



ESF SCSS Exploratory Workshop:  
**Evolutionary Economic Geography**  
Cambridge, United Kingdom, 3 - 5 April 2006

## **ESF Exploratory Workshop on Evolutionary Economic Geography, St Catharine's College, University of Cambridge** **ESF Award: EW05-253(SCSS)**

**Convenors: Professor Ron Martin and Professor Ron Boschma**

### **SCIENTIFIC REPORT**

#### **1. Executive Summary**

- ***Motivation of the Workshop***

Over the past few years, a new sub-discipline of Evolutionary Economic Geography has begun to emerge that seeks to understand the economic landscape – the geographical organization and development of industry, technology and institutions – using the ideas and concepts from evolutionary economics (itself a new and still embryonic field of academic enquiry). Thus far this work remains scattered and disparate, but has now gained sufficient momentum to benefit from a meeting of minds, in the form of an Exploratory Workshop that brings together the leading pioneers in the subject in order to exchange ideas, consolidate theoretical and analytical concepts, and to present empirical findings; in short to begin to construct a research paradigm. This was the motivation behind the Workshop.

- ***Aims of the Workshop***

The aim of the Workshop was basically threefold:

- To define and explore the considerable potential of applying (different variants and approaches of) evolutionary economic theory to key topics and issues in economic geography
- To bring together the growing number of scholars, both established and young (economic geographers, regional economists, evolutionary economists) who are involved and interested in this exciting yet still embryonic field of Evolutionary Economic Geography.
- To explore how the collective enterprise represented by the Workshop could be taken further, particularly in the form of a major publication and setting up a European network of interested scholars in the field.

- ***Contributors to, and Organisation of, the Workshop***

To this end some 22 scholars – from the disciplines of economic geography, economics, and business and technology studies - drawn from seven nations, came together for a two day Workshop in St Catharine's College, University of Cambridge, to present original research papers in topics relating to Evolutionary Economic Geography. Each paper was followed by a dedicated discussion, so that ample time was devoted to questions, answers and debate. The Workshop was marked by a very high level of presentation and discussion.

- ***Scientific Content and Achievements***

The contributions to the Workshop were grouped into four main themes. The first was concerned with exploring different (but complementary) theoretical frameworks and perspectives. Interest focussed on the scope and limits of neo-Schumpeterian, neo-Darwinian, co-evolutionary and path dependence approaches. The task was seen a dual one: of not only examining how such approaches can help to explain the evolution of the spatial structures and forms of the economy over time, but equally to

demonstrate how space, location and space shape the processes of economic evolution. The papers in this session stimulated considerable discussion.

Against this background, the second group of papers focused on the role of innovation in the evolutionary dynamics of regions and cities. Innovation is one of the key drivers of economic evolution. These papers showed emphatically how the process of innovation is itself strongly spatially localised and embedded, indicating that to understand innovation requires careful exposition of the ways in which it is 'place dependent'. How local innovation systems and networks emerge and develop, and how these influence regional and local economic growth, were agreed to be important components of the research agenda of evolutionary economic geography.

Third, another key theme related to the role of path dependence in shaping the evolution of the economic landscape. Using empirical examples, interest here was on relationship between local path dependence, localised increasing returns, and the co-evolution of innovation systems and local institutional arrangements and structures. A key issue for further work is why it is that some regions and localities become 'locked-in' to particular development paths whereas others are able to avoid lock-in and 'reinvent' themselves (ie adapt successfully to changing market, technology and related conditions).

The fourth set of contributions were concerned with the creation and transfer of knowledge, and the learning processes associated with these processes. It is becoming established that knowledge flows are also often spatially localized, implying that different areas may therefore exhibit different economic-technological evolutionary trajectories. Compelling empirical evidence was presented in the papers in this session that spatially proximate inventors have distinct advantage over distant actors for acquiring and applying complex knowledge, with consequent implications for why certain localities are able to develop and attract concentrations of innovative, creative and entrepreneurial individuals and firms.

This issue related to the final set of papers that focused on the evolution of local business clusters. Though much has been written in recent years about business clusters, and how they can enhance local economic competitiveness and technological innovation, relatively little is known about such clusters evolve over time. The aim of the papers in this session was to apply some of the ideas of evolutionary economic geography to this question. The concepts of co-evolution and emergence were highlighted as being of central importance to the development of a theoretical framework for analysing cluster evolution and cluster life-cycles.

All of the papers presented new conceptual and empirical findings, and taken together were considered by all those present to mark a significant contribution to the construction of the research agenda of Evolutionary Economic Geography. The exploratory nature of the Workshop was felt to have produced highly fruitful exchanges and synergies between the participants, and between evolutionary economic geographers on the one hand and evolutionary economists on the other.

