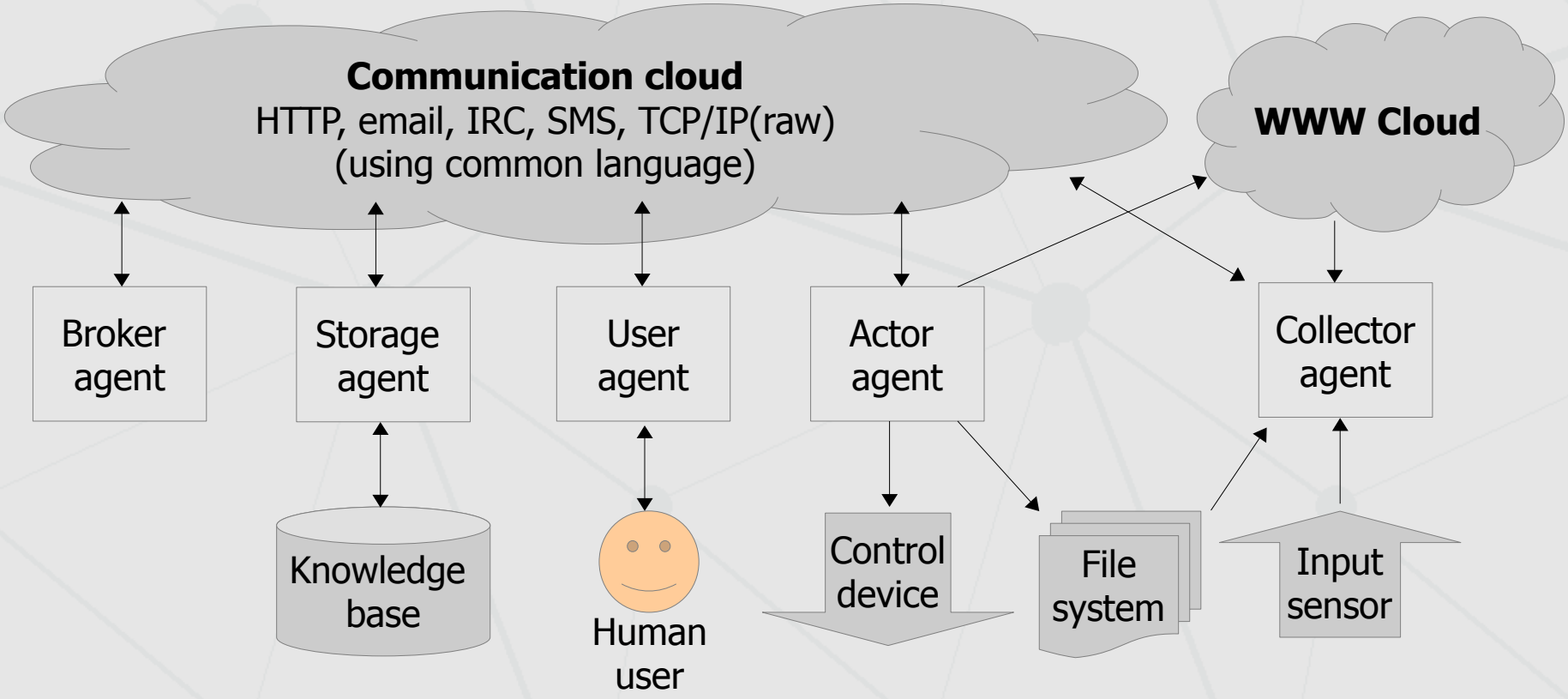
Global computational intelligence
(de-centalized version)



