Competition for Scarce Resources: Can Indecision Improve Agents’ Adaptation and Coordination?

Pierre Barbaroux\textsuperscript{1}  
Gilles Enée\textsuperscript{2}

\textbf{Abstract}: This paper is concerned with individual learning processes and memory effects. Technically, we use a particular class of Learning Classifier Systems (LCS), e.g. Pittsburgh Classifier Systems, to model agents’ knowledge structure and learning capacities. Within the framework of asymmetric coordination games, we demonstrate that learning and coordination processes depend upon agents’ cognitive capacities. The paper shows that Indecision (ND) can emerge as a logical condition for coordination to be reached in case of competition for scarce resources.

\textbf{Key Words}: Learning, Memory, Asymmetric coordination, Agent-based modeling techniques.

\textsuperscript{1}Ecole de l’Air, CREA - Laboratoire Défense et Management de la Connaissance. BA 701, Ecole de l’Air, 13661 Salon Air, France. Contact: pbarbaroux@cr-ea.net // pierre.barbaroux@inet.air.defense.gouv.fr

\textsuperscript{2}Laboratoire GRIMAAG. Campus de Fouillole, B.P. 592, 97157 Pointe à Pitre Cedex, France. Contact: gilles.enee@univ-ag.fr