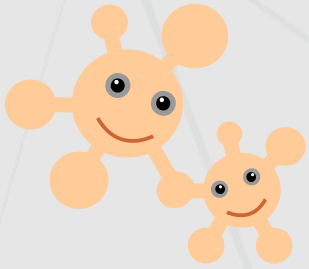
Distributed knowledge engineering and (social) evidence-based knowledge representation in multi-agent systems



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KESW-2015 Conference

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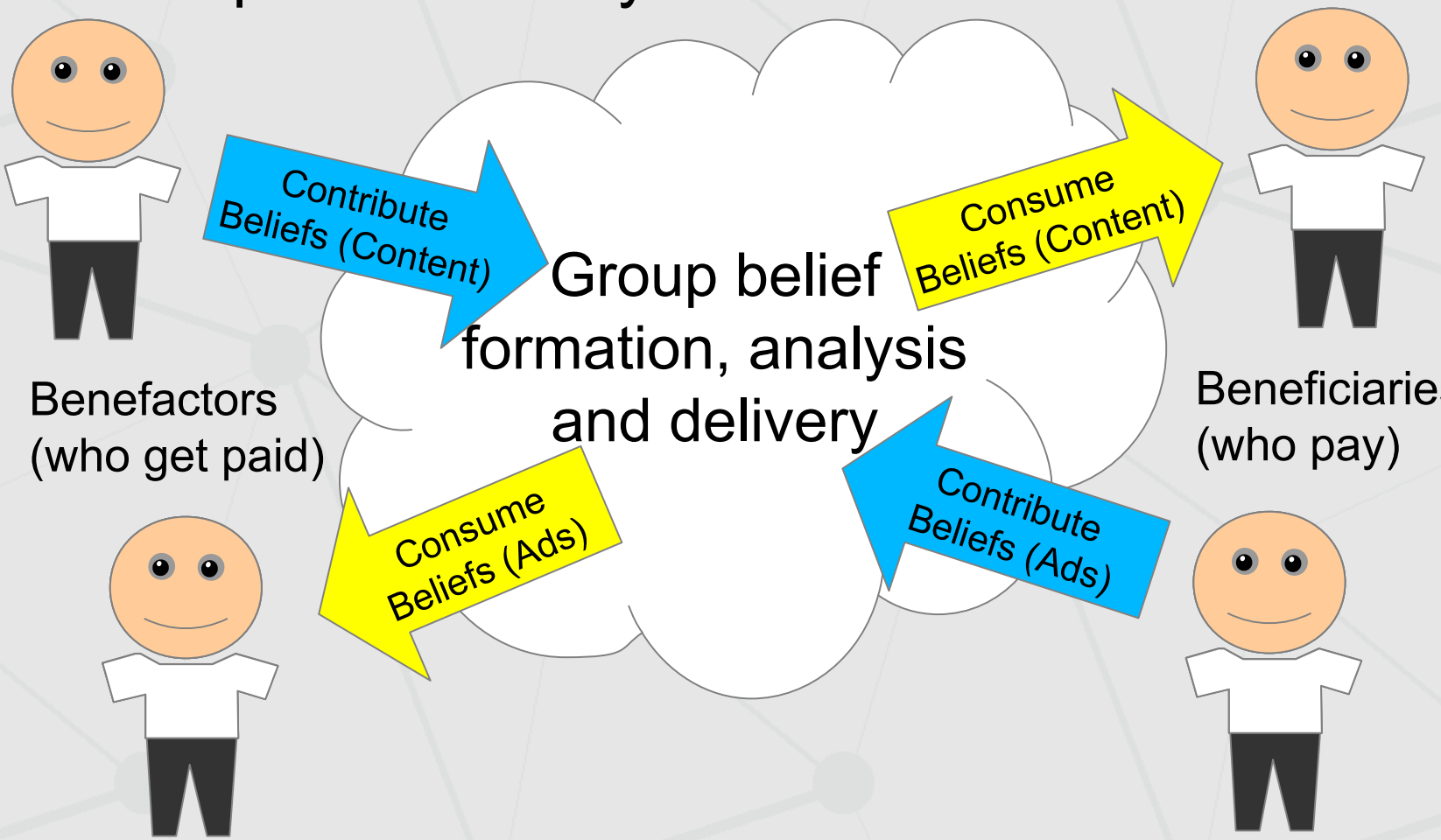
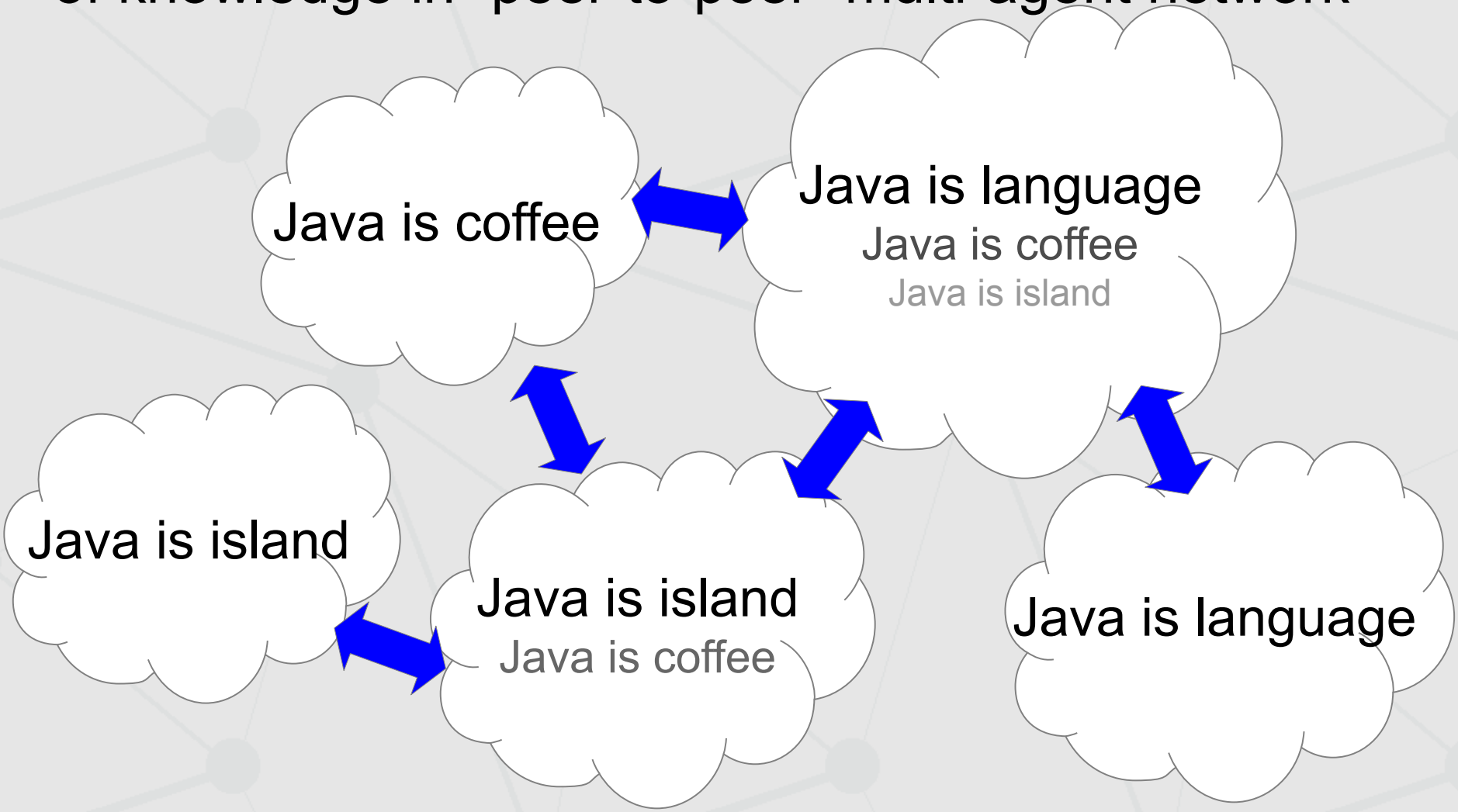
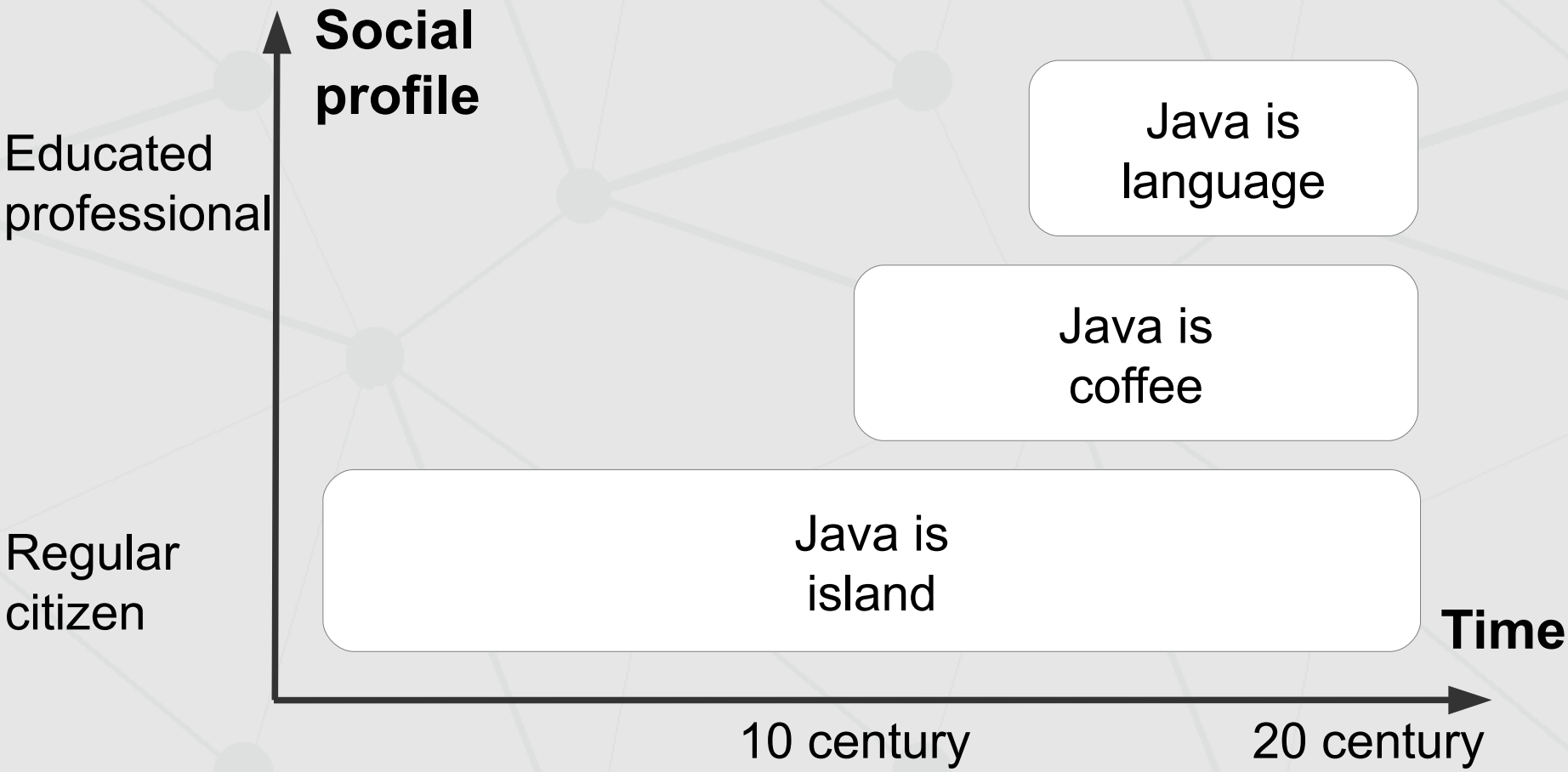
Goal: Social intelligence platform for real-time evaluation of group belief system for collaborative decision making and opinion delivery in social environments