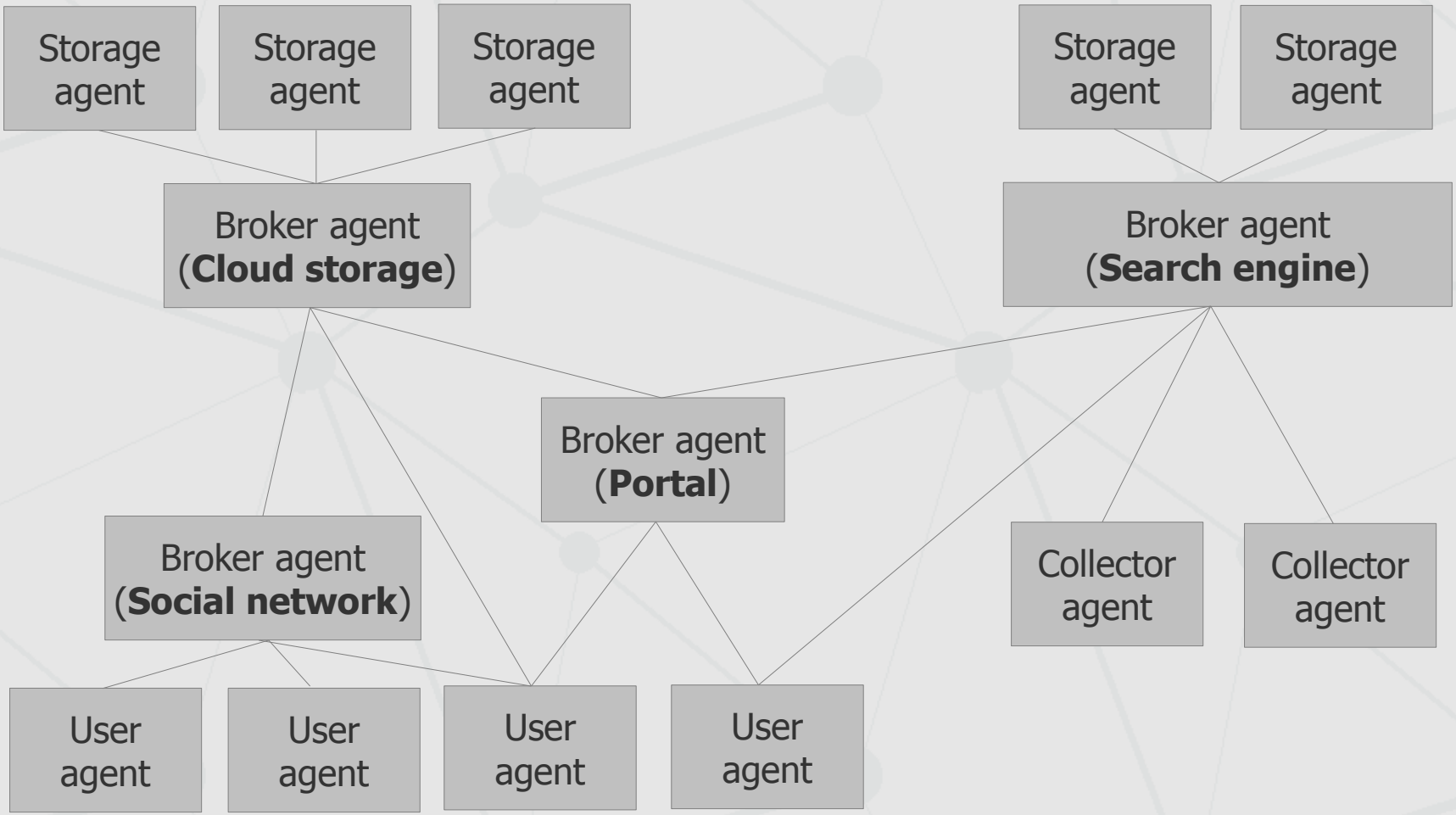
Global computational intelligence

Decentralized model

Agent specialization



