

Proposition de sujet d'alternance 1A
2023-24

Laboratoire : AMSE

Titre du sujet : Living with Complexity

Encadrant *(s) : Stéphane Luchini (CR CNRS) ; Patrick Pintus (PU AMU) ; Miriam Teschl (MCF EHESS)

Localisation : AMSE, Ilot Bernard Du Bois

Coordonnées :

stephane.luchini@univ-amu.fr ; papintus@gmail.com ; miriam.teschl@ehess.fr

* un co-encadrement est possible.

** l'encadrement devra être assuré de préférence par un permanent du laboratoire, au **minimum titulaire d'un Doctorat**.

Descriptif du sujet et de la mission (au moins sur la 1^{er} année) :

What can we do and what do we want to know when we are faced with complex situations? How can we make decisions in situations when predictions are out of reach, (at least without making a number of unverifiable assumptions) or when one decision may lead to a number of follow-up events of which we may not even be aware? Over the last few years, we have embarked on a journey of complexity, how we live with it, if and how we perceive it and what tools (including cognitive ones) we have to deal with it. Our research involves interdisciplinary conceptual and experimental work with neuro- and social scientists. We tested some ideas experimentally in the lab with animals and humans, and applied some of our newly gained insights to real world complex challenges such as Covid-19. Our ongoing research team includes and included several students from Ecole Centrale Marseille who did their research internship with us. Their contributions range from literature reviews across the different disciplines to gain a more in-depth historical and conceptual understanding of the questions we are dealing with, exploring existing computer games that deal with complex phenomena from an almost anthropological "skin-in-the-game" perspective, coding computer programs to set up experiments with animals (notably rats) as well as to experiments with humans to test some particular cognitive abilities, and exploring new reinforcement learning algorithms.

Many questions remain and so there is much more to explore. That is why we are happy to work with new students who will become full members of our research group. We are proposing some questions, without necessarily knowing what will come out of it at the end. We propose to embark together on a journey of exploration in different directions, using different tools of a wide array of disciplines, because complexity is certainly not limited to the economic domain only.

Validation pour mise en ligne ECM :