- **Future Developments**

There was considerable enthusiasm amongst participants for producing some major collected publications from the papers and discussions of the Workshop, and for maintaining close academic contact and collaboration. Since the Workshop, two major publications have been agreed. First, a special issue of the *Journal of Economic Geography*, on Evolutionary Economic Geography, containing six papers based on those given at the Workshop, will appear in September 2007. Second, a major book contract has been signed with Edward Elgar for a *Handbook of Evolutionary Economic Geography*; this will contain some 23 chapters based on the papers presented at the Workshop, and is due to be submitted in summer 2007. These two publications should have a major impact in promoting the field of Evolutionary Economic Geography, and testify to the success of the Workshop, and the continuing contact and collaboration amongst those who contributed to it.

## 2. Scientific Content

The Workshop was organized into five main sessions (plus an introductory session by the convenors and Professor Alkan; and a concluding session on future plans, by the two convenors). The main themes addressed by and the scientific contributions of the main five sessions can be usefully summarized as follows.

### ***Establishing a Theoretical Foundations of Evolutionary Economic Geography***

To provide the framework for the Workshop, in the first session three papers sought to establish the conceptual and theoretical foundations of the new paradigm of evolutionary economic geography. The first was a key paper by **Boschma and Koen** that showed how an evolutionary approach to economic geography differs from and has distinct advantages over other approaches to the subject. Building on this, in his paper **Essletzbichler** took three key concepts from evolutionary theory (selection, variety and inertia), and suggested how these could be interpreted and used in economic geography, using regional industrial development to illustrate his argument. **Martin and Sunley** then presented a detailed critical discussion of the concept of path dependence – argued by some to be a fundamental principle of evolutionary economics – and discussed how far and in what ways the notion might be used to understand the evolution of the economic landscape; they raised the interesting conjecture that many of the processes involved in path dependence, path creation and path destruction are themselves ‘place-dependent’. These three papers generated considerable and extended discussion and debate, and provided an excellent initial session for the rest of the Workshop.

### ***Innovation and Evolution: Spatial Implications***

Against this background, the next three papers focused on the role of innovation in the evolutionary dynamics of regions and cities. In his paper, **Cantner** demonstrated how the evolution of innovator networks - the patterns of cooperation, collaboration and knowledge spillover amongst entrepreneurs, in this case amongst firms in Jena – tends to lead to an increasing concentration, and specialisation, of innovators at the core of the network. Both **Verspagen** and **Simmie** in their papers showed how local and regional systems of innovation can exert a major influence over whether patterns of regional and urban economic growth converge or diverge over time. The discussions of these papers likewise generated a lively debate over the interplay of theory method and evidence in evolutionary economic geography. This discussion in turn provided an excellent basis for the next theme addressed by the Workshop.

### ***Path dependence, Co-evolution and Regional Development***

Building on the earlier work of authors such as Arthur and Glaeser, **Dosi's** paper developed a theoretical model of how economic activity tends to become spatially agglomerated over time. This was shown to provide a good representation of the regional development of Italian industry. In her contribution, **Strambach** demonstrated how the co-evolution of innovation and governance institutions has played an important role in shaping regional path dependence in the development of the German software industry. Together, these two papers opened up an interesting debate about path dependence and the different types of increasing returns involved in the spatial agglomeration of industry.

### ***Networks and Knowledge Flows***

The creation and transfer of knowledge, and the learning processes associated with these processes, are often seen as central to how economic systems evolve. It is becoming established that knowledge flows are also often spatially localized, implying that different areas may therefore exhibit different economic-technological evolutionary trajectories. The three papers in this session were concerned with this issue. **Sorensen** presented compelling evidence, using patent data, that spatially proximate inventors have distinct advantage over distant actors for acquiring and applying complex knowledge. In his paper, **Glückler** showed how knowledge networks through which knowledge transfers occur themselves evolve organisationally and spatially with changes in technology. Localised technological knowledge would thus seem to be an essential for any realistic theory of the firm, as argued by **Antonelli**, in his paper.

### ***Spatial Clustering***

Though much has been written in recent years about business clusters, and how they can enhance local economic competitiveness and technological innovation, little is known about such clusters evolve over time. This was the focus of the four contributions to this session. **Maskell and Malmberg** set out some of the conceptual arguments for thinking about clusters in evolutionary terms, while the applied papers by Cooke and by **Guiliani**, respectively on firm performance and business networks within clusters, provided useful empirical evidence that while clustering may well enhance knowledge transfers and innovation amongst firms, we need more information on how these attributes, and their implications for the profitability of firms, change over time and space, and compare to similar firms outside clusters. These questions are important, for as **Asheim** argued in his paper, the evolutionary dynamics of clusters carry major implications for the design of policies to construct regional economic and technological advantage.

## **3. Assessment of the Workshop, Outputs and Future Direction of the Field**

The final session of the Workshop was devoted to a discussion of future plans, on two main fronts: publication outputs of the Workshop, and establishing a European Network on Evolutionary Economic Geography. The participants were unanimous that the Workshop had been highly successful, and highly productive; that it was the first time economists, geographers and other social scientists interested in exploring the scope of an evolutionary perspective on the economic landscape had come together in this way. The range and quality of the papers was such that a major publication is certainly a realistic goal. Opinion was divided as to whether this should be a book or a special issue of a journal. The convenors agreed to explore these options (with Oxford University Press, and the *Journal of Economic Geography*) and then report back to the delegates. An offer of a double special issue of *Economics of Innovation and Technology* was made by its editor Professor Antonelli. The possibility of a European Network was also debated, and it was agreed that the convenors would explore the setting up of a website for a virtual network which would list scholars and their work, and which could be used as a vehicle for discussion of research in evolutionary economic geography. It was also agreed to explore the possibilities of future Workshops of the group, at various locations across Europe.

