



GÖTEBORGS UNIVERSITET
HANDELSHÖGSKOLAN

Workshop
Evolutionary Approaches 5.0
Tuesday 10th March 2020

Sponsored by the Swedish Research Council
[VR DNR 2017-03360]
Professor McKelvey's Distinguished Professor Programme:
'Knowledge-intensive Entrepreneurial Ecosystems'

Organized by
Maureen McKelvey, Guido Buenstorf and Mark Bagley

The purpose of workshop is to bring together a select group of researchers to discuss and debate current research about Evolutionary Economics 5.0. The title is a play on 5G, and in addition to presenting recent research, the aim is to explore how and where evolutionary economics is relevant in the context of today's social sciences.

Practicalities:

Papers: Please send your papers by Monday 2nd March to mark.bagley@gu.se and Maureen.mckelvey@handels.gu.se

Each paper has a total of 35 minutes. 15 minutes for presentation, followed by 10 minutes for the discussant and 10 minutes for general discussion.

The papers will be available via Dropbox, as they arrive. Only participants of the workshop will have access to the papers.

Everyone needs to register via the link that has been sent to you. This will expedite our administrative processes.

Location: The workshop is Ågrenska Villan, Högåsplatsen 2

Coffee available downstairs

8:45 Opening of workshop by Maureen McKelvey & Guido Buenstorf

Chair: Guido Buenstorf

9:00-9:35 Paper to be presented by Maureen McKelvey

“How do networks affect knowledge generation for drug development? – A Study of Investigator Networks and Knowledge Domains”

by Bastian Rake (Maynooth University), Pablo D'Este (Technical University of Valencia), Maureen McKelvey (University of Gothenburg) and Anne Assmus (University of Passau)

The ongoing debate on the contribution of structural holes for the generation of knowledge has, so far, largely been focused on the structural characteristics of social networks, while most of the existing literature has not paid much attention to the characteristics of network partners. We address this gap in the literature by taking the interplay between network structure and actor diversity in terms of actors' knowledge domains in the context of the development stage of the pharmaceutical innovation process into account. The empirical analysis builds upon a dataset of co-memberships in clinical trial investigator teams and scientific publications. Using an instrumental variable approach for Burt's constraint as indicator for the presence of structural holes, our results support literature arguing that more cohesive network structures support publication activities related to clinical trials. In the context of our study, the results indicate that rather homogeneous teams in terms of knowledge domains produce more trial-related publications than more diverse teams. Beyond general implications concerning the interplay between network structure and actor characteristics, these findings have important implications for the composition of investigator teams as well as for the emerging concept of translation research intended to promote knowledge generation and innovative activities in these industries.

Discussant: Roman Martin

9:35-10:10 Paper to be presented by Martin Henning

“The impact of foreign firm ownership on local renewal activities and processes”

*by Martin Henning, Ramsin Yakob, Claes Alvstam, Richard Nakamura and Inge Ivarsson
(University of Gothenburg)*

This study investigates the extent to which the transition into foreign ownership of manufacturing firms in Sweden affects the conditions for strategic renewal activities and processes at the firm’s original locations. This study draws on extensive studies of public documents, site visits and interviews covering 39 firms (22 interviewed) in two firm categories; currently Swedish owned and formerly Swedish owned manufacturing firms.

Results show how foreign ownership of Swedish manufacturing firms has increased significantly, but Swedish manufacturing firms have also been very active in acquiring companies abroad. Our survey shows the enormous complexity and the highly advanced international division of labor under which today’s manufacturing activities in Sweden operate. For instance, many of the studied companies have grown to belong to the very best, or developed leading specializations, within their niches. This is a reflection of their increasing integration into the international economy and its global value chains.

Overall, the empirical analyzes show that the integration of Swedish industrial operations into foreign owned international and global business structures has not, so far, affected the conditions for strategic renewal work in Swedish manufacturing firms negatively. Rather, the foreign-owned manufacturing firms have been able to secure new resources for renewal, in combination with the capabilities already located at their local original sites. However, we also find that companies with products and capabilities for strategic renewal that are more mobile and less unique tend to diverge from our main conclusion. These more often find themselves under the heavier yoke of price competition. In many ways, the Swedish-owned firms in our sample appear almost more internationalized in their production and renewal activities, than those under foreign ownership.

