

 European Semiotics
Sémiotiques Européennes

This book – written in collaboration with René Doursat, director of the Complex Systems Institute, Paris – adds a new dimension to Cognitive Grammars. It provides a rigorous, operational mathematical foundation, which draws from topology, geometry and dynamical systems to model iconic “image-schemas” and “conceptual archetypes”. It defends the thesis that René Thom’s *morphodynamics* is especially well suited to the task and allows to transform the morphological structures of perception into Gestalt-like, abstract, proto-linguistic schemas that can act as inputs into higher-level specific linguistic routines. Cognitive Grammars have drawn upon the view that the deep syntactic and semantic structures of language, such as prepositions and case roles, are grounded in perception and action. This study raises difficult problems, which so far haven’t been addressed as a mathematical challenge. *Cognitive Morphodynamics* shows how this gap can be filled.

Jean Petitot is a mathematician and expert on neurocognitive models, a semiolinguist and a philosopher of science. He is currently professor at the École des Hautes Études en Sciences Sociales (EHESS) in Paris, and former director of CREA at the École Polytechnique. He is the author of eight books and over 300 articles, the editor of 10 volumes, and a member of the International Academy of Philosophy of Science, the editorial boards of several journals, and the scientific committees of many institutions.

ISBN 978-3-0343-0475-7



9 783034 304757

www.peterlang.com



Jean Petitot • Cognitive Morphodynamics



European Semiotics
Sémiotiques Européennes

11

Jean Petitot

Cognitive Morphodynamics

Dynamical Morphological Models of
Constituency in Perception and Syntax

In collaboration with René Doursat

Peter Lang