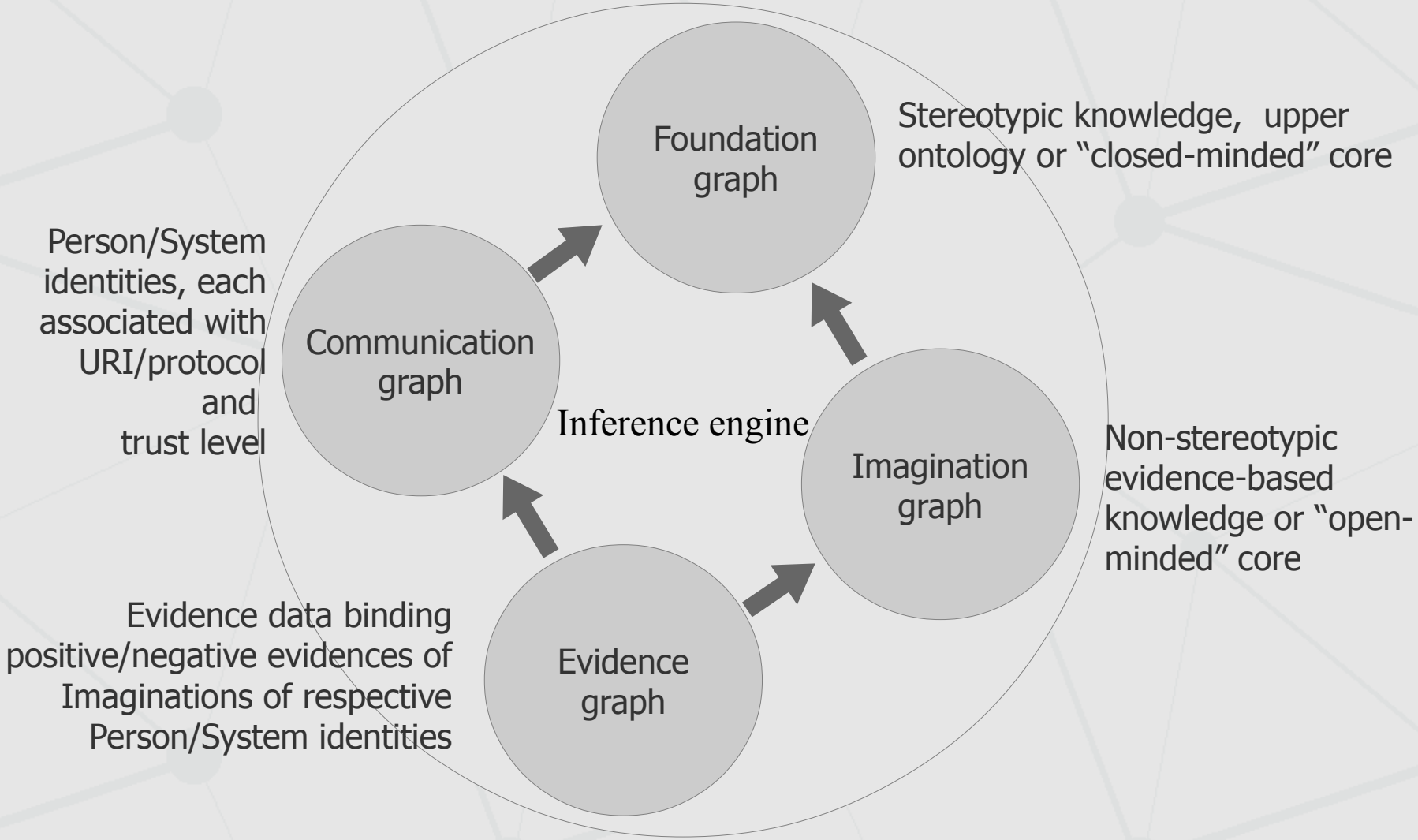
Global computational intelligence
Decentralized model
Topologies and functional clusters



