
	ACTION CONCERTÉE SYSTEMES COMPLEXES EN SHS APPEL A PROPOSITIONS 2003	
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COGNITIVE AND NEURAL MECHANISMS UNDERLYING RELATIONAL COMPLEXITY BEHAVIOUR.

Durée du projet : 2 ans

Nature du projet: projet : "grandeur nature"

Thématique choisie parmi celles de l'appel d'offre : Cognition Sociale

Responsables scientifiques

(nom, prénom, fonction, organisme, adresse, téléphone, fax, email) :

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Discipline du responsable scientifique :

Sirigu A : Psychology, Neuroscience

Coricelli G. : Economics

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Noms et coordonnées des équipes partenaires :

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Disciplines couvertes par les équipes partenaires : Economics

Situation du sujet et objectifs généraux du projet : In the present project we focus on the issue of *relational complexity*, i.e., complexity arising from the way in which the players' preferences over the outcomes of a game are intertwined. In our project we experimentally and theoretically address the cognitive issue raised by Schelling's distinction (1960) between pure and mixed motive games. In particular, we will investigate the extent to which decision making in strategic situations of a mixed motive nature may be affected by the difficulty to correctly represent the underlying game structure in terms of the relations of players' preferences over outcomes. Hence, we will focus precisely on possible representational failures that could be at the basis of observed strategic behavior. In a first experiment our central claim is that there are cognitive constraints in jointly representing multiple order relationships. We will design an experiment in which subjects are provided with a set of objects that can be ordered by pairs of order relations and have to select a subset of them that satisfies such pairs of order relations. We test the hypothesis that different bi-orders induce different levels of representational difficulty. More specifically, we hypothesize that bi-orders that are monotonic and projective are easier to represent than non-monotonic and projective bi-orders, which in turn are easier than non-projective ones. Subsequently we will also test the relationship between short term memory capacity and performance in representational tasks of differing complexity. In a second set of experiments we will explore the link between relational complexity in a context of interactive games. Finally, we will investigate brain processes using the EEG technique when subjects are engaged in individual representational tasks and in interactive games of differing complexity.