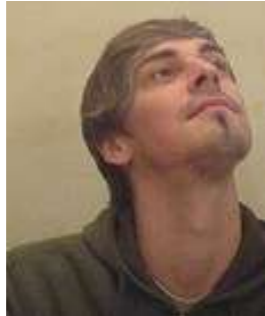


VUB AI-Lab and Sony CSL Language: A bird's-eye view

Pieter Wellens
VUB AI-Lab

OMLL Final Conference
12/12/2007

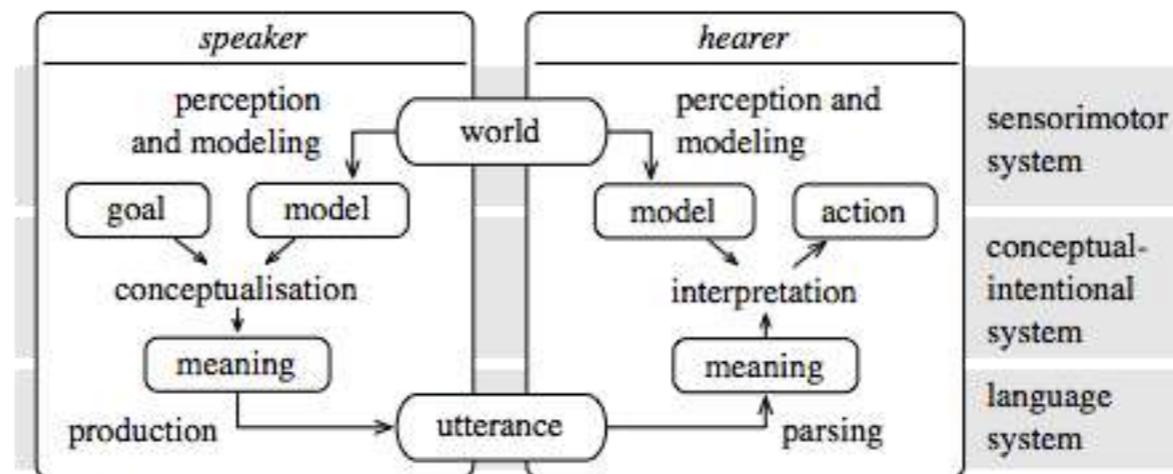
The teams: who and what?



- Robotics - Michael Spranger & Martin Loetzsch (Sony CSL)
- Procedural Semantics - Wouter vd Broeck (Sony CSL)
- Language/Grammar - Pieter Wellens, Joachim de Beule, Joris Bleys (VUB AI-Lab) and Remi van Trijp (Sony CSL)

