
ISS Forum

The Newsletter of the
International Joseph A. Schumpeter Society

Dear Member of the International
Joseph A. Schumpeter Society

Like any other even numbered year since 1986 the year 2002 will also see a conference of our Society. So this issue of the newsletter ISS Forum is largely dedicated to the communication of the program of the Gainesville conference. For those of you who will attend it is a guidepost to direct your expectations. For those of you who are not able to join us in Florida the program as it stands now will give you an impression what the issues of the conference will be about. It will give you an impression of the diversity of topics to be discussed at the 9th ISS conference.

This issue also covers reports of conferences that were held in association with the Schumpeter Society or in topical proximity to the Society. We have an extended report on both the EMAEE conference that was held in September 2001 in Vienna, and the DRUID Nelson and Winter Conference that took place in Ålborg in June 2001.

As we were notified about the passing away of Herbert Alexander Simon in early 2001, we approached Massimo Egidi and asked for an obituary. Massimo's response was immediate and positive, and so we have an extraordinary scientific and personal view on a scientist whose influence on our science cannot be exaggerated. We are also indebted to Mark Perlman, who contributed his thoughts on one of the 2001 Nobel Prize laure-

ates Joseph Stiglitz a quondam member of the Society.

At this point let me thank all the contributors of this issue for their kind efforts that make this newsletter a forum in the sense of its ancient meaning. Speaking of contributions: We invite all members of the Society to participate in the generation of the Forum and to submit whatever might be interesting to the other members or whatever may be communicated to the Society. Please send material to the address given below in the Forum Contact section.

As in the last issue, this forum contains references to a number of internet sites. We have set up a page where all sites mentioned in this issue are listed for convenient access. The page can be found at the homepage of the Schumpeter Society at
www.wiwi.uni-augsburg.de/vwl/hanusch/iss/index.html

To those of you who want to renew your membership, please find the payment form on the back cover of this newsletter.

The president and the officers of the Society are really looking forward to meeting many of you in Gainesville soon.

Yours
Horst Hanusch

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Forum Contact

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Preliminary Program of the 9th ISS Conference

March 28-30, 2002, Gainesville, Florida, USA

Below please find the preliminary program with the accepted papers for the upcoming conference:

“ENTREPRENEURSHIP, THE NEW ECONOMY AND PUBLIC POLICY: SCHUMPETERIAN PERSPECTIVES”

The date and time of each session, as well as the chairs will be determined in the near future.

Plenary Sessions

Plenary Session I: Joseph A. Schumpeter

- Paul Samuelson (Nobel Laureate, MIT): Reflections on the Schumpeter I knew Well.

Plenary Session II: Industry Evolution and Geographic Distribution of Economic Activity

- Olaf Sorenson (UCLA): Social Networks and the Geography of Entrepreneurial Activity
- Peter Thompson (Carnegie Mellon University, Pittsburgh): Pre-entry Experience and the Immobility of Entrepreneurs: Shipbuilding in the 19th Century
- Steven Klepper (Carnegie Mellon University, Pittsburgh): How Detroit Became the Automobile Capital of the United States

Plenary Session III: Schumpeterian Growth Theory

- Elias Dinopoulos (University of Florida, Gainesville): Schumpeterian Unemployment Dynamics
- Sam Kortum (University of Minnesota, Minneapolis): Innovating Firms and Aggregate Innovation

Parallel Sessions

Parallel Session 1: Entrepreneurship Theory

- Thomas Grebel, Andreas Pyka, and Horst Hanusch (University of Augsburg): An Evolutionary Approach to the Theory of Entrepreneurship
- Zoltan Acs (University of Baltimore) and Ronnie J. Phillips (Colorado State University, Fort Collins): Entrepreneurship and Philanthropy in American Capitalism
- Harry F. Dahms (Florida State University, Tallahassee): Schumpeter's Theory of Entrepreneurship as a Contribution to Economic Sociology: Laying the Foundation for a Dynamic Theory of Modern Capitalism

Parallel Session 2: Entrepreneurs. Evidence

- Liisa Lintunen (Helsinki Business Polytechnic) and Arto Lahti (Helsinki School of Economics): Does Schumpeterian Entrepreneurship Accomplish Creative Destruction Among ICT-Firms in Finland?
- Massimo G. Colombo (University of Pavia) and Marco Delmastro (Autorità Garante della Concorrenza e del Mercato, Rome): What Drives Growth of New Technology-Based Firms? A Resource-Based View
- Thomas Åstebro and John Michela (University of Waterloo): Why do Entrepreneurs Pull the Plug on Their Innovations?

Parallel Session 3: Is There a New Economy?

- Amir Pirich (NZ Ministry of Economic Development, Wellington), Amanda Tullet (NZ Ministry of Economic Development, Wellington), Kenneth I. Carlaw (University of Canterbury, Christchurch), and Dan Marsh (University of Waikato, Hamilton): A New Zealand Perspective on the New Economy
- Bo Carlsson (Case Western Reserve University Cleveland): The New Economy: What Is New and What Is Not?
- Mario Amendola (University of Roma La Sapienza) and Jean-Luc Gaffard (University of Nice-Sophia Antipolis): 'New Economy' and Growth: The Market Co-ordination of the Process of Innovation

Parallel Session 4: What is New in the "New" Economy?

- Tina Brandt Husman (Copenhagen Business School): The Project Organisation and its Conditions in the New Economy
- Gunnar Eliasson (Royal Technical University, Stockholm), Dan Johansson (Royal Technical University, Stockholm), and Erol Taymaz (Middle East Technical University, Ankara): Simulating the New Economy
- William Kingston (Trinity College, Dublin): Money, Not Time, to Measure Intellectual Property

Parallel Session 5: Old Rules for the New Economy

- Jani Saarinen (Lund University): Schumpeter's Mark I Patterns of Innovation: A Study of New Economy Firms in the Finnish Context
- Gunnar Eliasson (Royal Technical University, Stockholm) and Claus Wihlborg (Copenhagen

Business School): On the Macroeconomic Effects of Establishing Tradability in Weak Property Rights

- Lucia Piscitello and Francesca Sgobbi (Politecnico di Milano): SMEs' Responses to the New Economy: Evidence from Selected Italian Districts

Parallel Session 6: Schumpeter in Historical Perspective I

- Mariano Alierta (Zaragoza): Historical Increasing Returns: Some Aspects
- Chitro Majumdar (New Delhi): Schumpeterian Perspectives on Economic Development
- Warren P. Hogan (University of Technology, Sydney): Precursor to Schumpeter: A. G. B. Fisher

Parallel Session 7: Schumpeter in Historical Perspective II

- Larry Udell (West Chester University): Capitalism, Socialism, Democracy and the Open Society: A Tale of Two Books
- Manuel Santos-Redondo (University Complutense, Madrid): Why was Schumpeter Sympathetic Towards the Japanese Economic System?
- Ulrich Witt (Max Planck Institute for Research into Economic Systems, Jena): How Evolutionary is Schumpeter's Theory of Economic Development?

