

# SEMINAR AND CONGRESS

## *Morphologies and qualitative dynamics: an interdisciplinary project Knowledge of forms | Forms of knowledge*

### ORGANIZATIONAL AND SCIENTIFIC STRUCTURE

#### ORGANIZERS:

Isabel Marcos<sup>1</sup> and Clément Morier<sup>2</sup>

#### SPONSORSHIP AND COLLABORATIONS:

CICS. NOVA, CFHSS, Nova University of Lisbon (to be completed)

#### SEMINAR | CONGRESS LOCATION:

Institut Humanités et Sciences de Paris | Université Paris Diderot

#### SCIENTIFIC COMMITTEE:

Per Aage Brandt, Bruno Pinchard, (to be completed)

#### PLANNED INVITATIONS FOR THE CONGRESS | SEMINAR:

Non-exhaustive list of individuals likely to be interested in our approach (list to be completed)

(\*): Confirmed participation

Bruno Pinchard (*), Michel Serres, Miguel Espinoza (*), Isabelle Stengers : <i>General Philosophy, Philosophy of Science, Epistemology</i>	Jean Petitot, Per Aage Brandt (*), Wolfgang Wildgen (*), Ivã Lopes (*): <i>Linguistics, semiotics, and cognition</i>
Marc Chaperon, David Aubin (*), David Rabouin (*), Jean-Jacques Szczeciniarz (*), Bernard Tessier, Alain Chenciner, Claude Paul Bruter (*), Daniel Bennequin : <i>Mathematics, History and Philosophy of Mathematics,</i>	Benoît Virole (*), Bent Rosenbaum (*), Lucien Scubla (*), Michèle Porte : <i>Psychoanalysis, anthropology</i>
André Pichot, Jacques Demongeot (*), Jacques Viret (*), Sara Franceschelli (*), Yannik Kergosien : <i>Philosophy of Biology, Physiology, Biomathematics, Physics</i>	Philippe Martin (*), Gaëtan Desmarais, Jean-Paul Hubert : <i>Geography, Geomorphology, Urbanism, Architecture</i>

<sup>1</sup>University Professor - Researcher in Semiotics of Space at the CICS.NOVA, Centre Interdisciplinaire de Sciences Sociales | FCSH Universidade Nova de Lisboa

<sup>2</sup>Doctor in Political Science - Researcher at the Centre Lyonnais d'Etudes de Sécurité Internationale et de Défense (CLESID - EA 4586) | Université Jean Moulin-Lyon III

## OBJECTIVES:

The goal is to organize a space of reflection (Congress | monthly seminar) by establishing an interdisciplinarity culture from the work of René Thom. For this, it is a question of:

- **Identifying** the more or less heavy influences from the impact of Catastrophe theory;
- **Creating** an interdisciplinarity space of dialogue between the followers of Thom and any researcher interested by the Thomian scientific approach;
- **Reuniting** a set of dispersed publications among the various specialties on a platform in order to render evident this wealth of information;
- **Perceiving** what could be the engendered consequences/results of these events, in order to evaluate the existence of sufficient interests and necessary means on the part of the scientific community, for the implementation of an Association centered on the work of René Thom.

Through a collaborative culture, the project in its ambition could be opened up to the following research horizon: does Thom's thought allow for interdisciplinarity?

## TERMS OF DISCUSSION:

Considered terms of discussion of the congress and seminar: the structuring of this space for reflection could be carried out through two moderators. This modality would didactically present a common base for exchanging, and scientifically, would promote the emergence of constructive interaction by way of questions and developments. We propose arguments and counter-arguments as a relevant method for advancing scientifically, in keeping with the discussions that René Thom himself maintained with multiple scientific disciplines. This modality has as aim to foster collaboration between various domains of knowledge, and to enable them to discuss, but above all to meet with one another.

## Contextualization | Themes | Approach | Calendar | Organization

### CONTEXTUALIZATION

The interrogation at the heart of the project is the following: what are the questions that Thom has passed on to us, and that he has lead up to raise in our own domains? It seems to us that the encounter with Thom, or with his thought, does not leave one indifferent. With which questions, in terms of fundamental science, did Thom confront us in our respective domains? What did his discoveries challenge or criticize as self-evident in our disciplines?

### THEMES

*On the basis of the construction of a language and a common heritage, this first year would be a year of introduction focused on the definition of the concepts that allow for interdisciplinarity in Thom.*

*Questionings at work in the congress and the seminar: is it possible to establish a common interdisciplinarity culture, and with which tool box? Could the in-depth notions from René Thom, and more broadly maybe the ambition of a "morphological turn", enable us to take up the challenge of producing interdisciplinarity? Would they enable us to establish a culture of collaboration in academia, for the purpose of generating the advancement of knowledge? Does the entry of morphology provide us with this common language?*

*But then, what is morphological thinking? How does it distinguish itself from the rest of thought? What more does it bring compared to non-morphological positions, and are there in this morphological posture differences of approach which are opposed to them, even irreconcilable?*

To answer this, one of the ways would be to produce questions in the form of "aporia", driving forms for each discipline, starting with the encounter with tools from Thom. These questions would thus be raised by the theoretical propositions that Thom brought to the surface. In what way have the notions and questions raised by René Thom created further expansions, even the revisiting of positions, proper to each discipline?