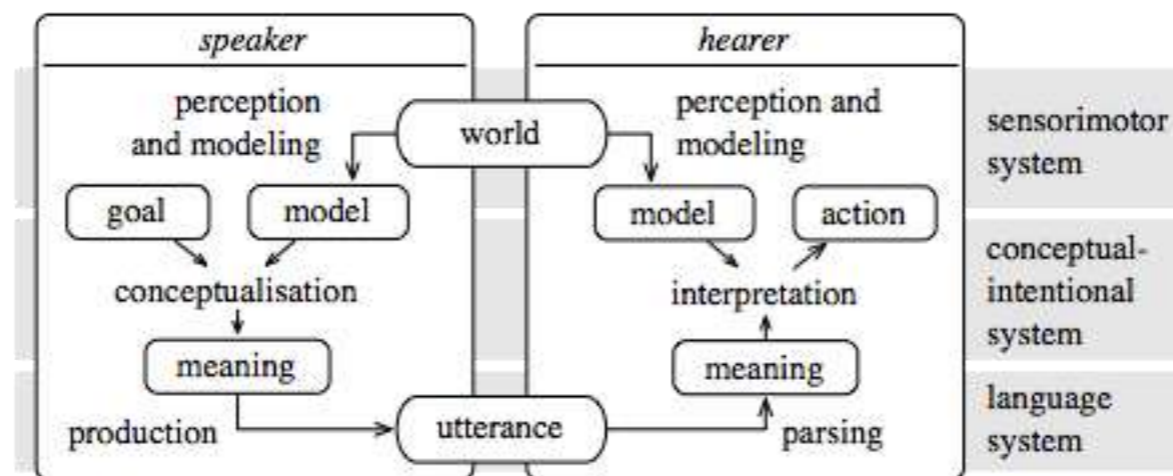
Approach: Common Themes

- Multi Agent Approach
- Situatedness of language use } language game paradigm
- Whole System Approach }



Common Frameworks

- Language: Fluid Construction Grammar
 - Conceptual Intentional System
 - Multi-agent experiment framework
- } Babel 2*