## **4. Final Programme**

### **Monday 3 April 2006**

Morning      *Arrival*

#### **Session 1: Welcome and introduction**

- 14.00-14.15      **Presentation of the European Science Foundation (ESF)**  
**Ahmet Alkan** (Standing Committee for the Social Sciences)  
*Opening Remarks*
- 14.15-14.30      **Ron Martin and Ron Boschma**  
**Introduction to the Workshop**

#### **Session 2: Theoretical Foundations of Evolutionary Economic Geography (Discussants: Peter Maskell and Erik Stam)**

- 14.30-16.00      **Ron Boschma and Koen Frenken**  
*Defining the Scope of Evolutionary Economic Geography*  
**Discussion**

**Jurgen Essletzbichler and David Rigby**  
*Exploring Evolutionary Economic Geographies*  
**Discussion**

16.00-16.30 *Tea Break (in Hall)*

16.30-17.30 **Ron Martin and Peter Sunley**  
*Path Dependence and Regional Economic Evolution*  
**Discussion**

19.30 *Dinner (in the Old Combination Room)*

## **Tuesday 4 April 2006**

### **Session 3: Innovation and Evolution: Spatial Implications (Discussant: Olav Sorensen)**

09.30-11.00 **Bart Verspagen**  
*The European Innovation System and the New Member States. A Regional Perspective*  
**Discussion**

**James Simmie**  
*New Technological Regimes and their Spatial Evolution. Theory and Application to English Cities*  
**Discussion**

11.00-11.30 *Coffee break (In Hall)*

### **Session 4: Path Dependence, Co-evolution and Regional Development (Discussant: Bart Verspagen)**

11.30-13.00 **Giulio Bottazzi, Giovanni Dosi, Giorgio Fagiolo and Angelo Secchi**  
*Sectoral and Geographical Specificities in the Spatial Structure of Economic Activities*  
**Discussion**

**Simone Strambach**  
*Path Dependence and the Co-evolution of Governance and Innovation: The Case of the German Business Software Sector*  
**Discussion**

13.00-14.30 *Lunch (In the Old Combination Room)*

### **Session 5: Networks and Knowledge Flows (Discussants: Koen Frenken and Antonella Zuchella)**

14.30-16.00 **Uwe Cantner and Holger Graff**  
*Growth, Development and Change in Innovation Networks*  
**Discussion**

**Olav Sorensen, Jan Rivkin and Lee Fleming**  
*Complexity, Networks and Knowledge Flows*  
**Discussion**

- 16.00-16.30 *Tea (In Hall)*
- 16.30-18.00 **Johannes Gluckler**  
*The Evolving Network of Strategic Partnerships in the Market for Stock Photography*  
**Discussion**
- Cristiano Antonelli**  
*Technical Knowledge and the Theory of the Firm. The Role of Idiosyncratic Factors in the Quest for the Economics of Distinctive Competences*  
**Discussion**
- 19.30 *Dinner (In the Old Combination Room)*

## Wednesday 5 April 2006

### Session 6: Spatial Clustering (Discussants: Bent Dalum and James Simmie)

- 09.00-10.30 **Peter Maskell and Anders Malmberg**  
*An Evolutionary Approach to Spatial Clustering and Localized Learning*  
**Discussion**
- Phil Cooke and Carla de Laurentis**  
*Do Clusters Enhance Firm Performance? Evidence from UK ICT and Biotechnology*  
**Discussion**
- 10.30-10.45 *Coffee break (In Hall)*
- 10.45-12.45 **Elisa Giuliani**  
*Uneven Development and Spatial Distribution of Knowledge Networks*  
**Discussion**
- Bjorn Asheim**  
*Constructing Regional Advantage. Talents, Knowledge Bases and Creative Knowledge Environment*  
**Discussion**
- Michael Dahl, Christian Pedersen and Bent Dalum**  
*Entrepreneurial Founder Effects in the Growth of Regional Clusters: How Early Success is a Determinant*  
**Discussion**

### Session 7: The Way Forward

- 12.45-13.15 **Ron Martin and Ron Boschma**  
*Discussion of Future Plans: Research Network and Publications*
- 13.15 *Lunch (In the Old Combination Room)*
- Workshop Closes*
- Afternoon *Departure*

## 5. Final List of Participants

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**6. Statistical Information on Participants**

<b>Age</b>	<b>Male</b>	<b>Female</b>
Less than 35 yrs	3	2
35-50 yrs	8	1
Over 50 yrs	7	
<b>Country</b>		
England	5	
Wales	1	
Netherlands	4	
Denmark	3	
Sweden	1	
Germany	2	1
Italy	2	2