

Robotics and Embodied Agents Modelling of the Evolution of Language

Angelo Cangelosi

Centre for Robotics and Neural Systems

University of Plymouth, UK

This paper provides a brief overview of some of the seminal works on the modelling of language evolution through experiments with robots and embodied agents. By *robots* we refer here to simulated and/or physical artefacts that can interact with the world through sensors (e.g. microphone for sounds, camera for images, touch sensors) and actuators (e.g. wheels for spatial exploration, and arms and hands for manipulation of objects). Robot language experiments typically involve tasks in which the robots have to communicate about objects and entities in the environment (Steels 1999), about their physical interaction with objects (Marocco et al. 2003; Cangelosi et al. 2010), and about their body posture (Steels & Spranger 2009). By *embodied agents* we refer to multi-agent systems in which a population of simulated agents live in a shared environment, can receive visual, auditory and tactile information about the world, and can act on it. These multi-agent experiments typically involve communication about spatial navigation and foraging tasks (Cangelosi 2001).