Network Action Proposal

Title:	**Visit of Prof. J. Fernando Fontanari at Adaptive Behaviour & Cognition research group of the University of Plymouth**
Membership number(s)	97
Member name(s)	Prof. Angelo Cangelosi
Member institute/company name(s)	University of Plymouth
Goals of the action	*- To enable 2-week research visit of Prof. J. Fernando Fontanari (University of São Paulo at São Carlos, Brazil) to Prof. Angelo Cangelosi's Adaptive Behaviour and Cognition Lab at the University of Plymouth and initiate new research collaboration project.* Prof. Fontanari is full professor of theoretical physics at USP-São Carlos. He was one of the pioneers in the use of statistical mechanics concepts and tools to study recurrent and feed-forward neural networks in the 1980s. At that time he served as associate editor of the journal Network: Computation in Neural Systems. His area of expertise is statistical mechanics with focus on applications to biology and cognitive science. Cangelosi and Fontanari have collaborated in the past on a project on Modeling Fields Theory application into multi-agent modeling. That work was supported by a travel grant from the European Office of Aerospace Research and Development. Funding is now requested for a visit of Prof. Fontanari in Plymouth to initiate a new research collaboration on the performance analysis of cross-situational learning algorithms for guessing or naming games. These games stand as the current paradigm for vocabulary (or more generally, proto-language) acquisition in a population of artificial agents. In the naming game, a context comprising several objects together with an utterance (word) is presented to an agent who must then infer to which object in the context that word is associated. Despite this central role, a quantitative analysis of the performance (i.e., communication accuracy after training) of the cross-situational learning algorithms proposed in the literature (see Fontanari & Perlovsky, 2006) as the control variables – number of objects to be named, size of the lexicon, size of the context, and size of the agent population – are changed is lacking in the literature. The main goal of this research proposal is to provide such performance analysis, and plan future modeling studies on language learning and evolution.
Principal activity to which it contributes Community Outreach	Community Outreach: - Exchange visit

Concrete outcomes of the action	The action/visit will result in: - The start of a new research project on the performance analysis of cross-situational learning algorithms for vocabulary acquisition. - The facilitation of a future formal collaboration between the University of São Paulo and the University of Plymouth. - The preparation of state-of-the-art-survey/position paper for the euCognition Wiki on cross-situational learning algorithms. - The publication of the main findings in an international journal or in the proceedings of an international conference.
Effort in person-days that will be charged to the Network Action (if any)	N/A
Expected start and duration in months	1/10/2008 (2 weeks)

The requested funding, under the following headings:
 	
   o Travel Costs
 	
   o Other Costs (check with the Network Coordinator if you aren't sure about eligibility of these costs)
 	
   o Labour Costs (identify the number of person-days and the rate per day).
	€ 900 support for accommodation and subsistence during stay in Plymouth (reduced EU daily allowance of 60 euro times 15 days)
	
	€ 1600 Travelling cost between Sao Carlos (Brazil) and Plymouth (UK), including local travelling and intercontinental flight.
	
	€2500 TOTAL REQUESTED

Please identify any other sources of funding that contribute to this Action	The simulations of the agent populations will be carried out with the cluster of PCs at Fontanari's group in São Carlos.

Note: This project is on language evolution, and is not related to the ITALK project/tasks.
Prof. Cangelosi has no alternative funds to support the trip from Brazil