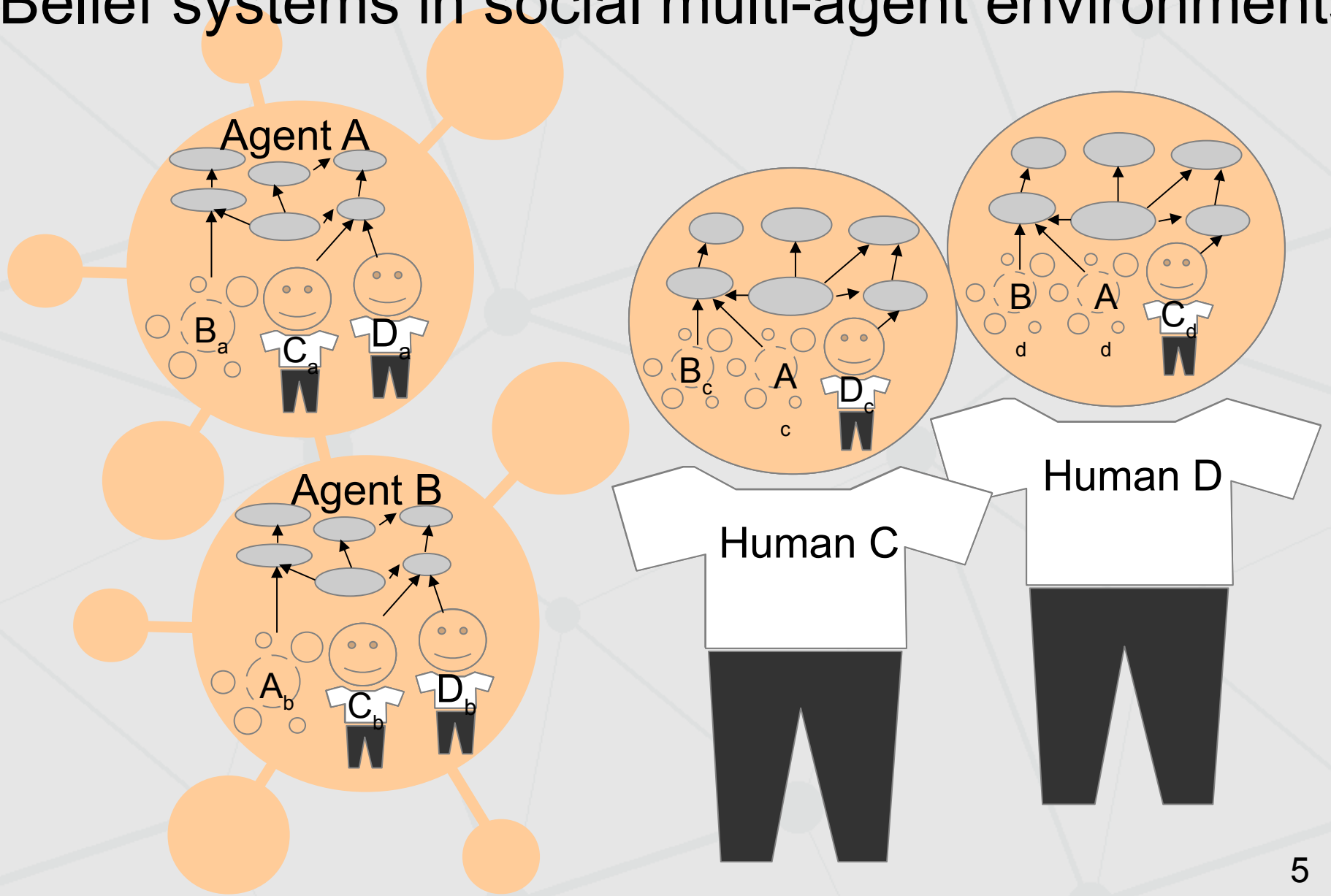
Requirement 1: Distributed (decentralized) storage of knowledge in “peer-to-peer” multi-agent network



