

02. November 2007

Zentrum für interdisziplinäre Forschung
Tagungsraum „Round Table“ (Raum 213)

14:15h – 15:15h (Gerhard Jäger)

15:30h – 16:30h (Frank Riedel)

Gerhard Jäger

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Frank Riedel

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Evolution of communication about conceptual spaces

In his book "Conceptual Spaces", Peter Gärdenfors argues that (a) meanings are arranged in spaces with a geometrical structure, and that (b) natural meanings of simple natural language expressions denote convex regions of such a conceptual space. In the first part of our talk (Gerhard Jäger) we will argue that this convexity postulate can be derived as a self-reinforcing equilibrium in communication if meanings are drawn from a finite set of points in an Euclidean space. This result is derived by means of analytical techniques from evolutionary game theory.

In the second part of the talk (Frank Riedel), we will present two applications of this general setup relating to the typology of color terms and to the pragmatics of measure terms.

In the final part, we will consider the case when the meaning space is continuous, i.e. if each point within some compact n -dimensional Euclidean space is a possible meaning. Since the standard insights about the relation between static and dynamic stability in evolutionary game theory only apply to games with finite strategy spaces, we will address some foundational issues about evolution of games with infinitely many strategies.