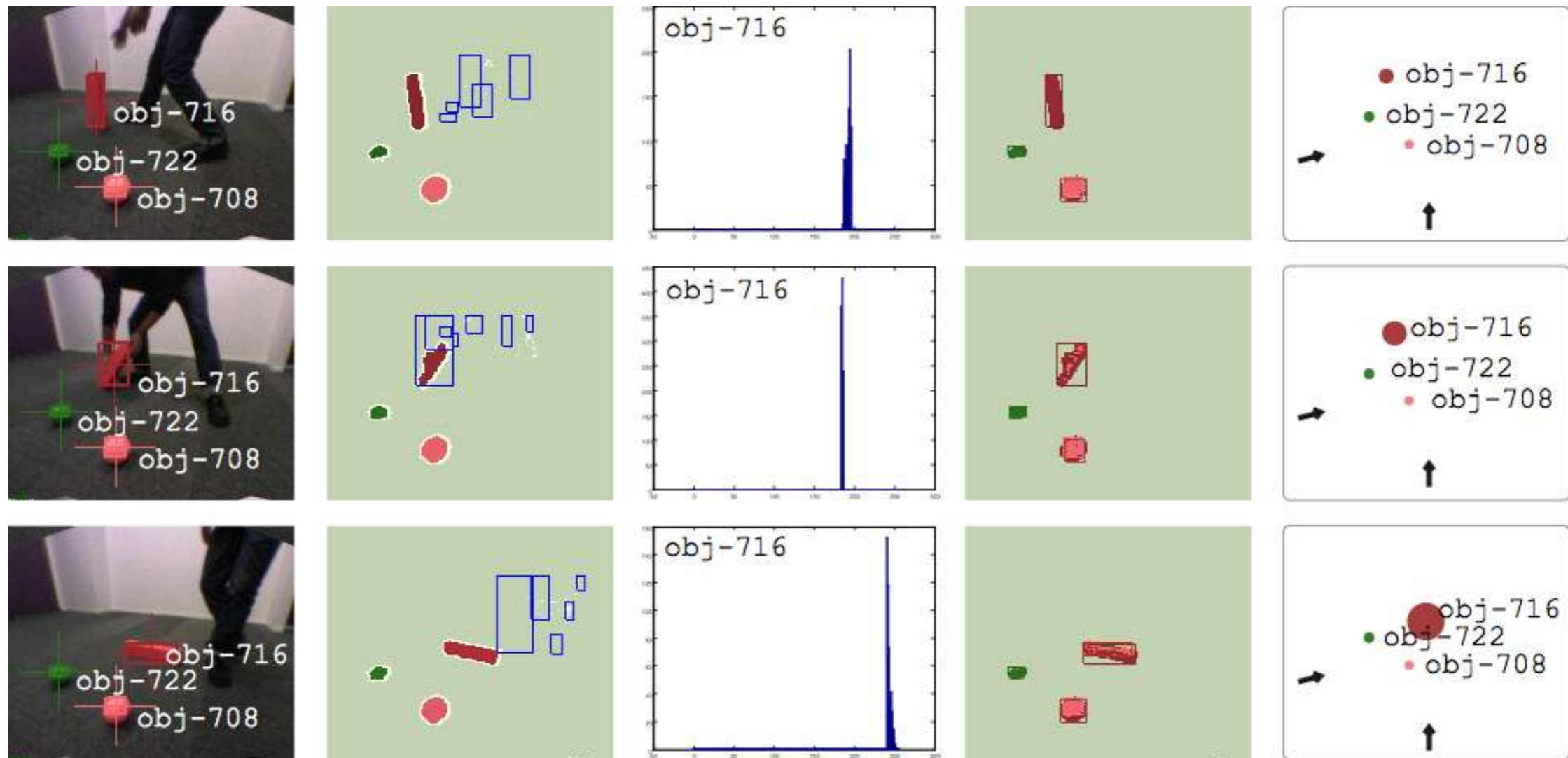


* Babel 2 is freely available from <http://www.emergent-languages.org>

Grounded Naming