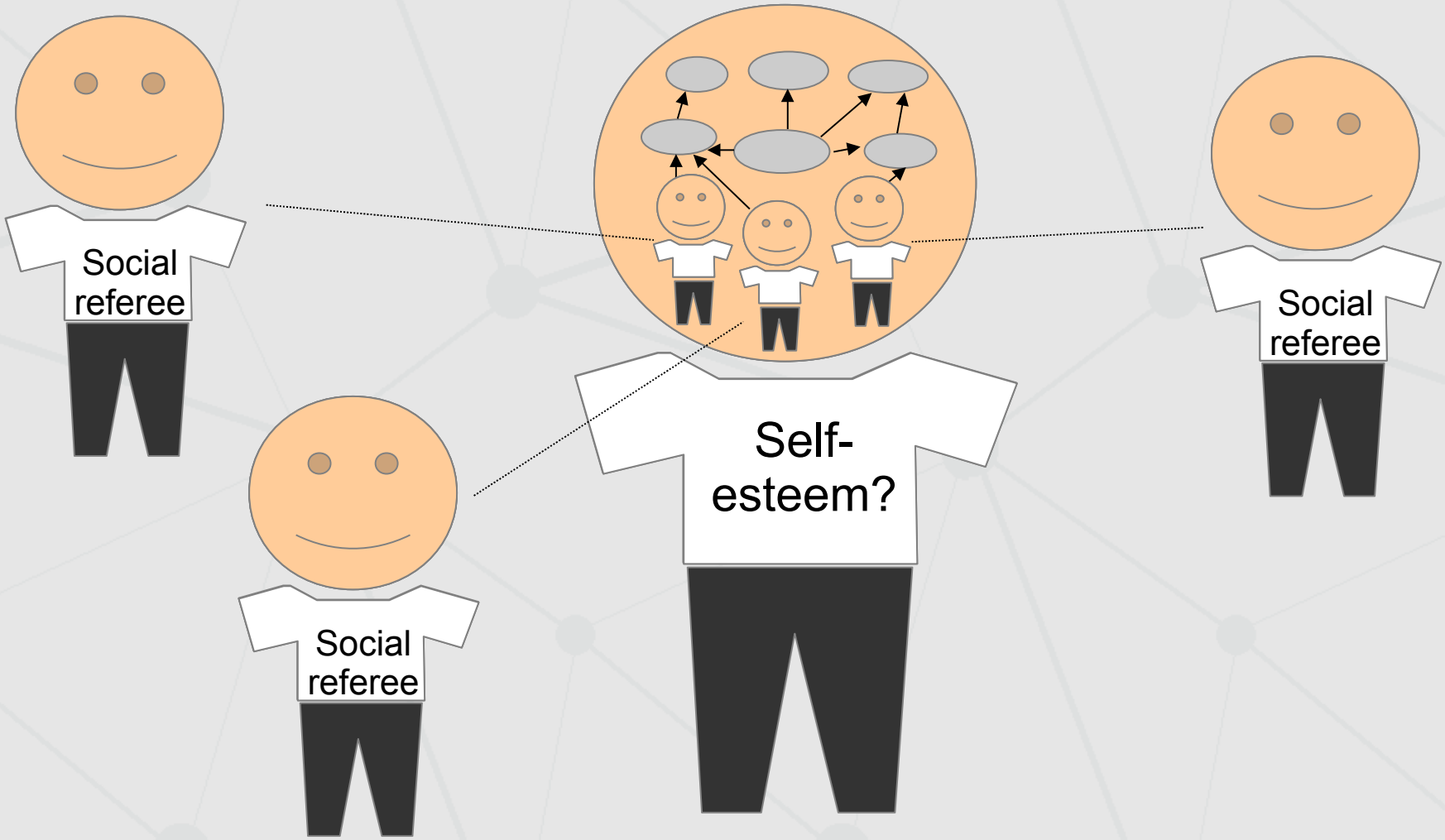
Requirement 2: Dynamic evaluation of truth value based on social profiling and temporal scoping



Belief systems in social multi-agent environments



Compassion-based artificial psyche (Webmind)



B.Goertzel, A.Kolonin, J.Pressing, C.Pennachin (2000)

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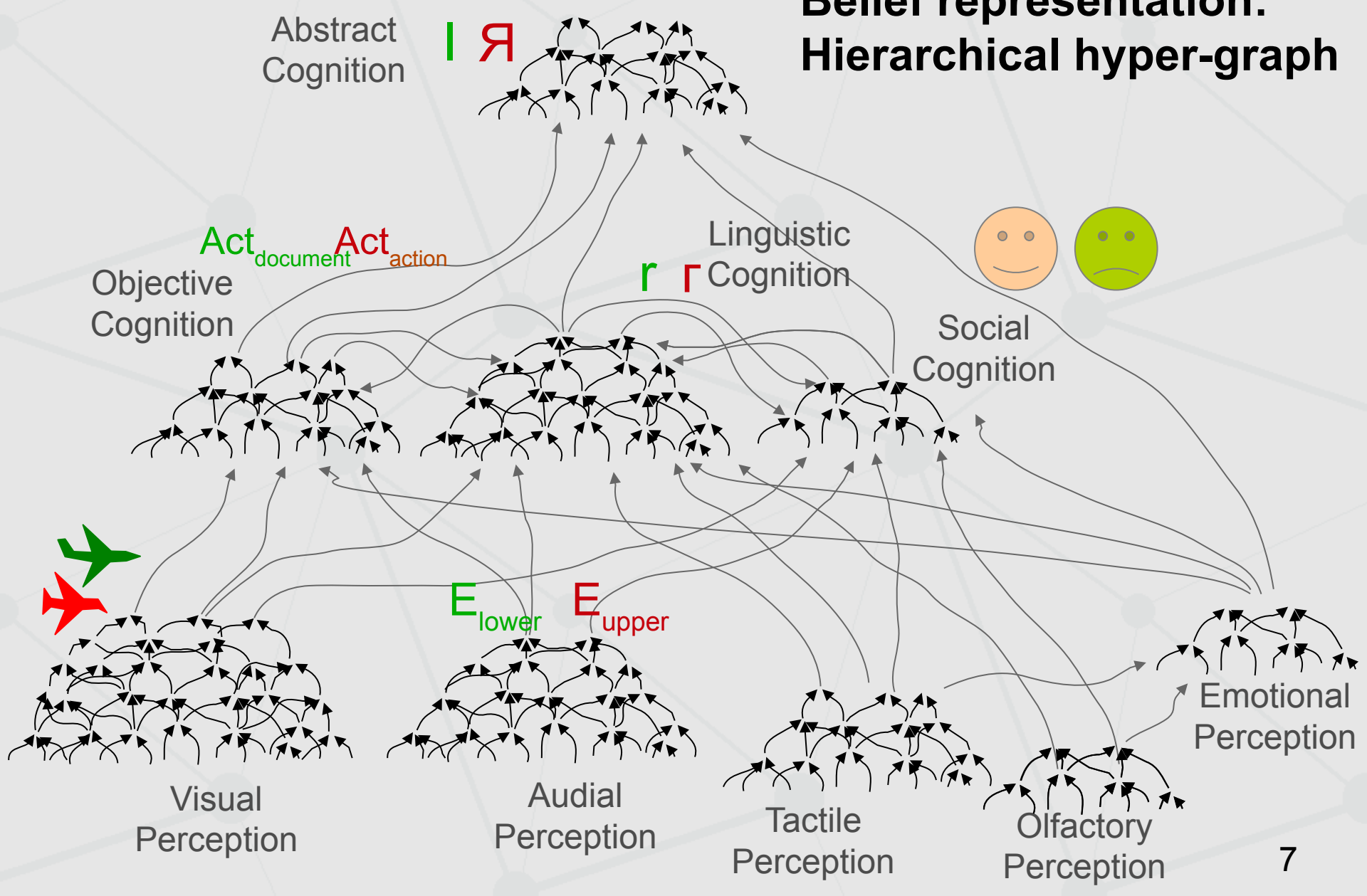
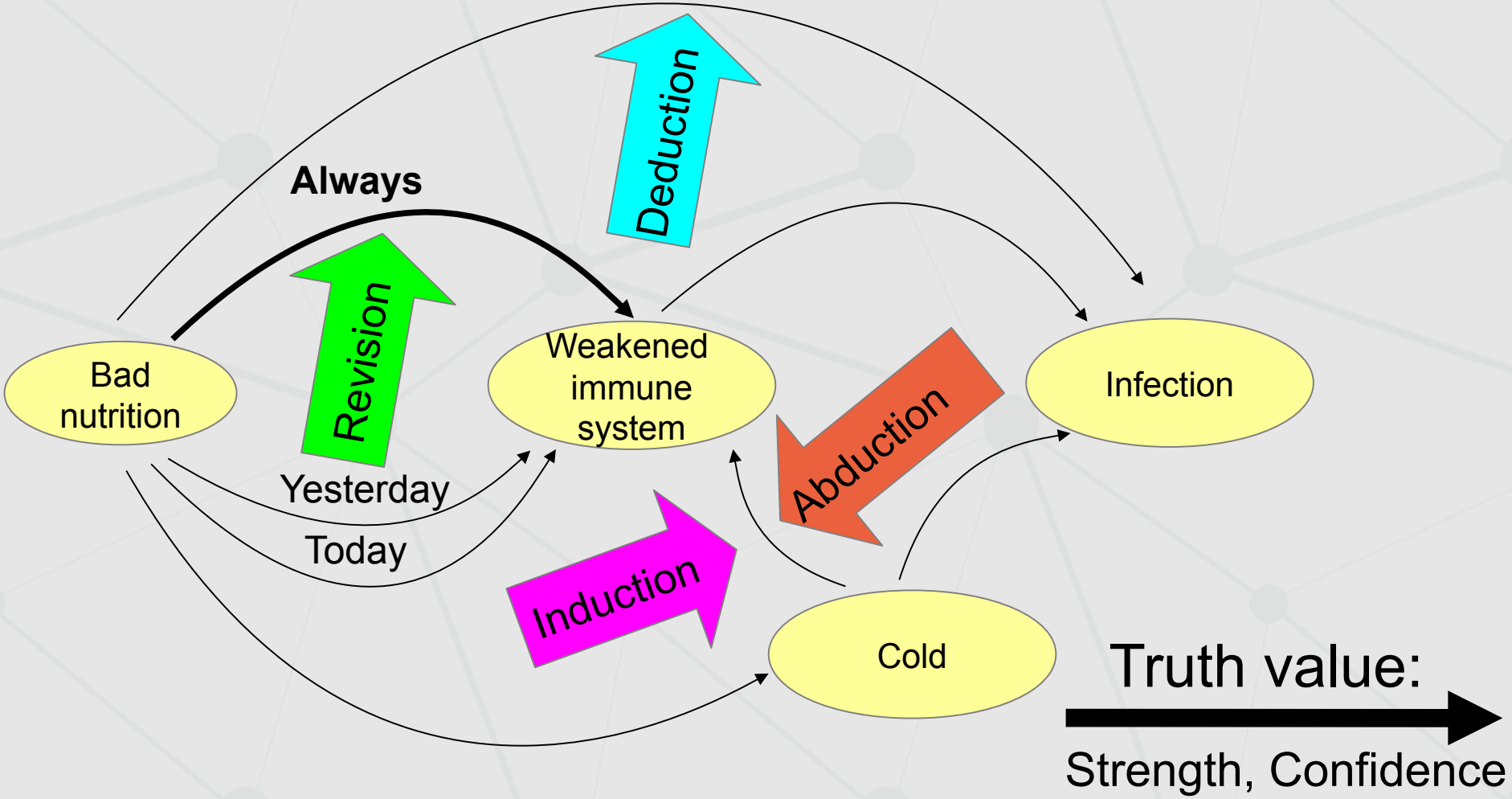
Belief representation: Hierarchical hyper-graph