These notions, among others, are the following:

- **The precedence of the continuous over the discontinuous** and the **emergence of the discontinuous** from the continuous;
- The articulation that Jean Petitot named **the physics of meaning** and that René Thom called "Semiophysics";
- What was the Thomian notion of **preprogram** able to provide in theoretical biology, how can we recognize the tendency to think in terms of a biology of archetypes?
- Around the concept that Bruter named "transversality" and Thom **canalization** of a **gradient dynamic system**: what is the scope in other fields of thought, of a reflection in terms of **qualitative dynamics** stemming from the geometric domain of algebraic topology, following Poincaré?
- What of what the heirs and friends of Thom defined as the possibility in the sciences to consider a **morphological turn**, which could challenge the **linguistic turn** largely initiated following the works of the Vienna Circle?
- In the fields of the Humanities and Social Sciences, is it a question of falling into a Promethean ambition of mathematizing the human or the social, or is it rather a restitution of the internal sensitivity, both retractile and pulsatile, of **similar forms of organization present at different levels of the ladder**?
- So thus can we see **mathematics as a language**; but then, is this not the risk to see in Thom nothing but a **theory of analogy** or of metaphor?
- In Thom, does the central claim of a **realist**<sup>3</sup> epistemology, furthered notably by his friend Jean Largeault, have impacts in different disciplines of the humanities and social sciences?

## APPROACH

*This initial moment of the seminar would aim to more precisely define what are the key concepts and engines of an interdisciplinarity from the morphological axis. First, can we discern criteria, even an axiomatic, which leads us to define **the particularities of morphological thought**?<sup>4</sup>*

*What are the approaches, tools, methods, and concepts which would enable us to **tie together the notions studies in the disciplines that are specific to us; in other terms, how do these concepts connect the domains, open them up to the specific contributions of the others**?*

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<sup>3</sup> Realism is situated against epistemological idealism, focused on the subjective procedures of knowledge rather than on the modifications in the real appearance of objects and states of things, on their modal changes: what are the interdisciplinarity implications of this position?

<sup>4</sup> *Let's take an example of interdisciplinarity dialogue among all these raised directions: as an example of such properties of morphological thought, must we minimally assert the anteriority of the continuous over the discontinuous? If yes, what are the implications that this epistemological position (or this theoretical proposition) would have in the various disciplines of the humanities and social sciences? To spin the kind of questioning to which Thom leads us to confront, in the sociological, but also anthropological, domain, is it a defense of the position of "methodological holism" against the position of "methodological individualism"? If yes, what would the already conceptualized definition of holism gain in taking into consideration the anteriority of the continuous over the discontinuous? That is to say, what would this position gain in considering what one of the properties of morphological thought would do, if this property were effectively retained as distinctive from its approach? Can the concept of "society" or of "social" be thought as part of the continuous texture of the "symbolic" from whence is extracted the discontinuous, the individual? etc.*

Here are a few examples:

- *What does qualitative physics bring to biology?*
- *What does topological thought bring to semiotics?*
- *What does the notion of bifurcation bring to linguistics?*
- *What does the notion of dynamic systems bring to psychoanalysis?*
- *What does the precedence of the continuous bring to metaphysics?*
- *What does qualitative dynamics bring to mathematics?*
- *What does the concept of morphogenesis bring to the sciences of territory?*
- *What does morphological thought bring to political science?*
- *What is the relevance of catastrophe theory for the humanities and social sciences?*

In general, having two disciplines means having two "languages" (with their own concepts and evolutions). But, can we not identify in a language the expression of a notion equally used in another? In other words, are there not morphological properties which we find in various disciplinary fields, but which are the expressions of the same mechanisms, that a disciplinary differentiation would render difficult to detect, so to speak? We hope that this space of reflection can thereby contribute to the current discussions around the "sciences of complexity".

### CALENDAR | ORGANIZATION: PROGRESSION OF THE MONTHLY SEMINAR

	DISCIPLINES	Participant	Moderator
17-11-2017	Interdisciplinarity	Presentation of the Seminar	Presentation of the Seminar
15-12-2017	<i>Linguistics, Semiotics &amp; Cognition</i>	Per Aage Brandt (Case University   USA)	Wolfgang Wildgen (Brême University   Germany)
12-01-2018	<i>Theoretical biology &amp; Psychoanalysis</i>	Jacques Viret (CRSSA (Research Center of the Army Health Service) in Grenoble)	Benoît Virole ( <i>Psychoanalysis</i>   Paris)
09-02-2018			
09-03-2018			
06-04-2018			
04-05-2018			
01-06-2018			
06-07-2018			

### CALENDAR | ORGANIZATION: PROGRESSION OF THE TWO-DAY CONGRESS 4, 5 and 6 October 2018