Parallel Session 8: Lost and Found Schumpeterian Insights

- Markus C. Becker and Thorbjørn Knudsen (University of Southern Denmark, Odense): Schumpeter 1911: Farsighted Visions on Economic Development

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- John A Mathews (Macquarie University, Sydney): An Evolutionary Theory of the Economy as a Whole: Reflections on Schumpeter's 'Lost' Seventh Chapter to The Theory of Economic Development

Parallel Session 9: Evolutionary Economic Models

- Maria Derengowski Fonseca, Patricia Zendron, and Rodrigo Zaindan (Federal University of Rio de Janeiro) Methodology and Models: In Search of Evolutionary Micro Foundations
- Andreas Jonason (Royal Institute of Technology, Stockholm) Innovative Pricing in the Experimentally Organized Economy
- Roberto Gabriele (Sant'Anna School of Advanced Studies) How to Cope with Labor Market Dynamics and Institutions: An Evolutionary Approach

Parallel Session 10: Evolutionary Economic Systems

- Magnus Holmén and Maureen McKelvey (Chalmers University of Technology, Göteborg): Technological Novelty and Renewal in Economic Systems: Systematic Studies
- Maria Brouwer (University of Amsterdam): Cities and Empires: The Ebb and Flow of Globalization
- Uta-Maria Niederle (Max Planck Institute for Research into Economic Systems, Jena): From Possession to Property: Preferences and Change

Parallel Session 11: Firm Dynamics and Evolution

- Richard Langlois (University of Connecticut, Storrs): The Vanishing Hand: The Modular Revolution in American Business

- Arthur Cesar Vasconcelos Koblitz and Esther Dweck (Federal University of Rio de Janeiro): Innovators and Imitators Competition Under Different Selection Environments
- Nils Stieglitz and Klaus Heine (Philipps-University Marburg): Innovation and the Strategic Role of Complementarities in the Theory of the Firm

Parallel Session 12: Industry Evolution and Firm Performance

- Oriatta Marsili (Eindhoven Centre for Innovation Studies) and Ammon Salter (University of Sussex): The Innovation Performance of Design-Intensive Firms: Evidence from Dutch Manufacturing
- Marco Giarratana (Sant'Anna School of Advanced Studies, Pisa): Entry, Surviving, and Growth in a New Market: The Case of the Encryption Software Industry
- Uwe Cantner and Jens J. Krüger (Friedrich-Schiller University Jena): Technological and Economic Mobility in Large German Manufacturing Firms

Parallel Session 13: Market Structure Evolution

- Paul Ormerod, Bridget Rosewell, and Laurence Smith (Volterra Consulting, London): The Dynamic Evolution of Market Structure and Competition
- Vivek Ghosal (Georgia Institute of Technology, Atlanta): Impact of Uncertainty and Sunk Costs on Firm Survival and Industry Dynamics
- Kenneth L. Simons (University of London): Product Market Characteristics and the Industry Life Cycle

Parallel Session 14: Public Policy and Technological Progress

- Leonardo Burlamaqui (Candido Mendes University, Rio de Janeiro): Public Policy for the New Economy: Innovation and Creative Destruction Management Policies
- Morris Teubal (The Hebrew University, Jerusalem): What is the Systems Perspective to Innovation and Technology Policy (ITP) and how Can We Apply It to Developing and Newly Industrialized Economies?
- Joachim Schwerin and Claudia Werker (Eindhoven University of Technology): Seventeen Stylized Facts on Innovation, Technological Change, and Growth: Guidelines for Learning Economic Policy

Parallel Session 15: Innovation Policies

- Neil Orkin (Drexel University, Philadelphia): Democratizing the Czech Employee Invention Statute
- Marianne Paasi and Sean O'Reagan (European Commission, DG Research, Brussels): Collective Research and Innovation Policy Learning: Rationale and Principles for International Benchmarking
- Georg Erdmann and Christian Sartorius (Technical University of Berlin): Time Strategies in Environmental Innovation Policy

Parallel Session 16: Innovation Systems in Europe

- Pooran Wynarczyk (Newcastle University) and Peter Wynarczyk (University of Northumbria): Turning Schumpeterian Theoretical Insights into Public Policy Action: Fostering Entrepreneurship and Innovation Through European Business and Innovation Centres (EuBICs) in Less Favoured Regions of Europe

- Koen Frenken (Utrecht University): The Geography of Collaborative Knowledge Production: Entropy Techniques and Results for the European Union
- Patrick Llerena and Mireille Matt (University Louis Pasteur, Strassbourg): External and Internal incentives to Organise Interdisciplinary Research at the University Louis Pasteur (ULP)

Parallel Session 17: Public and Private R&D

- James D. Adams (University of Florida, Gainesville): Comparative Localization of Academic and Industrial Spillovers
- Robert Ronstadt and Sten Thore (University of Texas, Austin): The Growth of Commercialization-Facilitating Organizations: A Schumpeterian Perspective
- Welsey M. Cohen (Carnegie Mellon University, Pittsburgh), Richard R. Nelson (Columbia University, New York), and John P. Walsh (University of Illinois at Chicago): Links and Impacts: The Influence of Public Research on Industrial R&D

Parallel Session 18: Outsourcing and Internationalization

- Hans Löf (Royal Institute of Technology, Stockholm). A Schumpeterian Perspective on Outsourcing, Entrepreneurship Innovation, and Productivity
- Heinz Hollenstein (Swiss Federal Institute of Technology, Zurich): Patterns and Determinants of International activities: Are SMEs Different?
- Selin Sayek (Bentley College,) and Fuat Sener (Union College, Schenectady): Dynamic Effects of Outsourcing on Wage Inequality and Skill Formation

Parallel Session 19: Globalization, Innovation and Growth

- Dengjian Jin (Dickinson College, Carlisle): Two Types of Technology Fusion: Sectoral Knowledge Structure and National Competitiveness in the New Economy
- Keld Laursen (Copenhagen Business School) and Ammon Salter (University of Sussex): The Fruits of Intellectual Production: Economic and Scientific Specialisation Among OECD Countries
- Elias Dinopoulos (University of Florida, Gainesville) and Constantinos Syropoulos (Florida International University, Miami): Globalization and Scale-Invariant Growth

Parallel Session 20: Information and Communication Technology

- Dilek Cetindamar (Sabanci University, Istanbul) Fostering Entrepreneurship: Lessons from the Turkish Information and Communication Industry
- Dan Johansson (Royal Institute of Technology, Stockholm): The Turnover of Firms and Industry Growth
- Keneth Simons (University of London): Information Technology and the Dynamics of Firm and Industrial Structure: The British IT Consulting Industry as a Contemporary Specimen

Parallel Session 21: Innovation in the Service Economy I

- Stefano Brusoni, Rachel Cutts, and Aldo Geuna (University of Sussex): Future Imperfect: Competence-Building in the Insurance Industry in Response to Predictive Genetic Testing
- Gary A. S. Cook (University of Loughbor-

ough) and Naresh R. Pandi (University of Manchester): Clustering and Innovation Under Deregulation: Insights from the British Broadcasting and Financial Services Industries

- Aija Leiponen (Cornell University, Ithaca): Innovation in Business Services: Implications for the Management of Supply Relationships