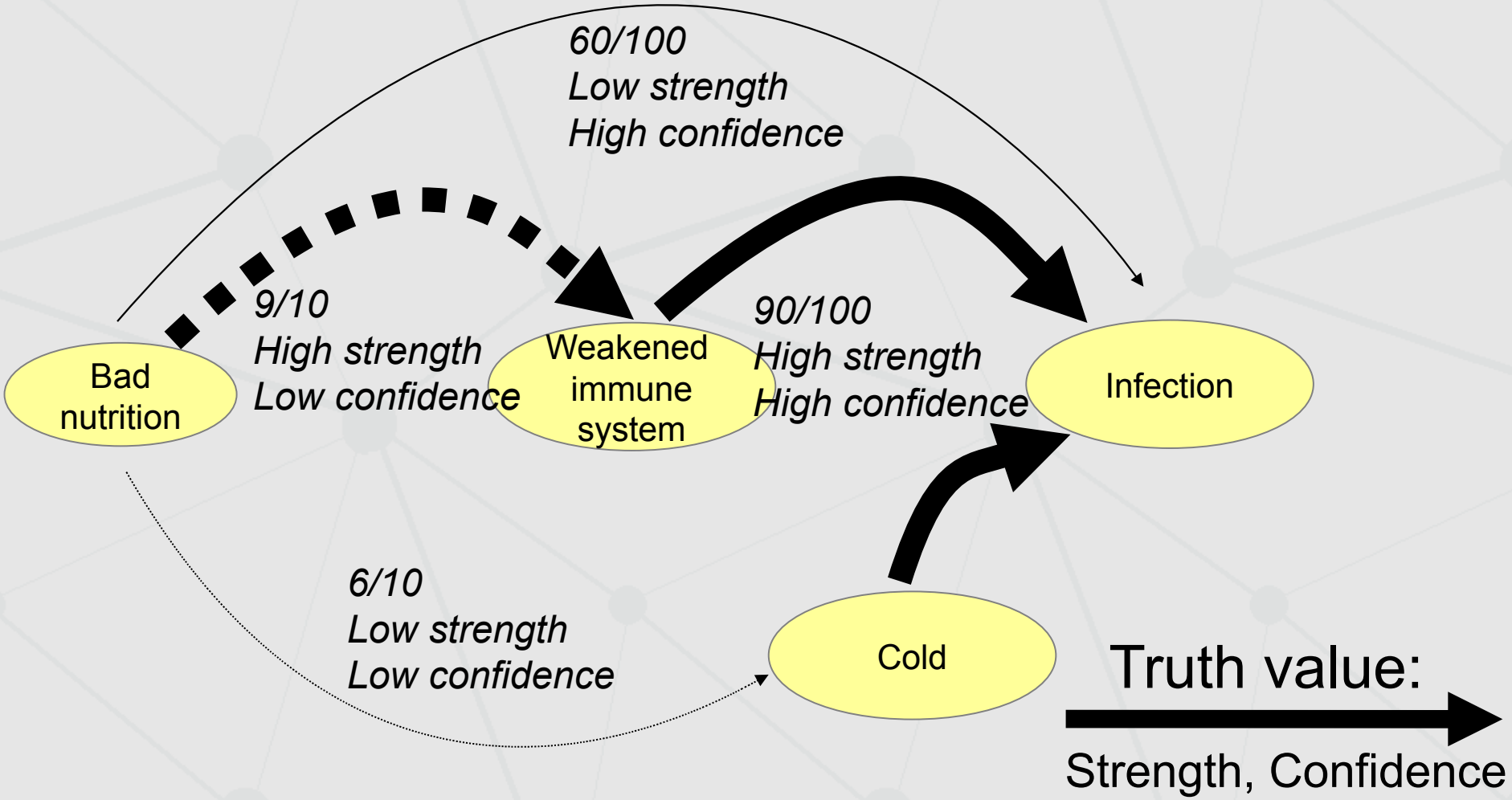


Fuzzy Logic: Non-Axiomatic Reasoning System (NARS)



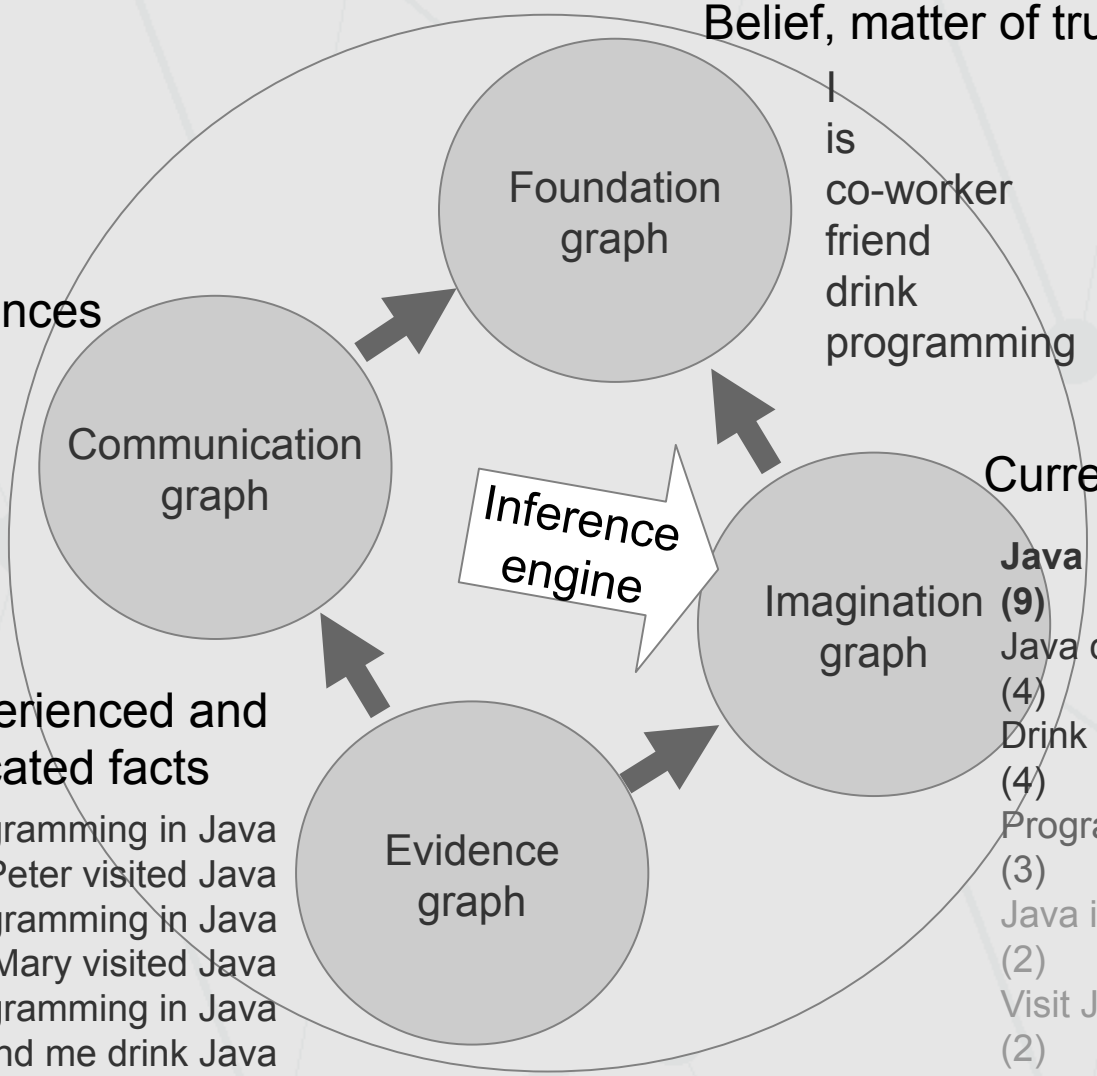
P.Wang (1993,2000,2013)

