

1. How to grasp in conceptual and theoretical terms the interplay between local functional specialization and global holistic effects at work in biological and cognitive organization? How should mechanistic and systemic explanatory strategies be integrated?
2. How should the idea of the causal action of the whole on its parts be understood? In what precise sense would it involve “downward causation”? Which biological and cognitive examples do support this view?
3. In what sense the emergence and the organization of complexity implies questions like function, purpose, and information? How are they related with other forms of complexity, which do not include functional and/or informational concepts?
4. Does biological and cognitive complexity intrinsically implies hierarchies and levels of organisation? On what grounds should they be differentiated, and how should their mutual relations be understood?
5. To what extent is the status of *time* central to understand biological and cognitive complexity? In what sense would historicity, retention, protention, cycles, rhythms...all be specific dimensions of biological and cognitive organisation, going beyond Physics and Chemistry?