Parallel Session 22: Innovation in the Service Economy II

- Ina Drejer (Ministry of Economic and Business Affairs, Copenhagen): Identifying Innovation in a 'Service Economy'
- Christianne Hipp (Technical University of Hamburg-Harburg) and Hariolf Grupp (University of Karlsruhe): Innovation in the Service Sector: Definition Problems and Empirical Opportunities
- Birgitte Andersen and Marva Corley (University of London): The Theoretical, Conceptual, and Empirical Impact of the Service Economy: A Critical Review

Parallel Session 23: Innovation Systems

- Hariolf Grupp (University of Karlsruhe), Iciar Dominguez-Lacasa (Fraunhofer Institute for Systems and Innovation Research, Karlsruhe), and Monika Friedrich-Nishio (Karlsruhe Technical University): The National German Innovation System: Its Development in the Past 100 Years in Different Governmental and Territorial Structures
- Pier Paolo Saviotti (University of Nice-Sophia Antipolis) and Andreas Pyka (University of Augsburg): Economic Development, Qualitative Change, and Employment Creation

Parallel Session 24: Technology and Innovation Strategies

- Jean Pierre Couderc (Montpellier University of Sciences) and Hervé Remaud (Montpellier School for Agronomic Engineers): Strategic Attitude of the Small Business Manager: A Lever to Create More Value?
- J. A. Cantwell (University of Reading) and G. D. Santangelo (University of Catania): The Boundaries of Firms in the New Economy: The Impact of M&As on Corporate Technological Profiles
- John Hagerdoorn (University of Maastricht) and Nicholas S. Vonortas (George Washington University, Washington): Alliance Cycles

Parallel Session 25: Technology Adoption and Diffusion

- Virginia Acha, David Gann, and Ammon Salter (University of Sussex): Hotfooting Innovation: R&D Strategies for Project-Based Environments
- Irene Bertschek and Helmut Fryges (Centre for European Economic Research, Mannheim): The Adoption of Business-to-Business E-Commerce: Empirical Evidence for German Companies
- Fredrik Tell (London School of Economics and Political Science): Interface Innovation and the Life Cycle of Complex Product Systems: The Case of Electrical Power Transmission

Parallel Session 26: Sectoral Systems of Innovation

- Mariana Mazzucato (Open University, Milton Keynes): Risk, Variety, and Volatility in the PC Industry: New Economy or Industry Life-Cycle?

- Iordanis Petsas (University of Florida, Gainesville): The Dynamic Effects of General Purpose Technologies on Schumpeterian Growth
- Franco Malerba (Bocconi University, Milan): Sectoral Systems of Innovation: Concept, Methodology, and an Application to Europe

Parallel Session 27: Technological Clusters and Growth Regimes

- Deborah Tappi (Max Planck Institute for Research into Economic Systems, Jena): Changing Structure, Keeping Location: Towards a Theory of the Evolution of Local Clusters
- Junfu Zhang (Public Policy Institute of California): Growing Silicon Valley on a Landscape: An Agent-Based Approach to High-Tech Industrial Clusters
- David B. Audretsch (Indiana University, Bloomington) and Michael Fritsch (Technical University of Freiberg): Growth Regimes over Time and Space

Parallel Session 28: Models of Technological Progress

- Guido Buenstorf (Max Planck Institute for Research into Economic Systems, Jena): Sequential Production, Variations in Decomposability, and Technological Change
- Antonia D'Agata (University of Catania): Localised Technical Progress and Choice of Technique in a Linear Production Model
- Cristiano Antonelli (University of Torino): New Technologies, Relative Prices, and Structural Change

Parallel Session 29: Models of Creative Destruction

- Paul Ormerod, Helen Johns, and Laurence Smith (Volterra Consulting, London): Creative Destruction and System Fitness: An Agent-Based Model of Evolving, Fitness Maximising Firms
- Kurt Psilander (Royal Institute of Technology, Stockholm), Nathalie Lazaric and Alain Raybaut (University of Nice-Sophia Antipolis): Knowledge, Hierarchy, and Selection of Routines: An Interpretative Model with Group Interactions
- Bart Los (University of Groningen) and Robert Stehrer (Vienna Institute for International Economic Studies): Product Innovation, Creative Destruction, and Structural Change: A Macro-Evolutionary Approach

Parallel Session 30: Schumpeterian Cycles and Economic Growth

- Michael Peneder (Austrian Institute of Economic Research, Vienna): Structural Change and Aggregate Growth
- Francisco Louca (Technical University of Lisbon): Schumpeter and the New Century: Old Lessons for New Long Cycles
- Masaaki Hirooka (Ryutsu Kagaku University, Kobe): Nonlinear Dynamism of Innovation and Business Cycles

Parallel Session 31: Aggregate Growth: Theory and Evidence

- Majid Taghavi (University of Northumbria): Divided Government and Economic Performance: The U.S. Experience
- Carolina Castaldi (Sant'Anna School of Advanced Studies, Pisa): An Evolutionary Model of International Competition and Growth

- Johannes Fedderke (University of Witwatersrand): Technology, Human Capital, and Growth: Evidence from a Middle Income Country Case Study Applying Dynamic Heterogeneous Panel Analysis

Parallel Session 32: Market Structure and Economic Growth

- Michael A. Landesmann and Robert Stehrer (Vienna Institute for International Economic Studies): Technical Change, Effective Demand, and Economic Growth
- Emmanuelle Fortune (University of Nice-Sophia Antipolis): Technological Innovation and Learning-by-Doing Relations in Endogenous Growth Models: Limits and New Visions
- Amy Glass (Texas A&M University, College Station): Substitution and Returns to Scale in R&D

Parallel Session 33: International Competition

- Dilek Demirbas (University of Northumbria at Newcastle): Biotechnology Industry with Theory and its Future in a Global World
- Shi Young Lee and Sung Hee Jun (Chung-Ang University, Seoul): On the In Terrorem Effect of the U.S. Anti-Dumping Petition Filings
- Sule Ozler (UCLA) and Erol Taymaz (Middle East Technical University, Ankara): Dynamics of Competition and Foreign Direct Investment: Entry, Exit, and Growth of Foreign and Local Establishments in Turkish Manufacturing

Parallel Session 34: Dynamic Strategies in Network Environments

- Kouhei Iyori (Kobe University): The Emergence of Cooperative Behaviour in Prisoner's

Dilemma Network

- J. M. Dalle (ENS Cachan) and V. Mangematin (INRA/SERD-UPMF, Grenoble): Industry Life Cycle, Organisation Learning through Structured Network, and Public Policy in Favor of Start-Ups and Innovation
- Natalie Lazaric (Latapses-CNRS-University of Nice) and Allain Raybaut (Latapses-CNRS-University of Nice): Knowledge, Hierarchy and Selection of Routines: An Interpretive Model with Group Interactions