Fuzzy Logic: Separating Strength and Confidence

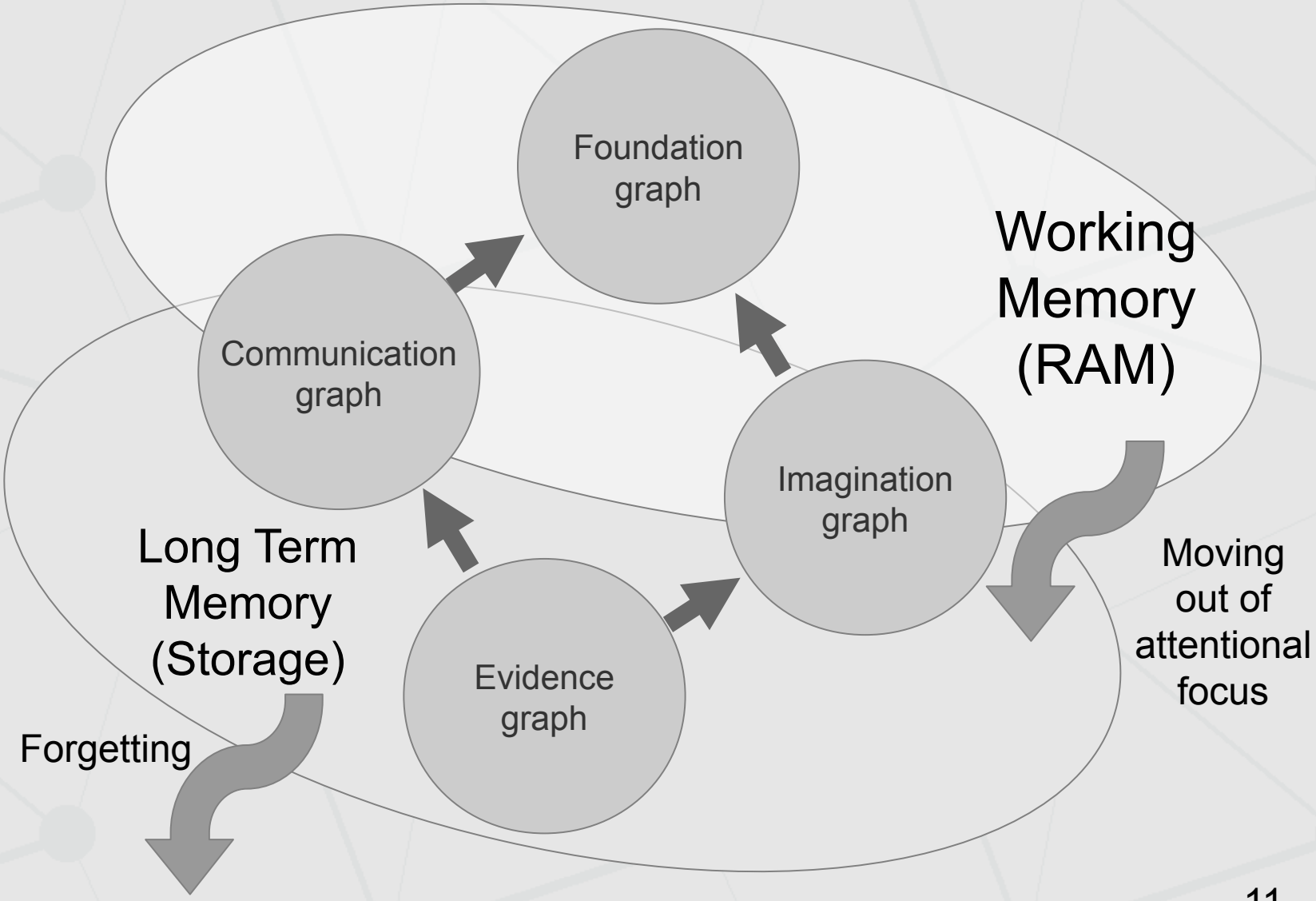


P.Wang (1993,2000,2013)