Global computational intelligence

Decentralized model

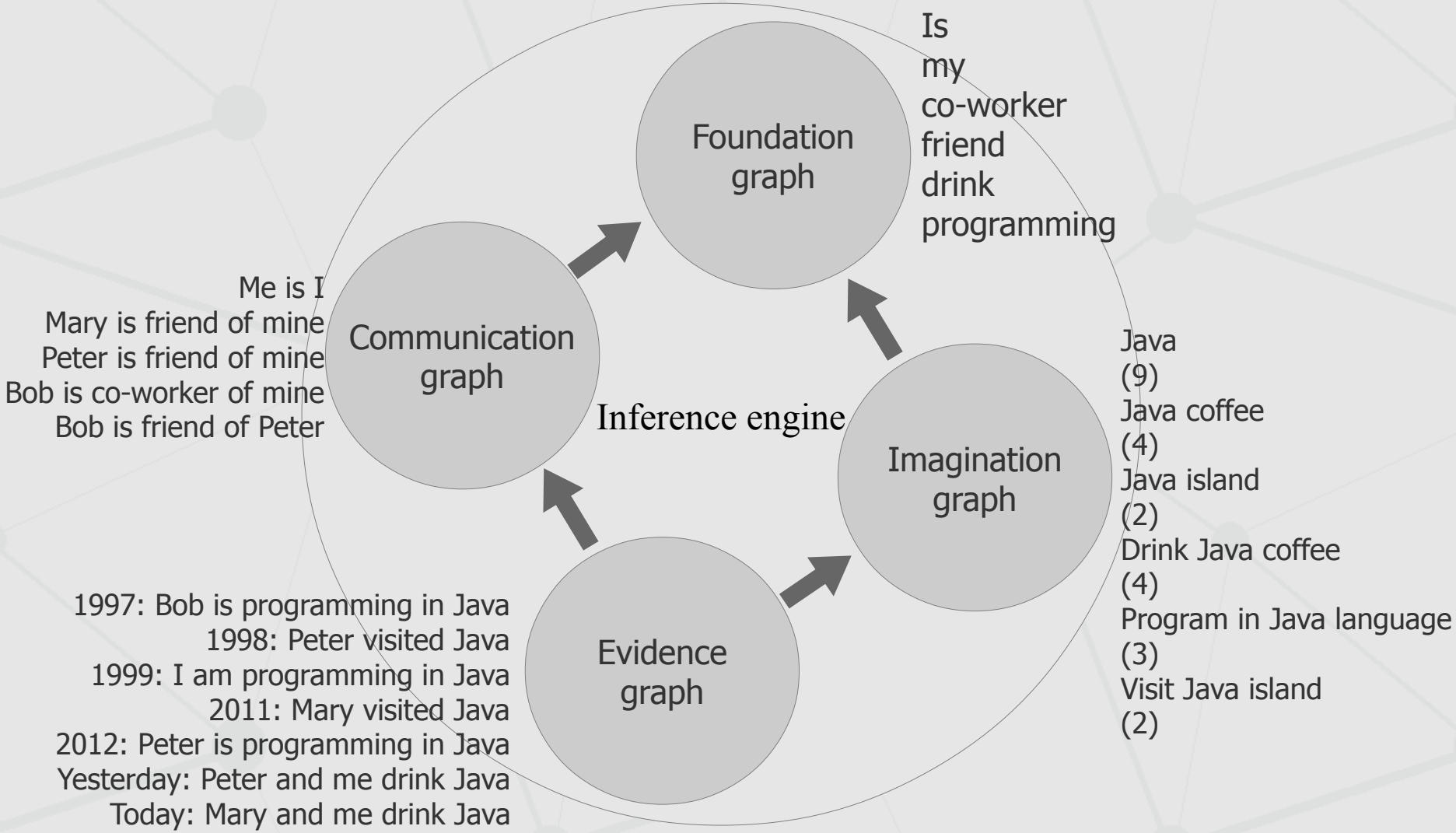
Social evidence-based data model (definition)