Parallel Session 35: Market Formation and Evolution

- Nariaki Nishino (Kobe University), Sobei H. Oda (Kyoto Sangyo University), and Kanji Ueda (Kobe University): The Role of Intermediaries in Recycling Markets
- Michael Fritsch and Oliver Falck (Technical University of Freiberg): New Firm Formation over Industry, Space, and Time: A Multi-Level Analysis for Germany
- Bernd Ebersberger, Horst Hanusch, and Andreas Pyka (University of Augsburg): A Con-

ceptual Framework to Model Long-Run Qualitative Change in the Energy System

Parallel Session 36: Financial Markets

- Brian J. Loasby (University of Stirling): Options and Evolution
- Elias Dinopoulos (University of Florida, Gainesville) and Douglas Waldo (University of Florida, Gainesville): Gorillas in Finance
- Gunnar Eliasson (KTH, Stockholm) and Asa Eliasson (IBMP CNRS Strasbourg): Strategic Acquisitions, Efficient Capital Markets and Economic Growth: Performance Differences between Europe and the United States

Parallel Session 37: Theories for the New Economy

- Jim Stewart (Trinity College, Dublin) Capital Theory in the New Economy: A Schumpeterian Perspective
- Stan Metcalfe (University of Manchester) and John Foster (University of Queensland, Brisbane) On Endogenous Growth

9th ISS Conference Gainesville, FL Contact & Information

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- <http://bear.cba.ufl.edu/dinopoulos> and
- <http://www.wiwi.uni-augsburg.de/vwl/hanusch/iss/index.html>

Selected Recent Publications by Members of the ISS

ACS, Zoltan, *Innovation and the Growth of Cities*, forthcoming. June 2002, Edward Elgar.

ANDERSEN, Birgitte, Jeremy HOWELLS, et al. (eds), *Knowledge and Innovation in the New Service Economy*, 2000, Edward Elgar.

ANDERSEN, Birgitte, *Technological Change and the Evolution of Corporate Innovation. The Structure of Patenting 1890-1990*, 2001, Edward Elgar.

ARUKA, J. (ed.) *Japan Association for Evolutionary Economics*, (2001), "Evolutionary Controversies in Economics. A New Transdisciplinary Approach", Tokyo, Berlin et al., Springer.

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BACKHAUS Jürgen G (2001), *Schumpeter's Contribution to the Economic Theory of Transformation: Entrepreneurship, Style and Vision*, in: ORATI V, S. B. DAHIYA (eds), *Economic Theory in the Light of Schumpeter's Scientific Heritage. Essays in Memory of Schumpeter on his 50th Death Anniversary* (three vols.), Spellbound Publications, Rotak, India.

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BRUNNER, Hans-Peter, "East German International Trade during Transition as Reflection of the Dynamics of Competitiveness." *Eastern Economic Journal*, vol. 27 no. 3 (Summer 2001), pp. 287-308.

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- FAI, Felicia M., Corporate Technological Competence and the Evolution of Technological Diversification, *forthc.* April 2002, Edward Elgar.
- FOSTER J. and J. S. METCALFE (eds.) (2001), "Frontiers of Evolutionary Economics. Competition, Self-Organization and Innovation Policy", Edward Elgar
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- HERRMANN-PILLATH, Carsten, Kritik der reinen Theorie des internationalen Handels.
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- LANGLOIS, Richard and Tony FU-LAI YU (eds), Alternative Theories of the Firm, *forthc.* June 2002, Edward Elgar.
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- LOASBY Brian (2001), Selection Processes in Economics, in: DOPFER K : Evolutionary Economics: Program and Scope , Kluwer Academic Press, 2001, pp. 253-276.
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- MANSELL, Robin., Inside the Communication Revolution. Evolving Patterns of Social and Technical Interaction, Oxford University Press, *forthc.* Jan. 2002.
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ROSENBERG, Nathan (2000), *Schumpeter and the Endogeneity of Technology. Some American Perspectives. The Graz Schumpeter Lectures 3*, Routledge.

SANTANGELO, Grazia D., *Innovation in Multinational Corporations and the Information Age*, forthc. May 2002, Edward Elgar.

SAVIOTTI, Pier Paolo and Bart NOOTEBOOM (eds) (2000), *Technology and Knowledge. From the Firm to Innovation Systems*, Edward Elgar.

SHIONOYA, Yuichi (2000), *The German Historical School. The Historical and Ethical Approach to Economics*, Routledge.

Simpson, David (2001), *Rethinking Economic Behaviour. How the Economy Really Works*, Macmillan Press.

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Recent Books on Evolutionary Economics

Evolutionary Economics: Program and Scope

Dopfer, Kurt (ed) (2001) *Evolutionary Economics: Program and Scope*, Kluwer Academic Publishers, ISBN: 0792373944 .

Contents: Introduction. 1. Evolutionary Economics - Framework for Analysis; K. Dopfer. Foundational Issues. Research Program and Ontology. 2. Evolutionary Economics - An Interpretative Survey; U. Witt. 3. On the Ontologi-

cal Foundations of Evolutionary Economics; C. Herrmann-Pillath. Evolutionary Macroeconomics. Dynamics: Long-run View and Population Thinking. 4. Evolutionary Approaches to Population Thinking and the Problem of Growth and Development; J.S. Metcalfe. 5. Evolutionary Perspectives on Economic Growth; R.R. Nelson. Statics: Division of Knowledge and Valuation Principles. 6. The Evolutionary Principles of American Neoinstitutional Economics; P.D.

Bush, M.R. Tool. 7. Knowledge and Meliorism in the Evolutionary Theory of F.A. Hayek; R. Langlois, M.M. Sabooglu. Evolutionary Micro-economics. Dynamics: Selection, Adaptation and Learning Processes. 8. Selection Processes in Economics; B. Loasby. 9. Adapting, Learning and Economizing; R.H. Day. Statics: Agency, Firm and Economic Structure. 10. Early Signs of a Revolution in Microeconomics; J. Lesourne. 11. Evolutionary Theories of the Firm: Reconstruction and Relations to Contractual Theories; N. Foss. Subject Index.

Frontiers of Evolutionary Economics. Competition, Self-Organization and Innovation Policy

FOSTER John and John S. METCALFE (eds.) (2001), Frontiers of Evolutionary Economics. Competition, Self-Organization and Innovation Policy, Edward Elgar, ISBN 1 8 4064 525 3.

Contributors: P.M. Allen, K. Bryant, U. Cantner, R. Delorme, K. Dopfer, J. Foster, J.M. Gowdy, H. Hanusch, S. Keen, F. Louca, J.S. Metcalfe, B. Morgan, R.R. Nelson, J. Nightingale, B. Nooteboom, P. Pelikan, J. Potts, P. Ramazzotti, P. Saviotti, D. Wollin.

Based on papers and commentaries from a workshop held at the University of Queensland in Brisbane, Australia, in July 1999. A report on this meeting appeared in Forum 2, December 1999.

Modern evolutionary economics is now nearly two decades old and in this excellent book a distinguished group of evolutionary economists identify the most important developments, and discuss the direction of future research.

By moving away from traditional concerns with the operation of selection mechanisms

towards a preoccupation with the manner in which the novelty and variety provide fuel for such mechanisms, the authors identify a key development in the field. Evolutionary economists have been drawn into the modern complexity science literature which attempts to provide an understanding of how and why 'complex adaptive systems' engage in processes of self-organization. The goal is to provide an integrated analysis of both selection and self-organization that is uniquely economic in orientation.