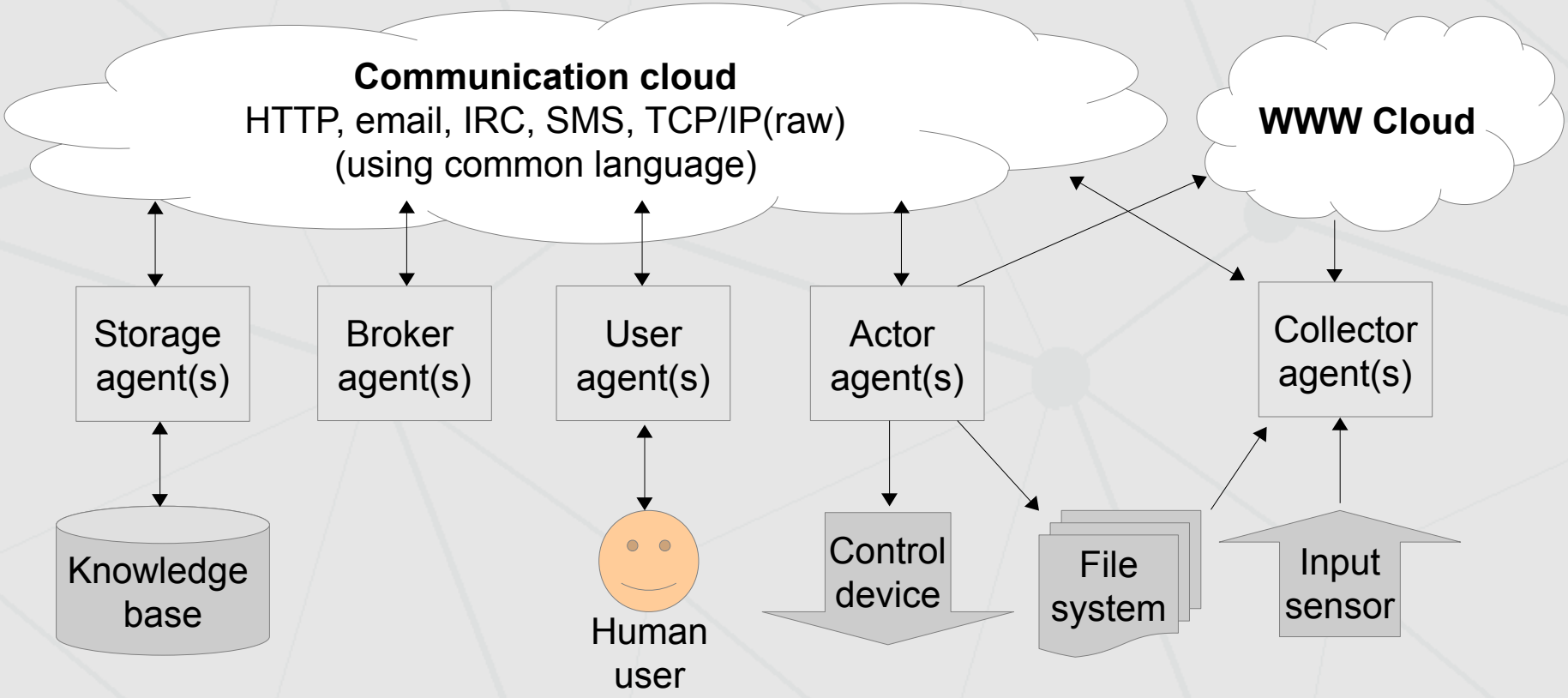
Social evidence-based cognitive model



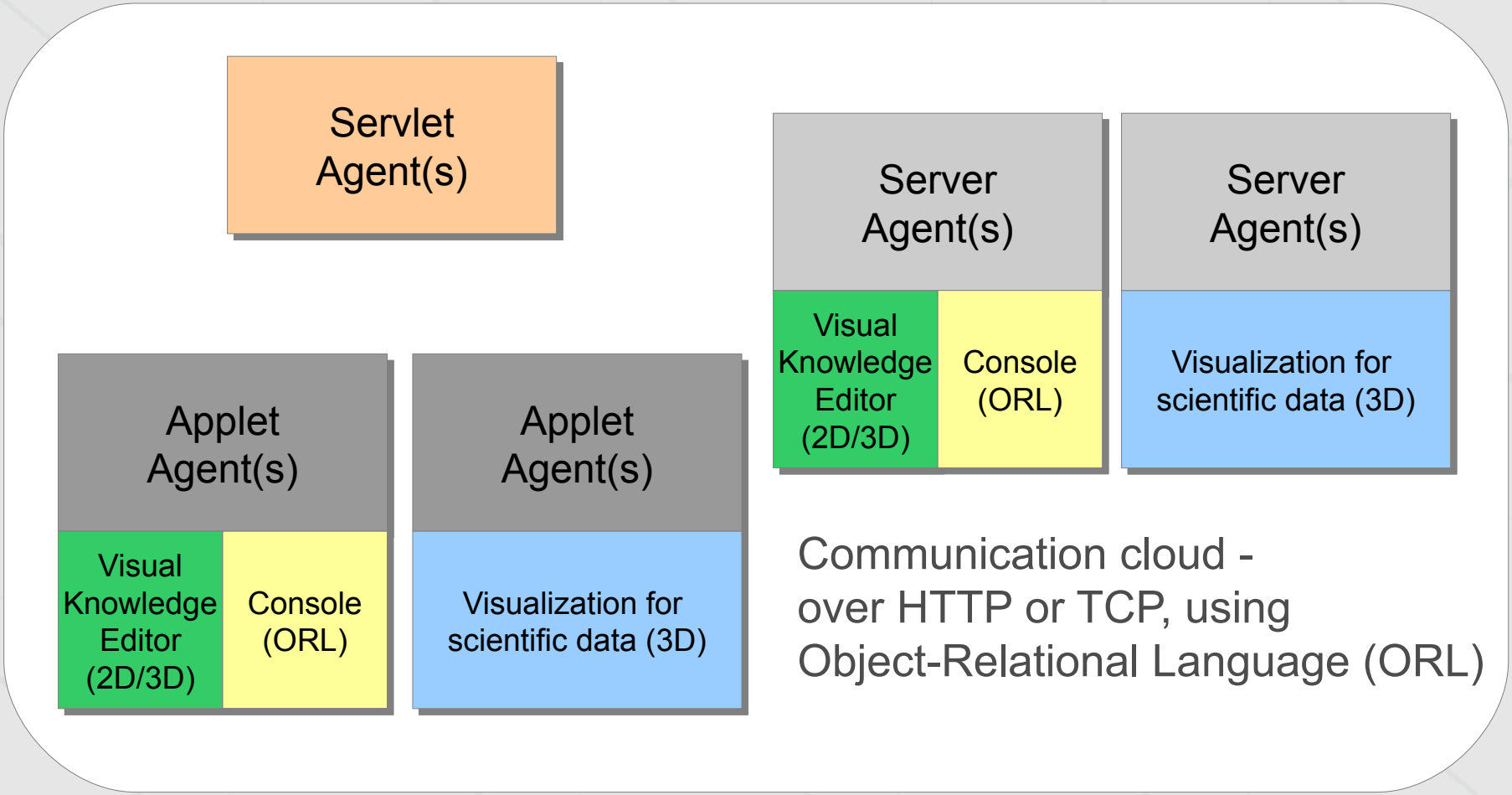
Applying resource constraints to the model