Distributed knowledge engineering

Decentralized model

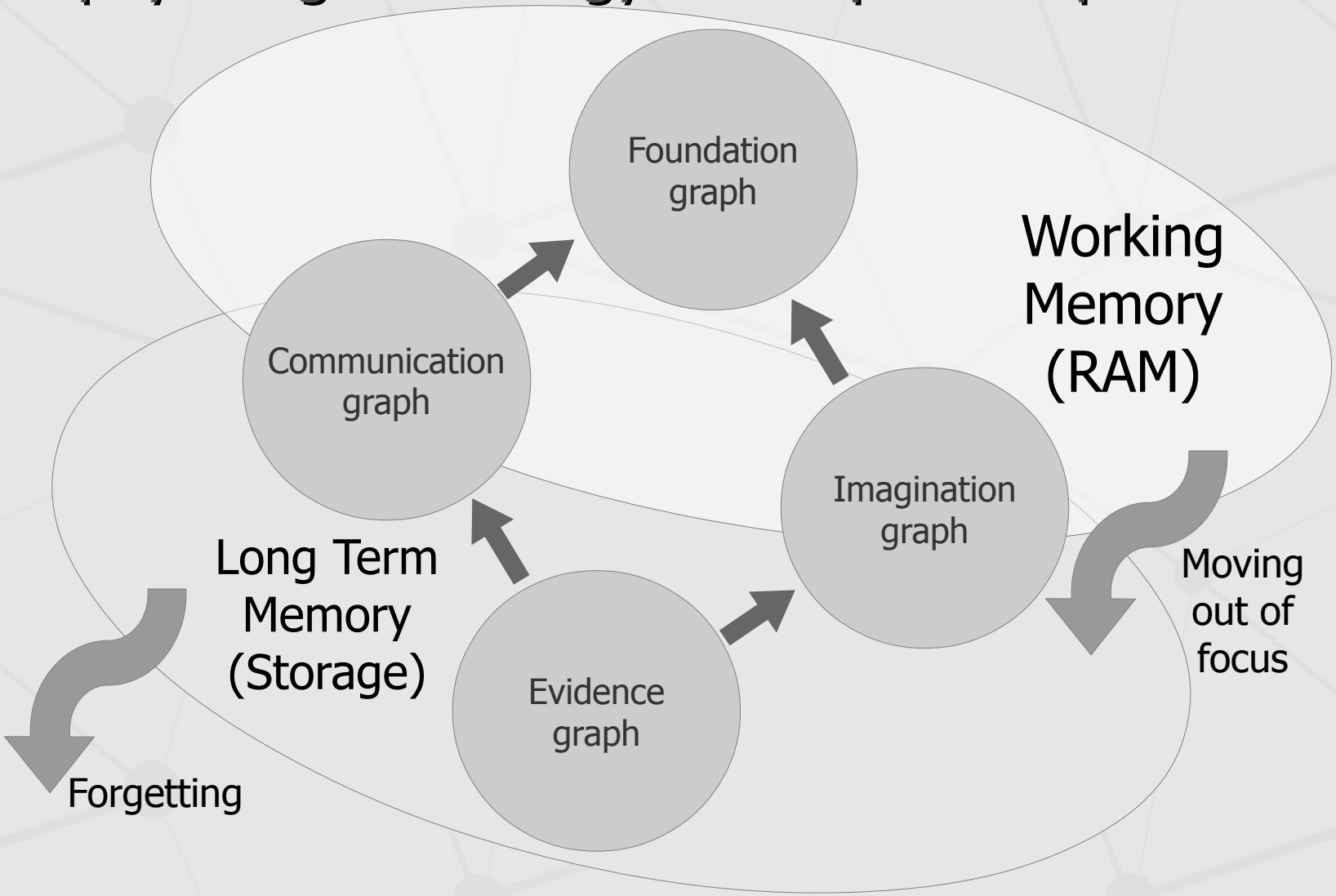
Social evidence-based data model (example)