After a brief overview of the many key achievements and continuing challenges, the first part of the book deals with theoretical perspectives, discussing institutional change, social constructions, complexity, selection and self-selection and the usefulness of theory. Part two deals with empirical perspectives and includes discussion of replicator dynamics, the measurement of heterogeneity and complexity, and modelling organizations as complex adaptive systems.

This unique book will appeal to evolutionary and industrial economists and policymakers involved with issues of innovation and management scientists.

(Information as on dust jacket):

Evolutionary Controversies in Economics. A New Transdisciplinary Approach

Japan Association for Evolutionary Economics, Y. Aruka (ed.) (2001), Evolutionary Controversies in Economics. A New Transdisciplinary Approach, Tokyo, Berlin et al., Springer. Contributors: S.-H. Chen, D. Delli Gatti, D. Friedman, M. Gallegatti, J. Guastello, G. Hodg-

son, T. Lawson, R.R. Nelson, T. Puu, N.- Singh, U. Witt, Y. Aruka, and others.

After five years since its foundation, the first international publication of the Japan Association for Evolutionary Economics has appeared. The Association is lead by President Satoshi Sechiyama and General Secretary Kiichiro Yagi, Kyoto University. Contact:

www.econ.kyoto-u.ac.jp/societies/evolution/

Originally the planning of this book came about as the successful outcome of the 4th annual conference JAFEE 2000. Incorporating other international contributions related to their

preceding conferences, the book eventually turned out to be one of the most enterprising anthologies on evolutionary economics ever published. Specifically, it contains excellent papers on such topics as streams of evolutionary economics, evolutionary nonlinear dynamics, experimental economics and evolution, multi-agent systems and complexity, new frontiers for evolutionary economics, and economic heresies. In short, this book will provide a vivid and full-fledged picture of up-to-date evolutionary economics.

Publisher's Information

Herbert Alexander Simon (1916-2001) by Massimo Egidi

At the beginning of a recent essay written some months ago for the Italian business newspaper *Il Sole*, Herbert Simon urged economists to conduct profound revision of economic theories and to move toward a new, richer and realistic view of human activities within economic institutions.

"All of the directions I shall mention are concerned with meeting economics' deep need to build strong and empirically based connections, which today are fatally weak, between economic theory and the real phenomena of the world of business, consumer activity, and government."

Once again Simon was involving economists and business persons in a broad debate on the nature of economic affairs, his purpose being to emphasize the weaknesses of the standard economic theory and to elicit new perspectives for the future. The essay (now publication n.960 in the Simon bibliography at the Carnegie Mellon University [site](http://www.cmu.edu/~simon)

<http://www.psy.cmu.edu/psy/faculty/hsimon/hsimon.html>) continues by concisely stating the points that he felt essential for reconsideration of both decision making theory and the relations between organizations and markets. It concludes by suggesting new paths for the incorporation of more economic facts into theories.

In December 2000, Simon and I were commenting on the article and ensuing debate among Italian businessmen and professionals. He wrote to me thus (Monday, 1 January 2001): "... Thanks for your message about *"Il Sole"* etc. I will look forward to your comments, but I may or may not be quite prompt in replying. I am going to have to devote a couple of weeks to dealing with a medical problem, but hope to be more or less back in action by the end of January."

At the beginning of January he was admitted to the Presbyterian University Hospital of Pittsburgh for surgery; but complications arose after the operation, and he died on 9 February 2001

at the age of 84. An unexpected departure that many scholars, in a wide range of disciplines, have felt as a bereavement, as the loss of his intellectual support and guidance.

Born in 1916 in Milwaukee, Wisconsin, Simon was educated in political science at the University of Chicago (B.A., 1936, Ph.D., 1943). He held research and faculty posts at the University of Chicago, the University of California at Berkeley, and Illinois Institute of Technology, before moving to Carnegie Mellon University in 1949, where he stayed as a professor for 52 years until his death.

No other person to my knowledge has received such abundant recognition of his intellectual contribution to the sciences. In 1978, he received the Alfred Nobel Memorial Prize in Economic Sciences, and in 1986 the National Medal of Science; in 1969, the Distinguished Scientific Contribution Award of the American Psychological Association, in 1975 the A.M. Turing Award of the Association for Computing Machinery (with Allen Newell), in 1988, the John von Neumann Theory Prize of ORSA/TIMS and, in 1995, the Research Excellence Award of the International Joint Conference on Artificial Intelligence.

He laid the foundations of the Sciences of the Artificial, making crucial contributions to all the subjects that make up this area of research: psychology, computer science, economics and philosophy. The core of his creativity lays in his interest in human cognition - decision-making, problem-solving, discovery, thinking - and the implications of these processes for social institutions.

His best known books are *Administrative Behavior* (1947), *Organizations* (1958), (with James G. March), *Sciences of the Artificial*

(1969), *Human Problem Solving* (1972, with Allen Newell), *Models of Bounded Rationality* (3 volumes, 1982 and 1997), *Models of Thought* (2 volumes, 1989) *Models of discovery* (1977) and his autobiography, *Models of My Life* (1991).

In what follows I shall not comment on his immense scientific output (around one thousand publications); I wish instead to draw attention to the thread of continuity that runs through his work in the various disciplinary areas mentioned above.

When *Administrative Behavior* was first published, in 1947, organizational studies were considered to be a field of inquiry entirely distinct from microeconomics, and the scientific approach to the study of the internal mechanisms of organizations was not directly related to the rational behavior of economic agents. Decision making theory supposedly applied only to the behavior of independent agents in markets, and since people in organizations are by definition closely interdependent in their choice-making, the study of human behavior within organizations was relegated to the sidelines.

Administrative Behavior opened up the 'black box' of an organization's internal mechanisms. By radically criticizing the theories of administration then current, Simon identified decision making in conditions of uncertainty and interdependence as the basis on which administrative theory could be rebuilt, and thereby created the premises for a new vision of human activities within organizations.

This was a view that, by developing over many decades the idea of bounded rationality as problem solving activity, gave rise to a unified approach to economic behavior in markets and economic institutions.

Simon built his theory of bounded rationality on close observation of the behavior of employees and managers in large organizations. During the 1950s and early 1960s, he took part in numerous collaborations and research projects at the Graduate School of Industrial Administration of Carnegie Mellon, among them a study of decision making under uncertainty conducted jointly with Charles Holt, Franco Modigliani and John F. Muth. The aim of the study was to develop mathematical tools to improve inventory control systems for production planning at a plant of the Pittsburgh Plate Glass Company. It was in this context of the concrete study of empirical data that Simon developed his early notions of uncertainty, routines, and satisficing.

But the milestone in the founding of organizational studies on bounded rationality was *Organizations*, written with James G. March and published in 1958. Here all the major issues connected with bounded rationality and its consequences in terms of adaptive and evolutionary economics were debated.

