

## CALL FOR PAPERS

### *Symmetry, Proportion and Seriality: The Semantics of Mirroring and Repetition in Science and the Arts*

**Academia Europaea Conference** to take place in Freiburg/Germany  
Freiburg Institute for Advances Studies (FRIAS)  
**May 26-28, 2016** (Thursday afternoon to Saturday lunch)

Abstracts should be sent to the conference organisers by  
**July 25, 2014**

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#### Abstract/Conference Description

Symmetry is one of the key factors in a variety of sciences and humanities subjects. Equations must be symmetrical; in architecture symmetry is a basic design feature; linguists discover iconic and symmetrical relationships in their objects of study; in chemistry and physics symmetrical and asymmetrical designs play an important role; in music and all the arts symmetry is often considered the basis of aesthetic quality. There are also several types of symmetry that one might want to distinguish. Symmetry can be set off against, but also paired with, two other features that play a similar role in the sciences and the arts: proportion and seriality. Exact symmetry in some instances is too neat, too boring, or simply not possible, yet a set of proportional relationships may be deemed crucial to a particular effect. Proportion can thus be regarded as a more general framework that allows one to set items in relationships to one another, with symmetry being the most perfect of these relationships. The visual arts, especially film and dance, employ proportion and symmetry as kinetic rather than merely static modes. As regards seriality, it is a recursive application of symmetry and repetition, but also a type of design that operates dynamically rather than statically. Besides its obvious relevance to the arts in experiments in seriality in (post)modernist painting, music and literature, seriality plays a central role in mathematics and physics.

The conference could not only try to compare concepts of symmetry, proportion and seriality across the humanities-sciences divide; it should additionally explore the historical dimensions and changes in taste that affect the understanding of these terms and concepts; and it should discuss them as culture-specific phenomena, comparing ideas of symmetry and proportion in Asia or Africa or among Native Americans with those taken for granted in Europe. Cognitive scientists, medical researchers and linguists may be particularly fascinated by these phenomena and want to explore why it is that symmetry is so important to our minds and our language, indeed to the design of our bodies and brains.

The conference theme has been chosen because of its expected attraction to the sciences as well as to the humanities. Among the disciplines that may want to participate in this conference are the following:

- Archaeology
- Literary and Theatrical Studies including Classics and Oriental Studies
- Linguistic Studies
- Musicology and History of Art and Architecture
- Mathematics and Informatics
- Physics
- Chemistry (and Biochemistry and cell biology)
- Philosophy

The conference will have four blocks. In each block there will be first either a podium discussion or a terminology session that (in the form of a podium discussion) presents different perspectives from different disciplines in the sciences and humanities. This will be followed by two plenary lectures of some 20 minutes each with a long discussion period. It is important for presentations to be on a level of general comprehensibility.

### **BLOCK A) SYMMETRY – INDETERMINACY – CHANCE**

When perceiving and constructing the world around us, symmetries are fundamental structural elements which guarantee stability, predictability, interpretability. The attempt to understand the world has therefore long been guided by the quest for symmetries, eventually even by enforcing them as a construction principle. However, such program is under permanent challenge by the world's apparent tendency for constant change and transformation, and quantum mechanics (or, at least, its wide-spread current understanding) tells us that the material world is fundamentally much less determined than our senses suggest to us. Indeed, randomness, chance, chaos and uncertainty are constitutive ingredients of such change, and therefore can be considered as driving forces and essential sources of evo-

lution, pattern formation, and beauty. We will scrutinize the present understanding of the mutual roles of symmetry, chance and uncertainty in the arts and sciences, for their diverse interpretations of the world, and for various concepts to shape it

### **Block B) REPETITION – SERIALITY – TEMPORALITY**

Repetition is a key element of human perception and of the ways in which we relate to and give structure and meaning to experience, learning, and understanding. The phenomenon of repetition highlights questions of identity and, at the same time, of difference. Repetition self-reflexively touches upon issues such as iterability in general and is also closely related to the perception and analysis of sequence and, thus, to phenomena such as series and seriality, circularity and linearity, reproduction, recursion, and recursivity. These issues produce complex connections to time and temporality, which paradoxically accentuate the desire for and the impossibility of (identical) repetition. In this block we invite analysis and discussion in such diverse fields as all areas of aesthetics, philosophy, narratology, linguistics, musicology, mathematics, physics, chemistry, biology, or geology/geography.

### **Block C) AESTHETICS: SYMMETRY, PROPORTION, MIRRORING**

This section concentrates on the aesthetic effects of symmetry, proportion and mirroring effects both in the humanities (e.g. in metre, in art, in music) and in the sciences (Mandelbrot set, the proportions and aesthetic properties of equations or of theoretical models). More fundamentally, all theorizing is actuated by a desire for simplicity and pregnancy, which often goes hand in hand with a tendency towards symmetry or proportionate arrangements. Cognitive analysis of mirror neurons has also shown that our urge for imitation is based on a repetition compulsion that works through identification, and which proposes a very convincing explanation of poetic and everyday mimesis. These issues seem to suggest that symmetry, proportion and mirroring are constitutive of aesthetic appreciation but also central to cognition and understanding as well as to creative modelling in general.

### **Block D) SESSION ON RESULTS AND OPEN QUESTIONS**

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