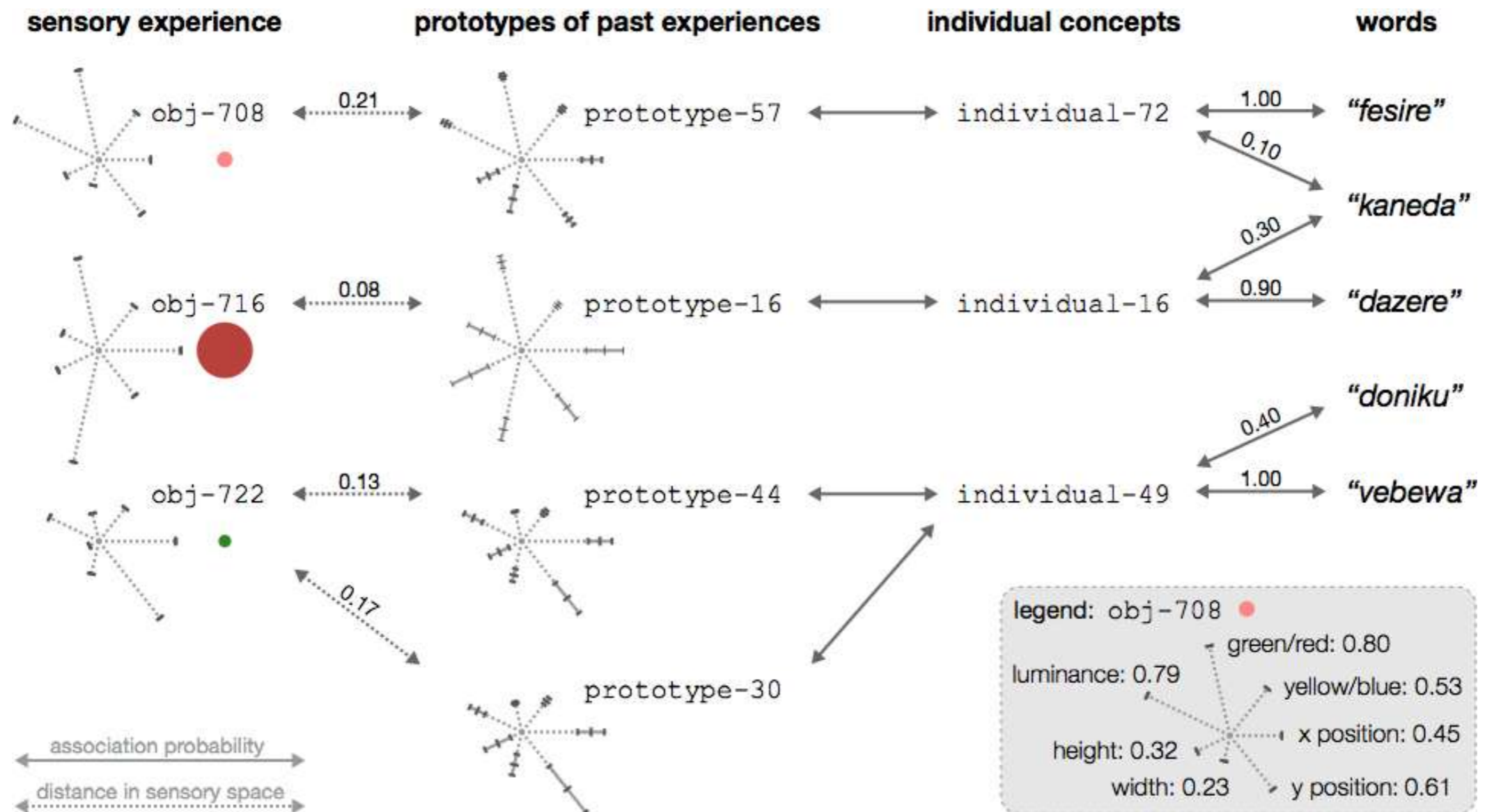
Game

Sensori-Motor: Tracking



Grounded Naming

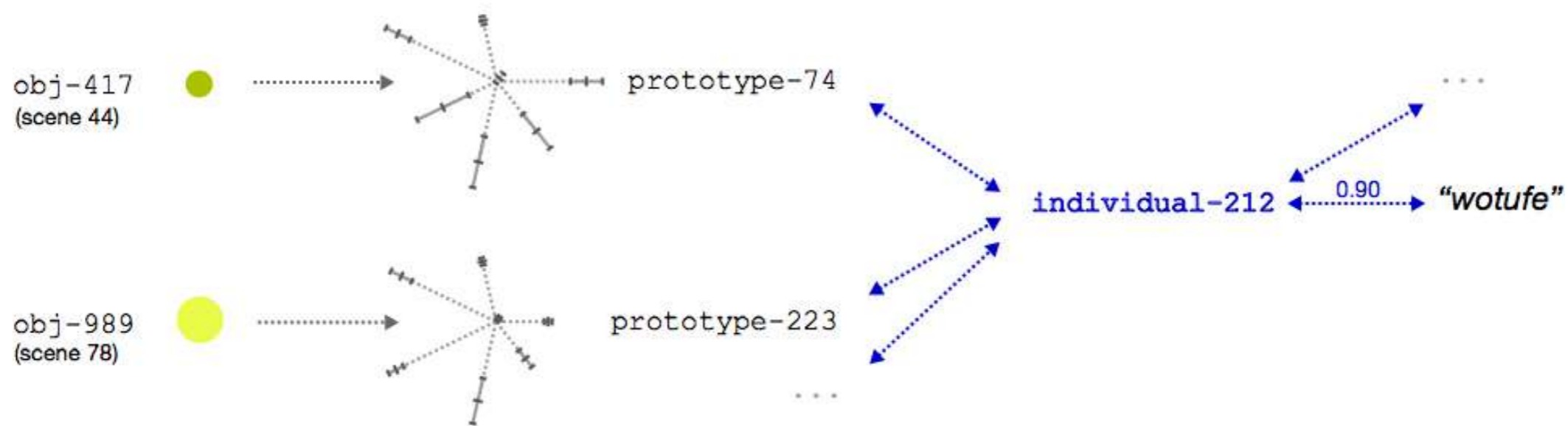