This now classic book moved forward from the notion of problem solving as individual activity to the notion of organizational problem solving, with clear recognition of the evolutionary processes of organizational adaptation and organizational learning within business corporations. Identification of these processes proceeded in parallel with the discovery that the division of labor can be considered a problem solving activity, and that the recursive division of problems into sub-problems is a property of both organizations and computer programs.

Thus development of a deeper theory of problem-solving became crucial for explanation of organizational routines and procedures

within business firms, and their evolution. Progress in one of the sciences of the artificial - the theory of computation - became of fundamental importance for progress in the other - the theory of organizational learning. It is probably for this reason that Simon's interests moved to computation theories as natural candidates for explanation of human problem solving and discovery.

In *A Model Scholar: Herbert A. Simon (1916-2001)*, Mie Augier and James G. March write:

"About the time he was finishing his work on *Organizations*, Simon began his collaboration with Allen Newell, an association that would continue at Carnegie Mellon (primarily in the Department of Psychology) for almost 40 years, until Newell's death in 1992. The collaboration began in the early 1950s at the RAND Corporation, and by 1955 they had produced their first artificial intelligence program, the Logic Theorist, published in 1956 (Newell & Simon, 1956). By then, Simon had come to believe that detailed studies of the psychology of decision making could provide empirical evidence for his theories of decision making and that computer-based artificial intelligence offered an instrument for understanding and improving human problem solving."

The collaboration with Allen Newell gave rise to new tools with which to model human problem solving and discovery processes. *Human Problem Solving*, published in 1972 with Allen Newell, is a bridge between computation, artificial intelligence and cognitive psychology. Here Simon went beyond the notion of "computation" as a human activity which relates means to ends, replacing it with the notion of symbolic manipulation. Simon's first studies on

the limits of rationality, in fact, focused on the restricted ability of individuals to construct and explore their strategies for action, of which celebrated examples are the insurmountable obstacles encountered by the players of chess and other complex games when devising winning strategies. But as Simon's observations and field researches proceeded, he realized that beyond the limits on the human ability to "compute" a strategy in depth lay further limitations, and that these involved most of the cognitive activities connected with decision-making.

Therefore when the limits to the human capacity for mental calculation were experimentally demonstrated, it became clear that this ability was an aspect - an important but not unique one - of the mind's more general capacity to manipulate symbols and to create mental models of reality.

The realization that human decision making can be understood only if mental activity is viewed as symbolic manipulation reinforced the bridge with psychology. Simon's research thus shifted to a different version of the problem, subjecting the various mental abilities essential for explanation of human action - memorization, categorization, judgement, problem-solving, induction - to increasingly intense experimental scrutiny. In parallel with this experimental work, Simon developed computational models of intelligence designed to explain the process of discovery. (The BACON and DALTON programs (Langley, Simon, Bradshaw and Zytkow, 1987), for example, simulate scientific discovery processes).

After organizational theory and artificial intelligence, it was cognitive psychology that became Simon's next fundamental area of inquiry as he developed his idea of the human solver

and sought to clarify the shortcomings of the traditional theory of decision making within institutions.

The growth of experimental economics since the 1970s has been extraordinarily helpful in highlighting the importance of this line of research. The pioneering works by Allais on expected utility theory violations, and the subsequent discoveries by Kahneman and Tversky, made it clear that Simon's claims about the scant realism of economic and organizational theories were solidly based.

Once again, and now with the precision of the experiments, the systematic discrepancy between the predictions of the traditional theory of decision making and real behavior became very apparent. Indeed, an enormous number of experiments conducted in recent years have shown that many types of human errors - defined as breaches of rationality - are systematic. Consequently, the benevolence still shown by the majority of economists towards the assumptions of decision theory can only be explained by the lack of a convincing alternative. Economists thus find themselves in the embarrassing situation that they have a largely falsified theory but can only offer fragments of alternative theories in its place.

Simon's insight that these discrepancies could be overcome by radically revising these theories, and by introducing closer concern with human activity so that systematic account could be taken of the limitations and richness of human intellectual activity, has accordingly become of crucial importance. Moreover, a large body of results from cognitive psychology and experimental economics has given further support to his view. I will cite only one of these developments of his views.

One of the profoundest of Simon's intuitions, namely that decision making is deeply rooted in learning activity, has been largely borne out by psychological research, and it gives us important directions for future inquiry. Since the mid-1970s until their most recent study *Choices, Values and Frames*, Tversky and Kahneman have investigated the psychological principles that govern the creation, perception and evaluation of alternatives in decision-making processes. They find that preferences vary substantially according to the way in which the choice problem is presented ('framed'). Rather than being stable (Gary Becker), preferences are constructed by individuals in the process itself of their elicitation; a clear demonstration of this process is provided by the well known experiments in which different representations of the same choice generate a reversal of preferences.

This suggests that the crucial aspect of the decision-making process is the ability to construct new representations of problems. This point was already present in nuce in Simon's empirical analysis of managerial decisions conducted in the 1950s. In 1956 Cyert, Simon and Trow pointed out an evident dualism in managerial behavior, which displays on the one hand coherent choices among alternatives, on the

other a search for the knowledge necessary to define the choice context. Consequently, research into rationality shifted its focus from the coherence/incoherence of choices to the representation and editing of problems. How the mental models with which individuals and institutions frame problems are constructed is a crucial issue to be addressed by decision theory in the years to come, an issue that will yield better understanding of human innovative activities within institutions.

Besides re-establishing close connection among economics, psychology and the cognitive sciences, Simon's research suggests that the actions of decision-makers in the real economic world should be studied, not merely in terms of rationality, but in the light of the capacity of the human mind to frame problems, and to represent reality in innovative ways, in an endeavor to reduce their uncertainty and ignorance.

The "Sciences of the Artificial", namely organization theory, cognitive psychology and artificial intelligence, are the new disciplines now investigating the classic yet still unresolved question of human creativity and learning, and their relationship with the evolution of institutions. The birth and growth of all these disciplines are rooted in Simon's fundamental contributions to intellectual inquiry.

DRUID's Nelson &-Winter Conference Ålborg, Denmark, June 12-15, 2001

In 2002 it is 20 years since Nelson and Winter published *An Evolutionary Theory of Economic Change* (Harvard University Press 1982). In this book there was the first presentation of a modern theory of economic evolution that combined an analysis of firm behaviour in

terms of a routine system with population dynamics at the level of industries and whole economies. The book has been successful both by promoting an evolutionary approach in economics and by giving specific inspirations to empirical and theoretical research in industrial

dynamics and many other areas of study.

To celebrate the Nelson-Winter book and to prepare for 2002 publications in the diverse fields that have been inspired by this book, a conference was held in Ålborg, Denmark, June 12-15, 2001. The conference was organised in collaboration between two important journals in the field (Research Policy and Industrial and Corporate Change) and the Danish Research Unit for Industrial Dynamics (DRUID), which is a research network/programme financed by the Danish Social Science Research Council, the Danish Ministry of Trade and Industry, and three Danish universities. The call for papers was published in the fall 2000 (in the named journals as well as e.g. Journal of Evolutionary Economics) and the reaction was overwhelming. More than 250 abstracts were submitted to the conference organising committee, which included Lundvall, Foss, and Andersen (all from DRUID) as well as Pavitt, Dosi and Malerba (all from the DRUID Scientific Advisory Board and from to the co-organising journals).