Approaching distributed multi-agent architecture

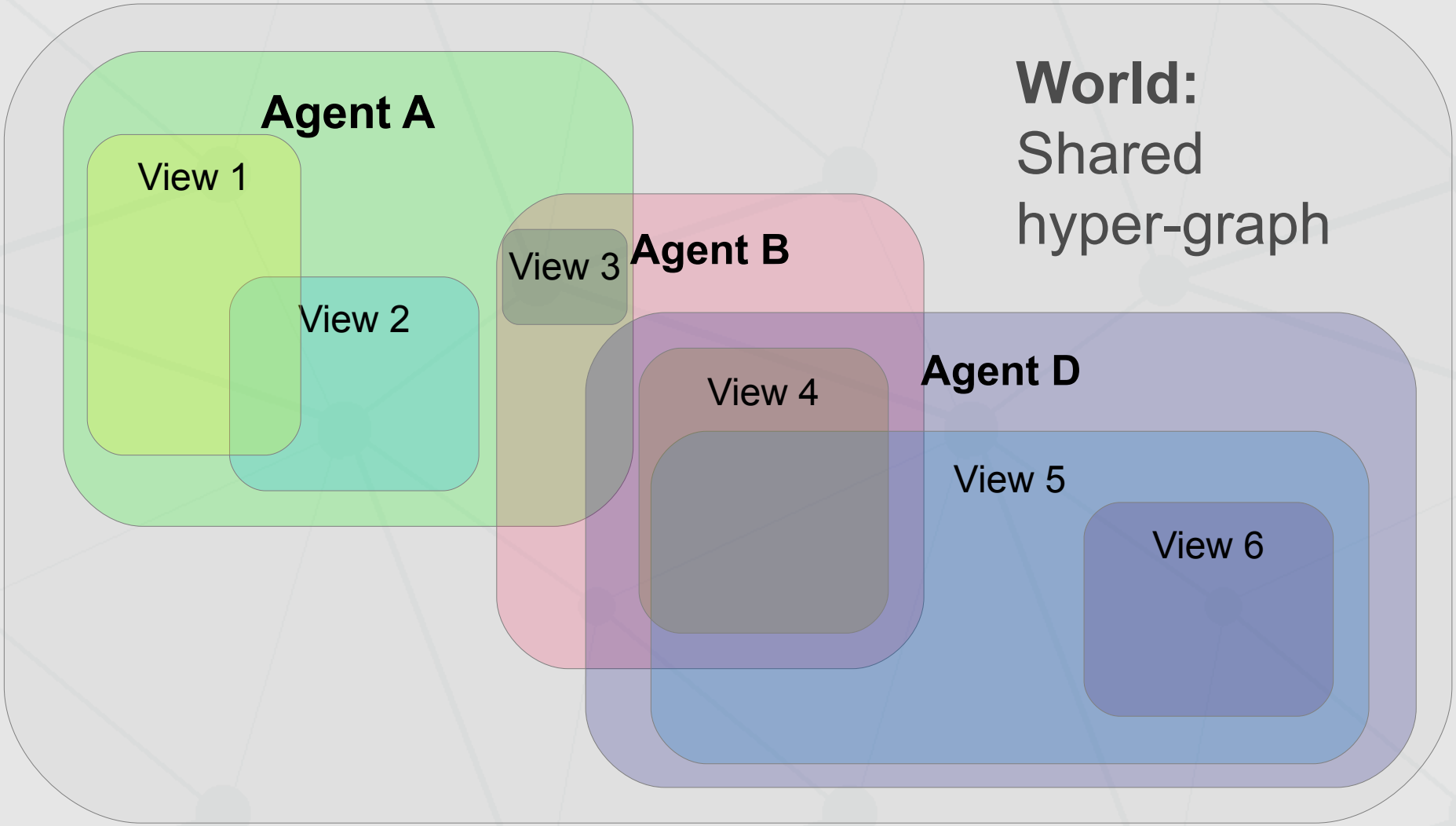


Webstructor: Types and functions of agents

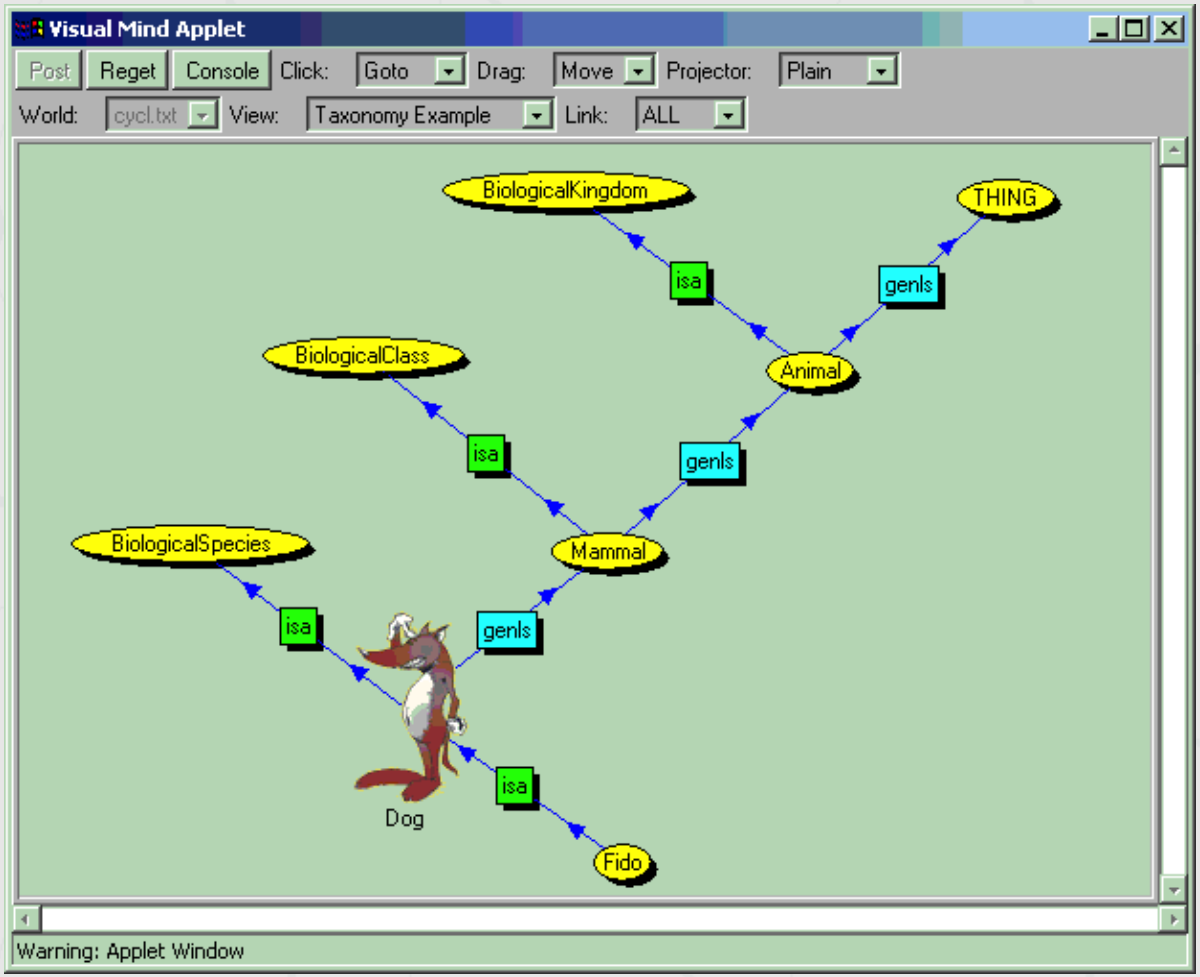


Distributed multi-agent (peer-to-peer) architecture

Webstructor: Sharing “world” data visible in “views”



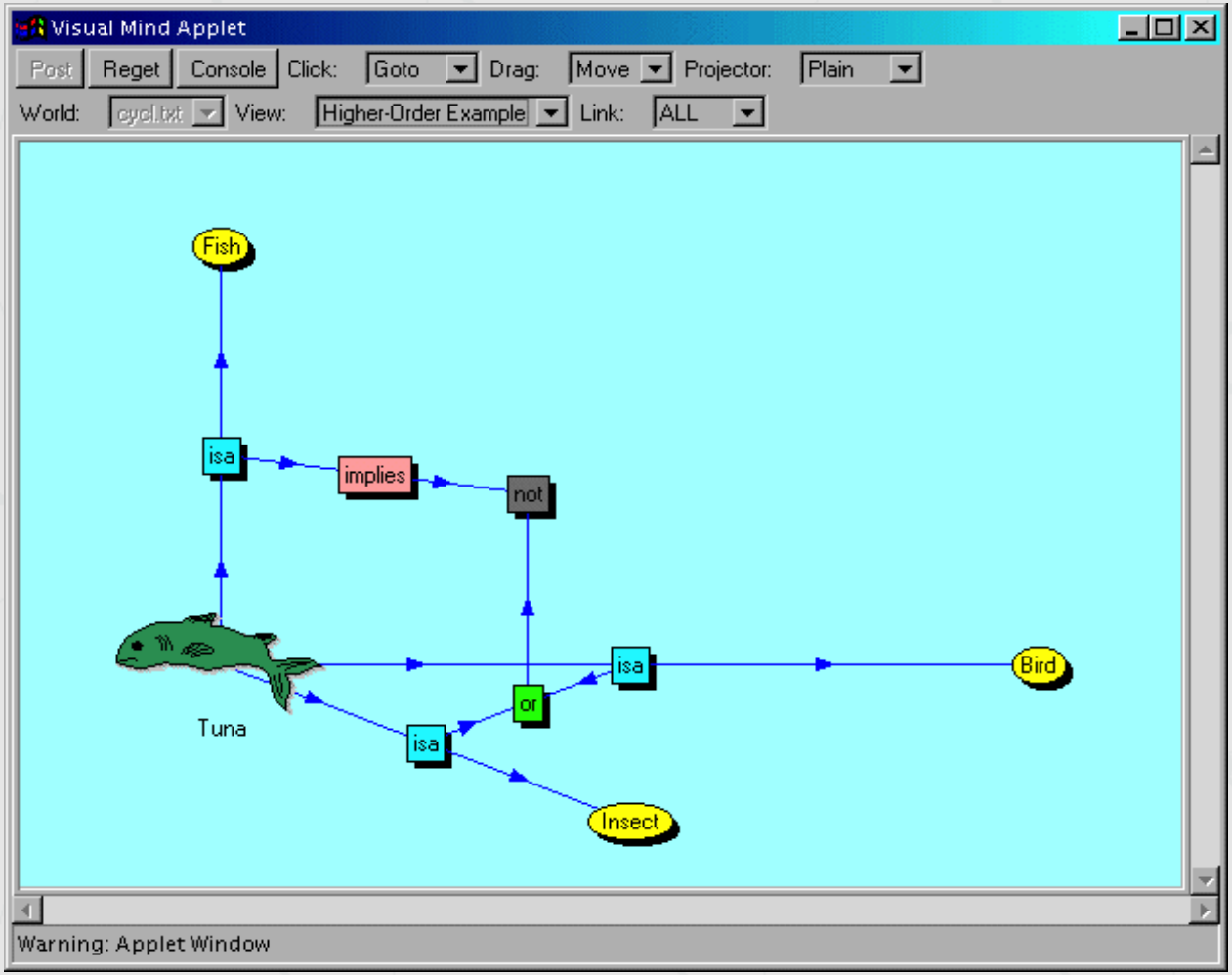
Webstructor: Distributed visual knowledge editor - 2D



Part of “biological kingdom” of Cyc “upper ontology”

