

Cangelosi A. and ITALK team (2010). Integration and Transfer of Action and Language Knowledge in Robots. CogSys 2010 - 4th International Conference on Cognitive Systems, Zurich, January 2010.

In the presentation we will discuss ongoing results on the ITALK project.

Highlights of year 1 results includes: (i) Roadmap. The consortium has produced a RoadMap for research in developmental robotics, with respect to future challenges on the integration of action and language knowledge in robots. See milestones in table below. (ii) iCub Simulator. A new Open Source iCub simulator software was produced. This is available at: <http://eris.liralab.it/italk> Social learning experiments. We extended the ROSSUM learning architecture to a humanoid robot platform, and work has commenced on the experimental issues for various aspects of negation and grammar induction. (iii) Cognitive linguistics grammar learning scenarios. Empirical analyses of child-directed and robot-directed speech interactions led to the definition of incremental cognitive linguistic scenarios for language learning experiments. (iv) Acoustic packaging. Acoustic packaging has been observed as a means of communication that is used towards infants. We applied the concept of contingency to our studies on human-robot-interaction and analysed it qualitatively. We found that in comparison to adult-adult and child-adult interaction, people show little eye gaze towards the robot suggesting that contingency is impaired in this situation. (iv) Cognitive biases. Initial experiments on category learning and naming in human-robot interactions have demonstrates the presence of a spatial/location bias, previously observed in developmental psychology.