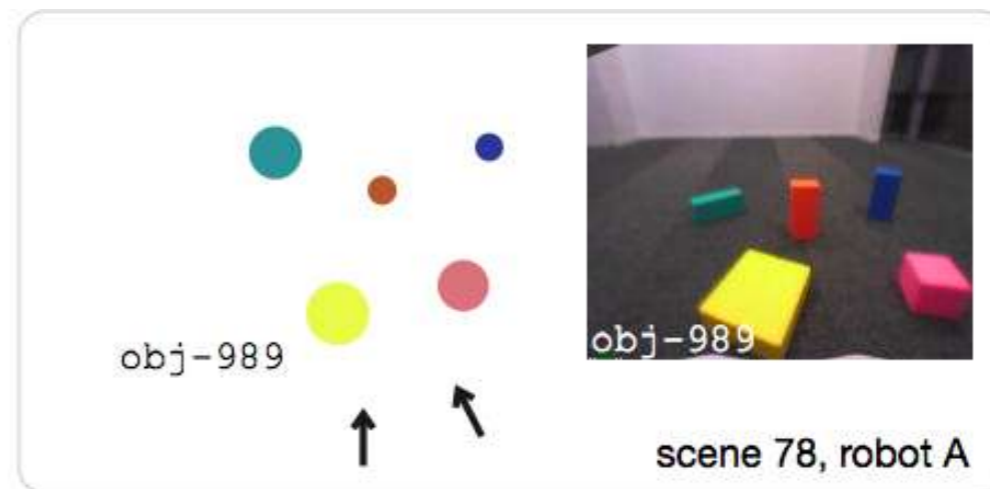
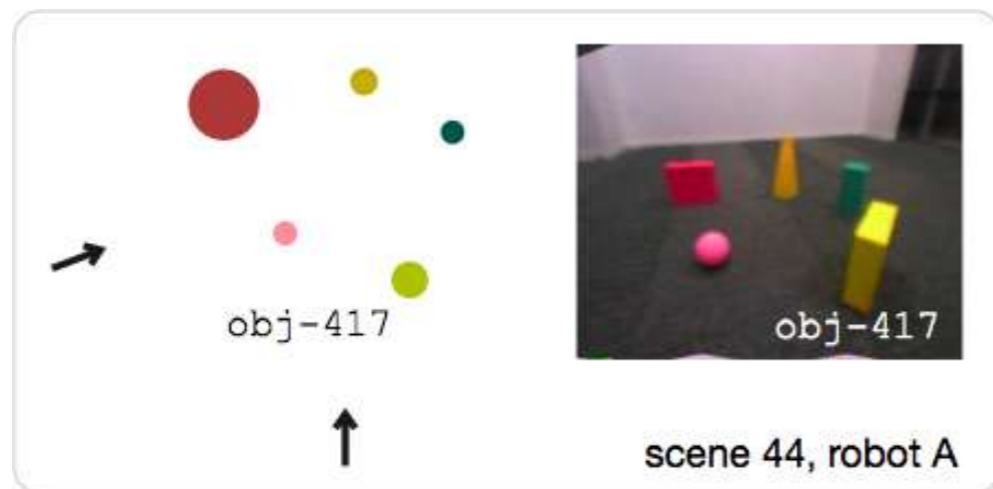
Game Conceptualisation and Language