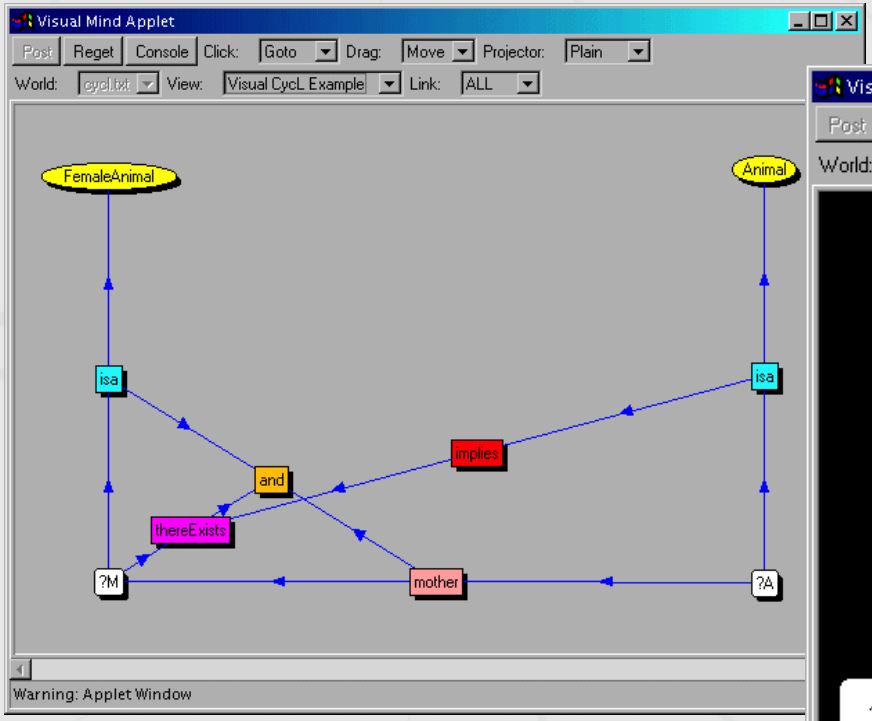
http://webstructor.net

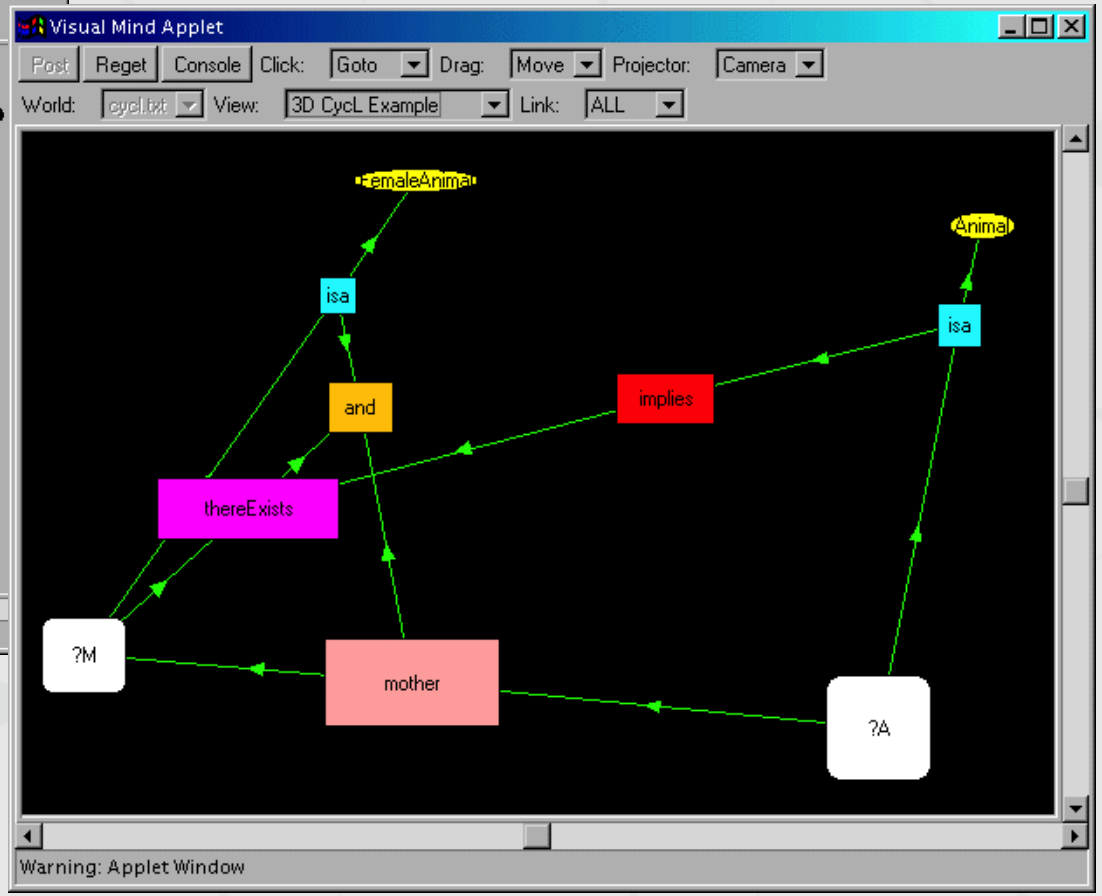
Webstructor: Distributed visual knowledge editor - 2D



Formula:“If tuna is a fish, it implies it is not an insect or a bird”

Webstructor: Distributed visual knowledge editor - 3D





CycL formula editor:

(implies (isa ?A Animal) (thereExists ?M (and (mother ?A ?M) (isa ?M FemaleAnimal))))

http://webstructor.net

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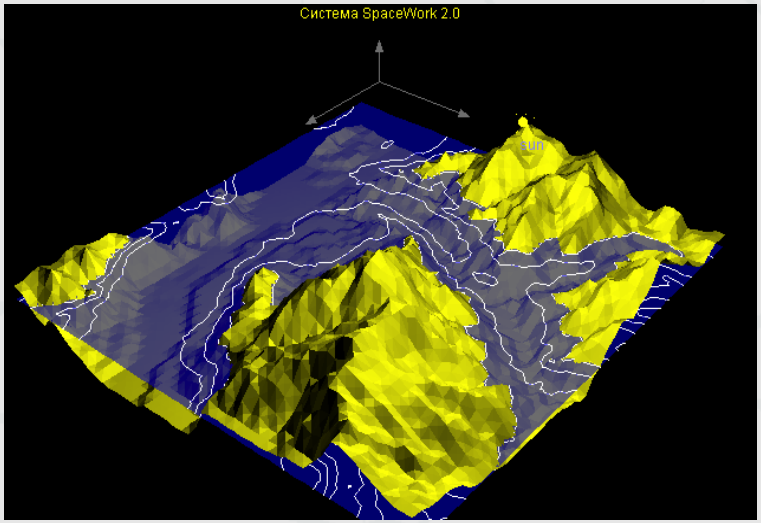
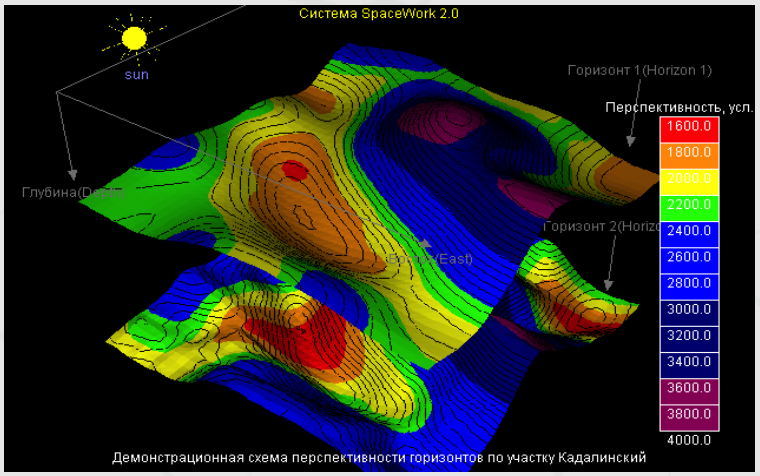
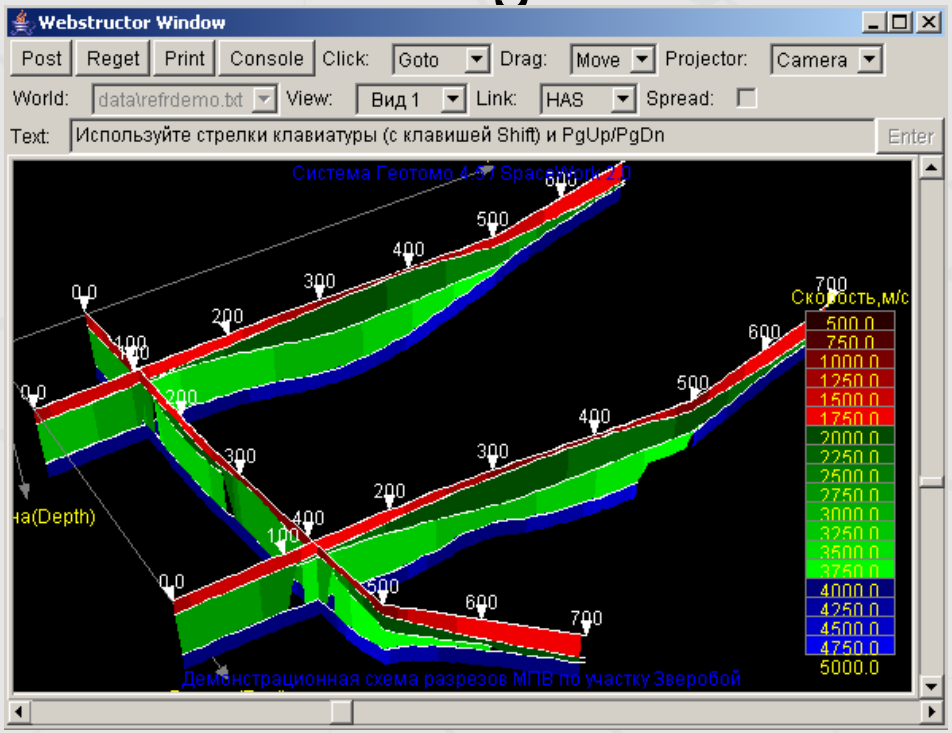
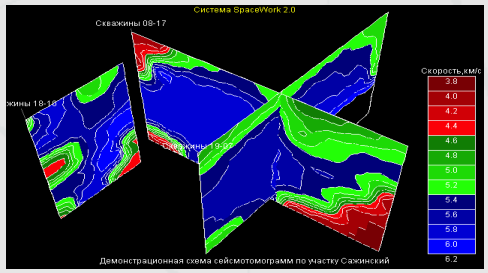
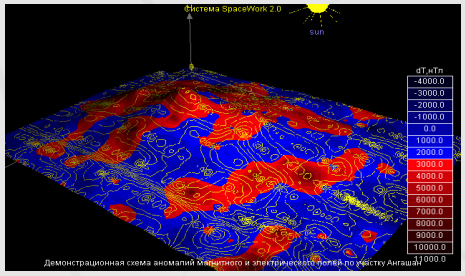
Webstructor: Distributed visual knowledge editor - 3D







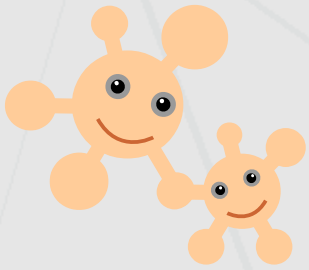




Representing complex spatial data in hyper-space

http://webstructor.net

Thank you for attention!



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