Discussant: Elena Mas Tur

10:10 Coffee Break

10:30-11:05 Paper to be presented by Oscar Llopis

“Connecting strangers: does *tertius iungens* shape the relationship between structural separation, institutional separation and innovation?”

by *Oscar Llopis (University of Valencia), Pablo D’Este (Technical University of Valencia), Adrián A. Díaz-Faes (Technical University of Valencia)*

Research on social networks and innovation emphasizes that individuals spanning structural holes and crossing institutional boundaries through their personal networks are better in new knowledge creation. However, transforming the potential knowledge and resources embedded in separated networks to attain innovation is often challenging for the focal individual. This study examines whether, and to what extent, the individual strategic behavioral orientation toward connecting others (i.e. *tertius iungens*) contributes to strengthen the relation between two network properties (structural and institutional separation) and innovation. Our findings advance social network theory by decoupling social network mechanisms from individual agency as factors influencing knowledge generation processes. They also provide original evidence on an overlooked phenomenon: the moderating role of a *tertius iungens* orientation to the relationship between social network properties and innovation. Finally, our research sheds new light on the distinct sources of knowledge recombination in networks and the role of individual agency to mobilize network resources for innovation, with a particular reference to the biomedical research context.

Discussant: Nathalie Lazaric

11:10 Panel by Guido Buenstorf, Martin Henning, Nathalie Lazaric, and Maureen McKelvey

Each has 7 minutes, followed by a more general discussion.

12:15 Lunch

Chair: Maureen McKelvey

13:30-14:05 Paper to be presented by Nathalie Lazaric

“The effortful process of routines emergence: The interplay of entrepreneurial actions and artefacts”

by *Aura Parmentier (Université Côte d’Azur), Nathalie Lazaric (Université Côte d’Azur and The University of Gothenburg), Giovany Cajaiba-Santana (KEDGE Business School)*

Although several calls have been made for the processual analysis of creation of routines, little was done to understand the entrepreneurial mechanisms that explain the creation and adoption of new routines. This paper contributes to the processual study of organisational routines by providing a model of routine creation based on the analysis of collective entrepreneurial actions.

Using the lens of entrepreneurial bricolage, we show how agents develop mechanisms to adapt firm process, enact external constraints and validate novel practices through dialogues and artefacts to create new routines. Our analysis is based on a 3-year collaborative study carried out in a French biotechnological firm. We elaborate a processual model of routine creation that is structured in three phases: scanning, performing and adopting. The model provides new insights on the interplay of artefacts and entrepreneurial actions in the creation of new routines.

Discussant: Johan Brink

14:05-14:40 Paper to be presented by Guido Buenstorf

“Doctoral Training outside the University: Public Research Institutes, Industry and Human Capital Formation in the German System of Research and Innovation”

by Guido Buenstorf (University of Kassel and The University of Gothenburg), Johannes Koenig (University of Kassel), Anne Otto (IAB Institute for Employment Research)

Defying global trends, non-university public research organizations (PROs) continue to be key players in Germany’s research landscape. As part of their activities, they provide the work environment for large numbers of PhD students who are then graduated by universities. Similarly, private-sector firms employ substantial numbers of industrial PhD students. Both PROs and the private sector thus help provide human capital for the German system of research and innovation, even though their contribution has been difficult to assess due to limited data availability. In this paper, we employ a unique dataset based on a large-scale record linkage approach to trace how the roles of PROs and firms in doctoral training developed over the past two decades. Our results for about 50,000 STEM PhDs graduated from 1995 to 2013 indicate that across cohorts, increasing shares of STEM PhDs remain employed in academia upon graduation. This trend is accompanied by diminishing shares of PhDs obtaining high incomes, and it is even more pronounced for PhDs who did their dissertation research at PROs. In contrast, we observe a low and over time decreasing probability of industrial PhDs to migrate into academia. Despite reforms aimed at increasing the vertical differentiation of the university sector, our data do not suggest an increasing premium of being trained at top-tier universities. We also study the attainment of leadership and research positions and analyze a subsample of regionally immobile PhDs to explore how strategic location choices relate to the observed patterns.

Discussant: Ethan Gifford

14.40 Coffee

Chair: Daniel Ljungberg

15:00-15:35 Paper to be presented by Rögnvaldur Saemundsson

“Co-evolution of medical and engineering knowledge”

by Rögnvaldur Saemundsson (University of Gothenburg, University of Iceland)

Recent research on medical innovation has stressed the importance of interaction across different knowledge fields, where special attention has been given to the role of clinical practice and its mutual interaction with biomedical science. Furthermore, the interactive nature of the relationship between technological advances, biomedical science, and clinical practice is often acknowledged. However, there is limited knowledge of how the development of the various subfields of engineering, collectively labeled as biomedical engineering, are related to the growth of medical knowledge. The purpose of this paper is to address this gap by developing a conceptual framework for studying the co-evolution of medical and engineering knowledge. In doing so the aim is not only to complement existing studies that focus on the interaction between clinical practice and biomedical science but to take a step towards a comprehensive evolutionary framework for understanding the growth of knowledge in health care.

Discussant: Oscar Llopis

15:35-16:10 Paper to be presented by Elena Mas Tur

“Essentially IoT: Standard Essential patents and their challenges and opportunities.”

by Elena Mas Tur (Eindhoven University of Technology)

Discussant: Mark Bagley

16:10 Wrap-up and Conclusions

16:30 Workshop ends

Workshop Participants

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