Grounded Naming

Game

Language helps object identification



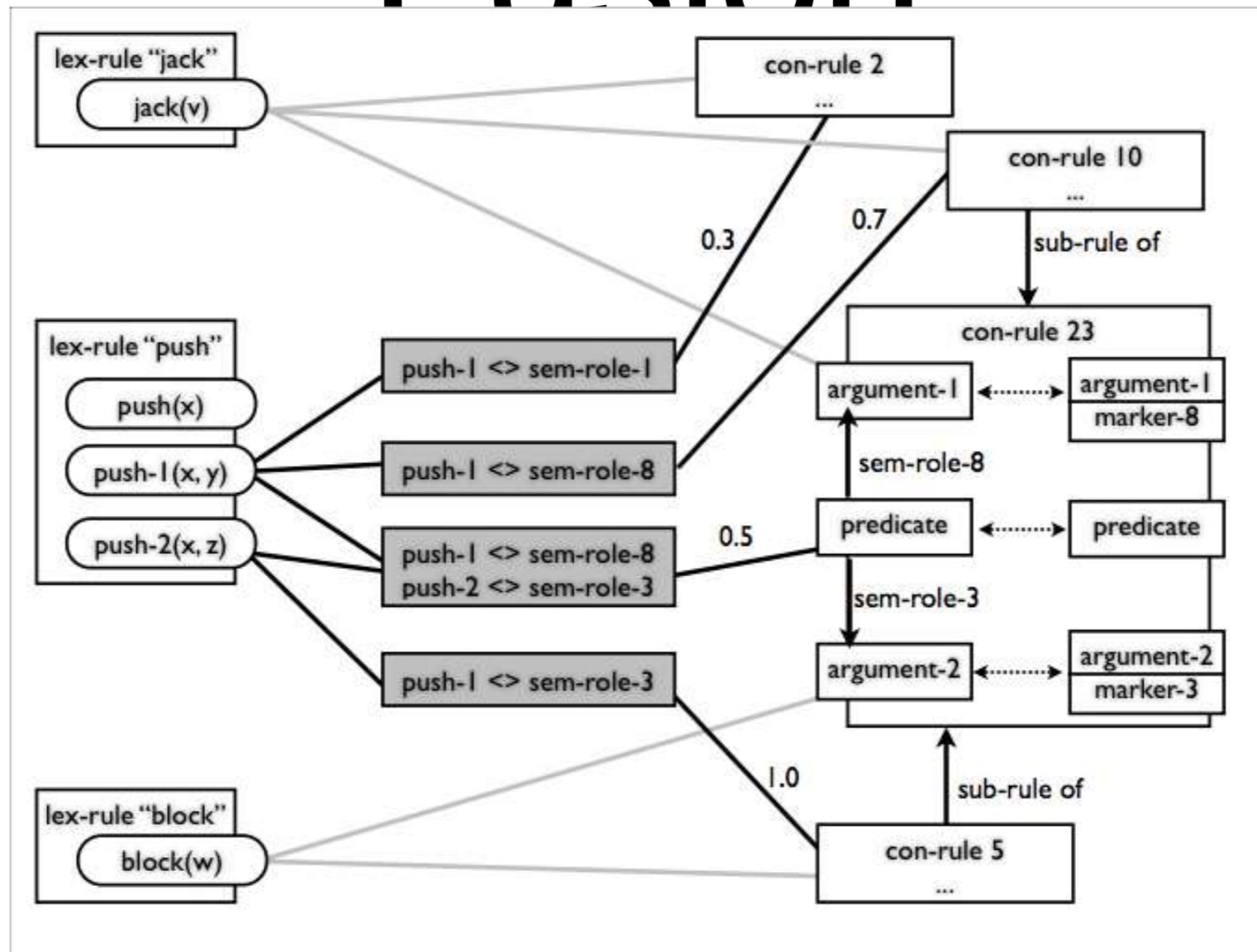
Perspective Reversal



Steels, L. and Loetzsch, M. [Perspective Alignment in Spatial Language](#). In Coventry, K.R., Tenbrink, T. and Bateman, J.A., editor, *Spatial Language and Dialogue*, Oxford University Press. Oxford, 2007

Loetzsch, M., van Trijp, R. and Steels, L. [Typological and Computational Investigations of Spatial Perspective](#). In Wachsmuth, I. and Knoblich, G., editor, *Modeling Communication with Robots and Virtual Humans*, LNCS , Berlin, 2008. Springer.

Case Grammar: Fusion



van Trijp, Remi (to appear). The Emergence of Semantic Roles in Fluid Construction Grammar. Proceedings of EVOLANG 2008 conference.

Steels, Luc, van Trijp, Remi and Wellens, Pieter (2007). [Multi-Level Selection in the Emergence of Language Systematicity](#). In: Almeida e Costa, Fernando et al (eds.). [Proceedings of the Ninth ECAL](#). LNAI 4648. p. 425-434. Berlin: Springer-Verlag.

Grammaticalisation:

Extension, Erosion and Entrenchment

- Extension: The use of linguistic items beyond their specification.
- Semantic Erosion: loss or generalisation in meaning content.
(Entrenchment is its

Results in languages that:

- change over time
- consist of usage based/functional constructions
- can cope with enormous (referential) uncertainty (cfr. the Gavagai problem)