At the conference 90 papers were presented and 80 further papers were made available as so-called electronic papers. Both the former and the latter group of papers reflected the fact that the call for papers had emphasised a wish to include a reasonable share of papers from young scholars within the relevant fields. The abstracts of the 170 chosen papers were included in a book of abstracts, which were given to the 250 conference participants. Furthermore, a CD-ROM was also published with all the papers in PDF format. Finally, the papers were made available for download from the Nelson-Winter Conference website

www.business.auc.dk/druid/conferences/nw/

Given the large number of papers much of the conference was organised in parallel sessions, which cannot be covered in the present short summary. These sessions were, however, organised around the same themes that were used for most of the plenary sessions, and some of the invited papers were placed as “lead papers” for the discussions of these parallel sessions. So a short summary of the themes and the invited papers will serve to give an impression of the contents of the conference. The themes of the conference and the related invited papers were:

A. Industrial and Market Dynamics with invited papers by Carlsson/Eliasson, Cohen/Nelson/Goto/Nagata/Walsh, Geroski/Mazzucato, Klepper, Malerba/Olsenigo and Metcalfe.

B. Production and Use of Knowledge with invited papers by Constant, Coriat, Foray/Steinmueller, Loasby, Nightingale and Pavitt.

C. Technical Change, Production Organisation and the Firm with invited papers by Andersen, Cohendet/Llerena, Langlois, Lorenz, Mytelka/Pellegrin, Witt.

D. Routines, Organisational Practices and Strategies with invited papers by Dosi/Levinthal/Marengo, Foss, Froeslev Christensen, Granstrand, Helfat/Lieberman and G.B. Richardson.

E. Growth, Development and Structural Change with invited papers by Carlaw/Lipse, Ernst/Kim, Fagerberg/Verspagen, Maskell, Mowery/Simcoe and Silverberg.

F. National Systems of Innovation, Institutions and Public Policies with invited papers by Cimoli/Katz, Edquist, Lundvall/Johnson/Dalum/Andersen, Petit/Amable, Keith Smith/Mytelka and Teubal.

There were also cross-thematic plenary sessions at the conference. The conference started with a plenary discussion between Nelson and Winter and three young scholars (Cusmano, Tell and Laursen) on the relationship between evolutionary economics to economics in general and on the initial development of the Nelson-Winter theory. Another discussion was a critical and policy oriented discussion on "new economy" and "international benchmarking" by Nelson, Pavitt, Roested, Tanaka and Teece. Finally, there were a discussion on theoretical perspectives for future work by Aoki, Dosi, Loasby, Soete and Winter. These discussions reflected the fact that the Nelson-Winter book has served to promote a fruitful collaboration between theoretically and empirically oriented researchers in a broad range

of fields, which at the moment go far beyond the original emphasis on economic growth and industrial dynamics. The discussion also showed (as did a citation study of the use of the Nelson-Winter book) that while there at the moment is a strong presence of this kind of approach in leading journals and schools of business economics, the spread within general economics has been significantly weaker. The papers for the conference reflected this fact, but several efforts were suggested in order to change this situation.

The direct outcome of the conference is the publication of special issues of the journals *Research Policy* and *Industrial and Corporate Change* as well as a few edited books on different themes.

Esben Sloth Andersen, Ålborg

2nd European Meeting on Applied Evolutionary Economics **An Initiative of Young Scientists supported by the International Joseph A. Schumpeter Society Vienna, 13 September – 15 September 2001**

With the second European meeting on Applied Evolutionary Economics (EMAEE) having taken place in 2001, EMAEE has proven to be more than a one-time phenomenon. The 2nd EMAEE was organised in Vienna around the theme "Advancing Empirical Research Methodologies in Evolutionary Economics", in order to take up the challenge of an empirically based Evolutionary Economics. Sixty-two delegates from countries as far apart as Australia and Brazil and from all over Europe took part in the conference. A total of 21 papers were presented in 6 sessions, together with 4 keynote speeches and one round table discussion.

The conference was overshadowed and affected by the terrible events of September 11th.

One of the keynote speakers and several of the presenters decided not to attend the conference. Others were not very much in the mood to attend in the aftermath of these events, and still others came late due to the air traffic chaos. The organising committee did not consider cancelling the conference – to be honest we were too shocked by the events to act. In the end, we decided to stick as closely to the original plan as possible. The attacks were nevertheless a subject of discussion during the entire conference, in part also because many of the delegates knew people in New York. But now let us return to the more pleasant topic of the EMAEE.

The EMAEE is an Initiative of Young Scientists and supported by the International

Schumpeter Society. The objective of the EMAEE-conferences is to bring together junior and senior researchers and PhD-students who are interested in the empirical application of Evolutionary Economics. The first edition of the EMAEE was organised by Paolo Saviotti (INRA/SERD) and Jean-Marie Martin (CNRS-IEPE) in Grenoble in 1999, and was a great success. The program and papers of the first EMAEE are still available on the web (<http://www.upmf-grenoble.fr/iepe/Manif/meeting.html>).

Some months later, Koen Frenken and Andreas Pyka thought it was worthwhile to continue the EMAEE initiative and proposed that I organise the second meeting. I said yes – not knowing what I was getting myself into. Before the conference took place, I regarded some of the time spent organising the conference as wasted time. But after the conference I have to admit that each minute invested was well spent.

In order to guarantee a fruitful exchange on the latest methods and to encourage the discussion of specific empirical research methodologies, we decided from the outset that the whole conference should be plenary. This resulted in a relatively high rejection rate. Of the over 50 submitted proposals, 29 were chosen for presentation at the conference. The strategy paid off. The discussions were lively and the conference participants were happy to attend a conference where no parallel sessions were necessary. At this point, I wish to thank the members of the scientific committee and congratulate them on their good choice of presentations. The overall quality of the papers was very high.

All of the selected papers were empirically oriented, except for those in the session “Learning and Evolution” which was jointly

organised with LEGATE, an informal group of academic researchers interested in Evolutionary Game Theory and their applications to Economics and Biology, located in Vienna. We decided to include this session to give participants an opportunity to listen to some of the high masters of Evolutionary Game Theory.

The rest of the conference focused on empirical research. It is impossible to do justice to each of the sessions and to the range of interesting methodologies and results discussed. Each paper presented was discussed by a senior scientist. The discussants took their job very seriously. Their comments triggered in-depth discussions on very specific and specialized issues. Time constraints often interrupted the lively discussions, which continued in the coffee breaks and during the social events. The plenary structure of the sessions proved advantageous, as everyone had heard the same presentations.

After the conference, I sent out a feedback form, and I am pleased to say that the percentage of forms returned was high, as was the evaluation of the conference (I hope that this is not due to some kind of selection bias). As the local organiser, I was especially happy that participants enjoyed the social events, liked the venue of the conference and gave the scientific quality of the conference a very high rating. The average quality of the presentations was high. I can return the compliments received regarding the scientific quality of the conference to all presenters, discussants, keynote speakers and session chairs. Without your input the EMAEE 2001 would not have been the conference it turned out to be – thank you! The following table presents a list of all sessions.