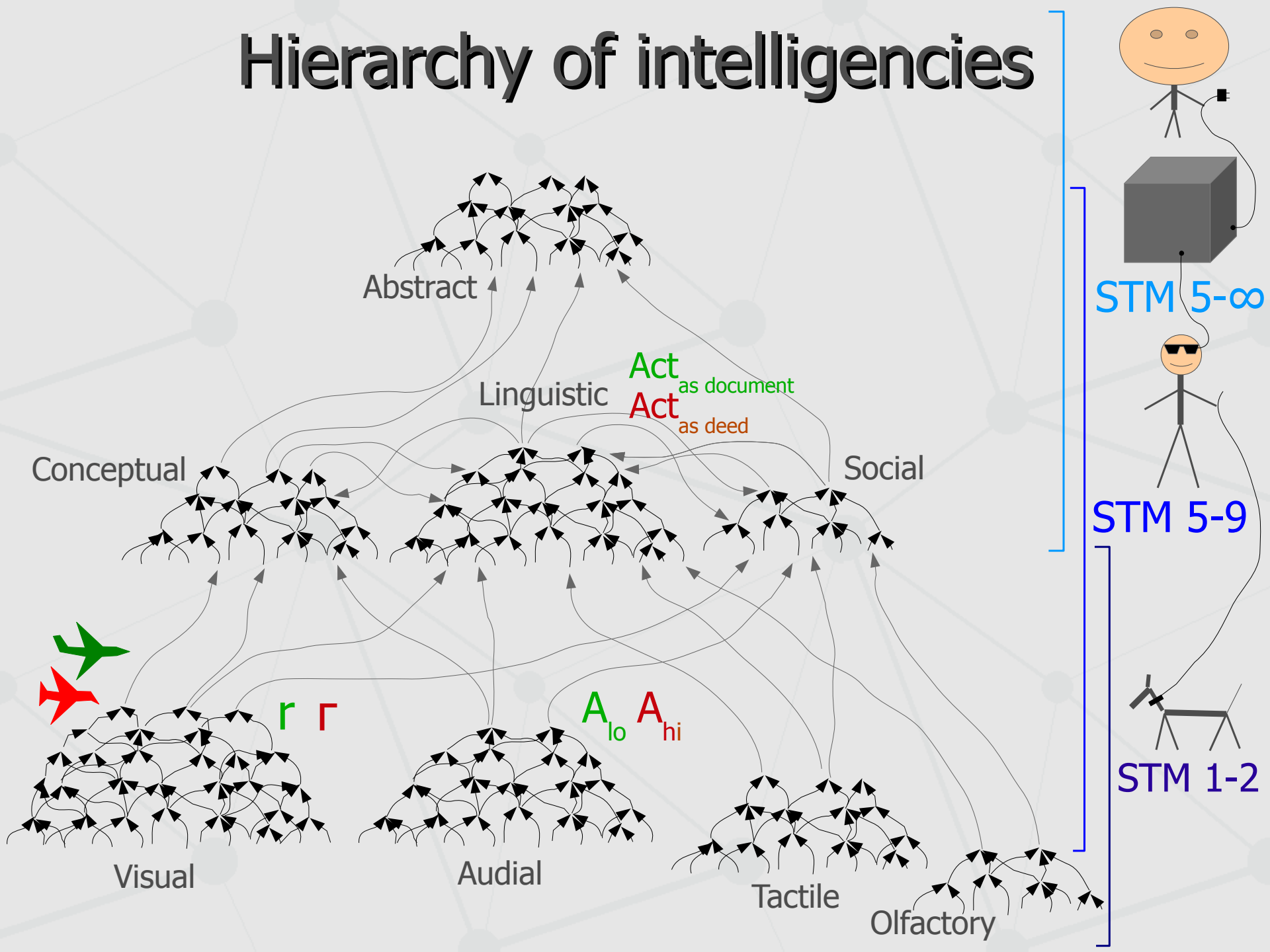
Distributed knowledge engineering

Decentralized model

Neurophysiological analogy = Computer implementation



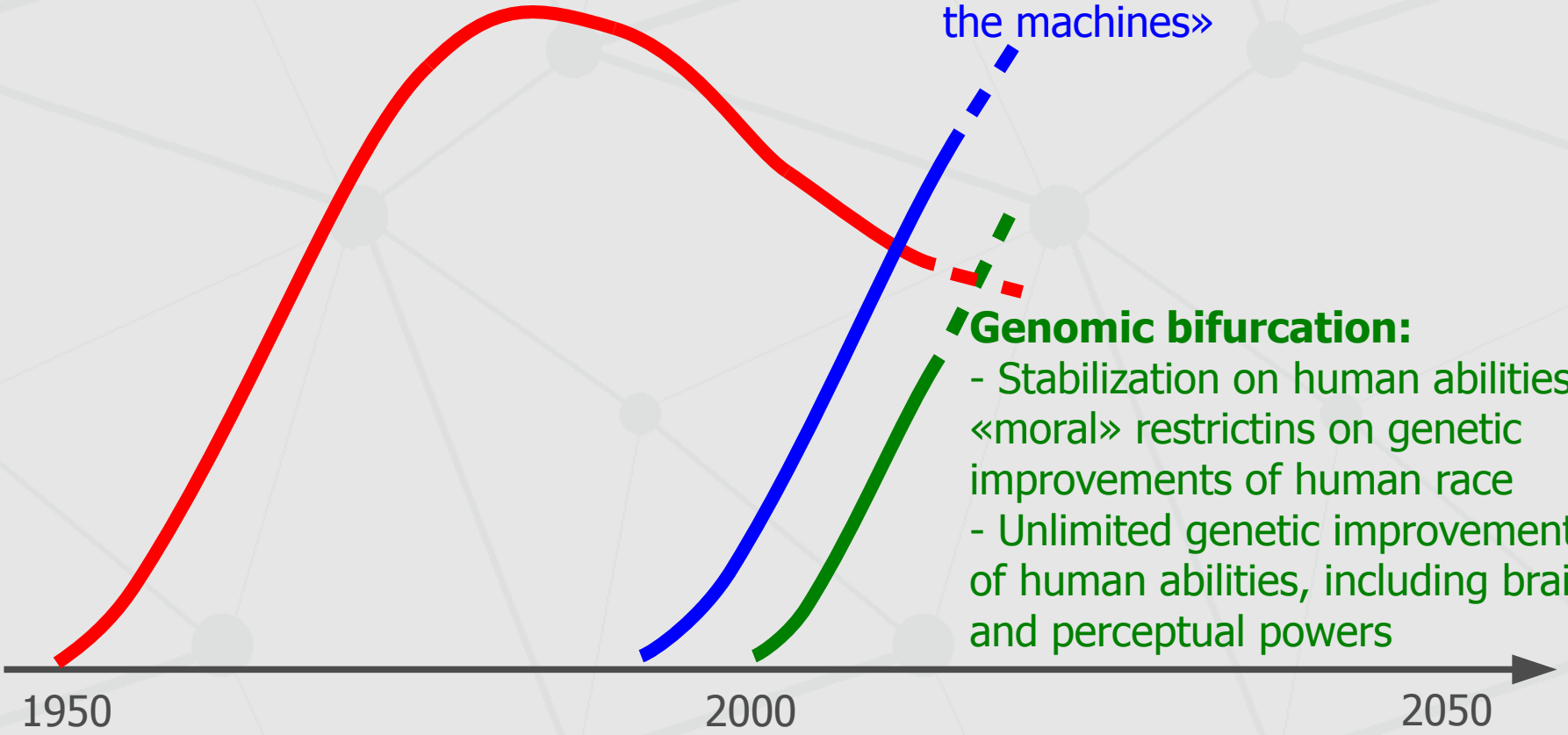
Hierarchy of intelligencies



Overlapping Technological Singularities

IT bifurcation:
- Computer intelligence overgrows humanity, lose in «race against the machines»
- Human intelligence co-existence with computers, «race with the machines»

Nuclear bifurcation:
- Humanity self-destruction with nuclear winter
- Nuclear weapons control and elimination



Genomic bifurcation:
- Stabilization on human abilities, «moral» restrictins on genetic improvements of human race
- Unlimited genetic improvements of human abilities, including brain and perceptual powers

Thank you for attention!

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Webstructor project
http://webstructor.net/