Brief Bio and (PR)^2: Problems & Pitches – Rants & Raves by *Andrea Scharnhorst*

Andrea Scharnhorst is a Senior Research Fellow at the Virtual Knowledge Studio for the Humanities and Social Sciences (VKS, www.virtualknowledgestudio.nl) in Amsterdam, an institute of the Royal Netherlands Academy for Arts and Sciences. At the VKS, she leads a collaboratory on modeling and simulation in the humanities and social sciences. Her work focuses on the use of mathematical models (in particular models of self-organization, evolution and complex systems) as heuristic tools. She is concerned with issues of boundary conditions and dynamic processes behind systemic innovations, and recently edited a book (together with Andreas Pyka), "Innovation Networks – New Approaches in Modelling and Analyzing" [link to Amazon http://www.springer.com/economics/economic+theory/book/978-3-540-92266-7]. She has coordinated a EC funded project on webindicators, (www.webindicators.org) participated in another EC project on Critical Events in Evolving Networks (www.creen.org) and is currently workgroup leader of the EC funded COST action MP 0801 "Physics of Competition and Conflicts" (http://www-f1.ijs.si/~tadic/COST_MP0801/). She is visiting professor at the Statistical Cybermetrics group at the University of Wolverhampton, UK. She is engaged in translating and bridge-building between different knowledge areas, in particular between the natural sciences and social sciences and humanities.

- list of up to five major publications

Pyka, A. Scharnhorst A. (2009) Innovation networks. Springer

Hellsten Iina, Renaud Lambiotte, Andrea Scharnhorst, Marcel Ausloos. 2007 "Self-citations, co-authorships and keywords: A new approach to scientists' field mobility?", *Scientometrics* 72(3): 469-486. DOI 10.1007/s11192-007-1680-5

Scharnhorst, A.(2003) "Complex Networks and the Web: Insights from Nonlinear Physics", *Journal of Computer-Mediated Communication* 8(4)

Bruckner, E., Ebeling, W., Jiménez-Montaño, M.A., Scharnhorst, A. (1996) Nonlinear Effects of Substitution - an Evolutionary Approach. *Journal of Evolutionary Economics* 6, pp 1-30

Bruckner, E., Ebeling, W., Scharnhorst, A. (1989) Stochastic Dynamics of Instabilities in Evolutionary Systems. System Dynamics Review 5 (2) (1989) 176-191.

- list of relevant projects you are working on

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- links to data or software you serve (if applicable)

a web-based simulation tool for evolutionary search EVOLINO
http://www.virtualknowledgestudio.nl/projects/evolino/

- link to your home page.

http://www.virtualknowledgestudio.nl/staff/andrea-scharnhorst/

An Image I relate to…

General Questions

1) What is (are) your main interest(s) in attending the workshop?

To understand the different epistemic functions of mathematical models and visualizations in interdisciplinary collaborations, in particular around the question how innovation emerges and survives

2) What would you like to learn / achieve at the workshop?

How can we conceptualize the different epistemic roles of models? How visualizations function as carriers of knowledge transfer and as mutually shared language in the trading between different disciplinary epistemic cultures

3) ***If you are a philosopher of an historian of science:*** In what ways might people that study and map science benefit from your work?
What models can contribute to understand knowledge **dynamics**.

If you are a scientometrician/science map maker: In what ways might philosophers or historians of science benefit from your work?
How empirical measurements can support or challenge theories about science?