

**WORKSHOP ANR GROUP : “IN-GROUP FAVORITISM IN INTERGROUP CONFLICTS”  
DECEMBER, 11-12 2023**

**Faculté d'Économie - Université de Montpellier**

**Room: salle du conseil (1st floor)**

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**MONDAY, DECEMBER 11 (MORNING) : PRESENTATION OF THE WORK PACKAGES (WP)**

**9h00: Welcome Break**

**9h30-11h00 :**

**WP1 :** “Biased perceptions and other-regarding preferences in intergroup conflicts”, Antoine Pietri (CEE-M)

**WP2 :** “The evolutionary foundations of other-regarding preferences in intergroup conflicts”, Ingela Alger (TSE/IAST)

**11h00-11h15: Coffee break**

**11h15-12h30 :**

**WP3 :** “Infinitely repeated and continuous games in the Lab”, Marc Willinger (CEE-M)

**Lunch : 12h30-14h: Brasserie Pompette (sur invitation)**

**MONDAY, DECEMBER 11 (AFTERNOON) : PRESENTATIONS**

**14h-16h:**

- ❖ Petros Sekeris (MBS/CEE-M): “Confidence and Performance in Tournaments and Contests”.
- ❖ Simon Varaine (CEE-M): « Egoism and altruism in intergroup conflict”
- ❖ Jorge Peña (TSE/IAST): “Evolution of environmentally mediated social interactions under isolation by distance”

**16h-16h30: Coffee break**

**16h30-18h**

- ❖ Hannes Rusch (Max Planck Institute – Study of Crime, Security and Law): “Between-Group Conflict Shapes the Interplay of Altruism and Parochialism and Vice Versa”
- ❖ Jean-François Bonnefon: “Cooperating with Machines”. (TSE/IAST)

**Diner: 20h : La brasserie du théâtre (sur invitation)**

**TUESDAY, DECEMBER 12 (MORNING): DISCUSSIONS OF ON-GOING WORKS & LAUNCHING OF PROJECTS**

**9h30-12h30 :**

“Parochial altruism and Inter-group prisoner dilemma” (Simon Varaine)

“Evolutionary dynamics in the lab: continuous time and matching” (Guillaume Cheikbossian)

Theoretical works....

**12h30-14: Lunch: Brasserie Pompette (sur invitation)**

## ABSTRACTS:

### **Petros Sekeris : “Confidence and Performance in Tournaments and Contests”**

This paper studies the effect of confidence biases on players' relative efforts in tournaments and contests. We uncover a non-monotonic effect of confidence on equilibrium relative efforts and winning probabilities. A player with either a low or a high confidence exerts less effort than his rival at equilibrium. However, for intermediate confidence levels, the player exerts more effort than his rival. These results show that a less able or a cost disadvantaged player may nevertheless outcompete his rival because of confidence biases.

### **Simon Varaine: “Egoism and Altruism in Intergroup Conflict”**

Studies have shown that intergroup conflict may result from two distinct human motives: the desire to obtain personal retributions from conflict (*egoism*), and the desire to sacrifice for the benefit of the ingroup (*parochial altruism*). Yet, the relative strength of these motives is open to debate. In this study, we compare behaviors in two Intergroup Prisoner's Dilemmas (IPD), which respectively capture altruistic and egoistic motives to generate conflict. Egoistic motives result in about 40% more conflict than altruistic motives. Yet, parochial altruism generates more conflict when three conditions are gathered: i) other ingroup members are parochial altruists, ii) the outgroup is aggressive and iii) the outgroup is rich. Implications regarding the diverging structural causes of terrorism and civil wars are discussed.

### **Jorge Peña: “Evolution of environmentally mediated social interactions under isolation by distance”**

Many social interactions happen indirectly via modifications of environmental variables, e.g. through the depletion of renewable resources or the secretion of functional compounds. Here, we derive the selection gradient on a quantitative trait affecting the dynamics of such environmental variables that feedback on reproduction and survival in a patch-structured population that is finite, of constant size, and subject to isolation by distance. Our analysis shows that the selection gradient depends on how a focal individual influences the fitness of all future individuals in the population through modifications of the environmental variables they experience, weighted by the neutral relatedness between recipients and the focal. The evolutionarily relevant trait-driven environmental modifications are formalized as the extended phenotypic effects of an individual, which quantify how a trait change in the individual in the present affects the environmental variables in all patches at all future times. When the trait affects reproduction and survival through some payoff function, the selection gradient can be expressed in terms of extended phenotypic effects weighted by scaled-relatedness coefficients. We show how to compute extended phenotypic effects, relatedness, and scaled-relatedness coefficients using Fourier analysis, allowing us to investigate a broad class of environmentally mediated social interactions in a tractable way. We illustrate our approach by studying the evolution of a trait controlling the costly production of some lasting commons (e.g. a common-pool resource or a toxic compound) that can diffuse in space. We show that whether selection favours environmentally mediated altruism or spite depends on the spatial correlation between an individual's lineage and the commons originating from its patch. The sign of this correlation depends on interactions between dispersal patterns and the commons' renewal dynamics. More broadly, we suggest that selection can favour a wide range of social behaviours when these are mediated in space and time through environmental feedback.

## **Hannes Rusch: “Between-Group Conflict Shapes the Interplay of Altruism and Parochialism and Vice Versa”**

Individuals participating in violent intergroup conflicts often risk their lives for goals which, if achieved, benefit their entire ingroup. This behavior was labeled 'parochial altruism' by Choi & Bowles (Science, 2007). Their original model assumes four possible types: parochial altruists (PA), tolerant altruist (TA), parochial non-altruists (PN), and tolerant non-altruists (TN). Over longer time horizons, they predict evolving populations to oscillate between two states: relatively peaceful times during which the TN type prevails and warlike times during which the PA type dominates. This model's interpretation as a possible trajectory of human biological evolution is considered implausible by many today (Rusch 2014, Proc B; Dyble 2021, PNAS). However, whether the model captures the dynamics of more fast-paced processes of preference adaptation correctly remains to be scrutinized. This is what we attempt here. We ask: (1) Can individuals' preferences be decomposed along the two assumed altruism/non-altruism and parochialism/tolerance dimensions? If yes: (2) Does a combination of altruistic and parochial preferences predict aggressive behavior in intergroup conflicts at the individual level? And: (3) Do longer phases of peace (or war) lead to a prevalence of TN (or PA) preference types at the population level? Previous literature offers only partial answers. Our contribution is fivefold. First, we develop and validate a measure of individual-level parochial preference which is conceptually orthogonal to an individual's social preferences. Next, we show that this measure indeed complements existing measures of social preferences in predicting aggressive decision behavior in intergroup conflict games in Western samples. Third, we take the measure to the field to test for its association with real intergroup conflict participation in a non-WEIRD population. Fourth, we quasi-experimentally manipulate real-world intergroup relationships to test if parochial preferences are generic or group-relation-specific. Fifth, we provide a mini-meta-analysis of the relations of our new measure to other individual characteristics.

## **Jean-François Bonnefon: “Cooperating with Machines”.**

I will present a series of articles in which we examine how people behave in repeated cooperation games where some of the players are machines. These articles show the existence of a "machine penalty", meaning that while people show non-zero cooperation with machines, they do not cooperate as much as they would with humans. Two solutions are explored that could make the machine penalty disappear. People may cooperate with machines more once they realize that this behavior increase their reputation for cooperation in the eyes of other humans; and human-machine cooperation may be improved though classic tools like peer rewards and peer punishments.