The conference was extremely fortunate to have Luigi Orsenigo (University of Brescia and

Bocconi University), Jan Fagerberg (TIK, University of Oslo), John Foster (University of Queensland) and Jeroen van den Bergh (Free University of Amsterdam) as keynote speakers. Their talks were very different in nature, but all of them dealt with empirical aspects of Evolutionary Economics.

In the first keynote “On technological regimes” Luigi Orsenigo presented a very personal account of his adventures with technological regimes, thereby summarising his important research done together with Franco Malerba and others. He stated that they were stunned to observe that technological regimes, defined in terms of particular combinations of opportunity and appropriability conditions, degrees of knowledge, cumulateness of knowledge, and characteristics of the knowledge base are highly useful for interpreting and understanding not only sectoral patterns of technical change, but also empirical regularities of industry structures.

In the second keynote, “Europe at the Crossroads: The Challenge from Innovation-based Growth”, Jan Fagerberg argued that the slow growth record and Europe’s employment problems compared to the US and Japan is mainly the result of the failure to exploit new technological opportunities. The challenge from innovation-based growth requires the embedding of new technologies in society, which in turn requires the co-ordination of policy initiatives across very different levels and policy areas, in order to exploit their complementarities. Furthermore, it became obvious that, although a convergence of European countries can be observed, divergent tendencies which can be traced back to technological developments are at work on the regional level.

In his speech on “Economics and Econo-

metrics” John Foster was critical of the conventional econometric methodologies, which neglect time series data as a domain for discovering new explanations of economic phenomena. By using the consumption function as an example and drawing on his own research, John Foster showed how Evolutionary Economics, understood as a theory of process, is able to provide a different econometric methodology which respects economic history and captures selection processes and the self-organisational nature the economy.

In the last keynote, “Evolutionary Economics and Environmental Economics”, Jeroen van den Bergh provided a tour de force by discussing the links between Evolutionary Economics and Environmental studies. He pointed out future research opportunities in the application of evolutionary theories in the areas of sustainability, technology and environment, ecosystem management and resilience, and the design of environmental policy.

Details of the conference and papers will be kept on the conference website http://www.wu-wien.ac.at/inst/vw1/gee/emaee/emaee_index.html until March 2002. I am pleased announce that, as for the first EMAEE, a volume will be published with Edward Elgar. The volume will take up the challenge of an empirically based Evolutionary Economics and focus on the empirical application of principles of evolutionary economics. It will contain revised versions of the best papers presented at the conference, as well as selected keynote lectures.

The Vienna conference was characterised by an overall intensity. The conference dinner in particular proved to be a ‘hard day’s night’, as Friday was an especially rigorous day (for those who wanted to attend all sessions and keynotes,

it meant 11 straight hours of Evolutionary Economics). The dinner took place in a typical Viennese atmosphere at a “Heuriger” in Neustift with traditional Austrian specialities and “Sturm”, a very young wine. The delegates also enjoyed other social events, such as the opening evening buffet and the closing reception at the Vienna University of Economics and Business Administration.

The final highlight of the conference was the roundtable, at which Uwe Cantner, John Foster, Koen Frenken, Luigi Orsenigo, and Andreas Pyka and Sigrid Stagl (moderation) discussed “The Future of Applied Evolutionary Economics”. There was a general agreement that Evolutionary Economics should advance to establish a “paradigmatic” set of empirical methods, which can provide building blocks for future research. This should by no means block further innovative efforts to introduce new techniques, but rather codify the important work that has been done so far. A kind of handbook containing basic concepts and methodologies is still missing and would be of great value to our community, as well as to future students of Evolutionary Economics. However, there was no doubt that Evolutionary Economics at its present stage has not yet provided an encompassing theory of economic behaviour, and that there is no need and advantage for Evolutionary Economists to form another orthodox school of thought.

It would have been impossible to organise the conference without the financial support of its sponsors, the Austrian Ministry for Transport, Innovation and Technology, the City of Vienna and the Austrian National Bank. I wish to thank the interdisciplinary research group “Growth and Employment in Europe”, which is located at the Vienna University of Economics

and Business Administration, the department of Economics, and the Schumpeter Gesellschaft Wien for their support. Many people invested a great deal of time and effort to ensure the success of the conference. I particularly want to thank Koen Frenken, Arnulf Grübler, Horst Hanusch the Secretary General of the International Schumpeter Society, Andreas Pyka, Michael Peneder, J. Hanns Pichler, Matthias Weber and Sigrid Stagl. Without their help it would have been impossible to organise the conference in Vienna.

Horst Hanusch closed the conference by announcing that the 3rd European Meeting on Applied Evolutionary Economics would be held in Augsburg in 2003 and organised by Andreas Pyka. I am looking forward to this event and am convinced that it will be as pleasant and challenging as the Grenoble and Vienna conferences.

Werner Hölzl, Vienna

Programm of the Conference

Session 1: Structural Change (Chair J.H. Pichler, Vienna Univ. of Economics and B.A.)

- Michael Peneder (Austrian Institute of Economic Research – WIFO, Vienna): „Structural Change, Development and Growth“
- Aadne Cappelen (Statistics Norway), Fulvio Castellacci, Jan Fagerberg (TIK, Univ. of Oslo) and Bart Verspagen (ECIS, Eindhoven Univ. of Technology): „The Impact of Regional Support on Growth and Convergence in the European Union“
- Tuomo Pentikäinen (VTT Group for Technology Studies): „Trade-flow-based and Knowledge-based Networks: Do They Coin-

cide?“ Discussant: Luigi Orsenigo (Brescia Univ. and CESPRI, Bocconi Univ.)

Session II: Learning and Evolution (joint Session with LEGATE) - Chair Carlos Alos-Ferrer, Univ. of Vienna

◦ Stefan Fink and Gottfried Tappeiner (Univ. of Innsbruck): "Revisiting Technological Standard Diffusion: An Agent-Based Extension Model of Nonlinear Polya Processes" Discussant: Martin Posch (Univ. of Vienna)

◦ Josef Hofbauer (Univ. of Vienna) and William H. Sandholm (Univ. of Wisconsin): "Evolution and Learning in Games with Randomly Perturbed Payoffs" Discussant: Carlos Alos-Ferrer (Univ. of Vienna)

◦ Karl Sigmund (Univ. of Vienna and IIASA), Christoph Hauert (Univ. of Vienna) and Martin A. Nowak (Inst. of Advanced Study Princeton): "Reward and Punishment in Minigames" Discussant: Ulrich Berger (Vienna Univ of Economics)

◦ Klaus Ritzberger (IHS, Vienna) and Stefano Demichelis (CORE): "From Evolutionary to Strategic Stability" Discussant: Josef Hofbauer (Univ. of Vienna)

Session III: Evolutionary Dynamics - Chair Horst Hanusch, Univ. of Augsburg

◦ Franco Bevilacqua and Adriaan van Zon (MERIT, Maastricht Univ.): „Random Walks and Nonlinear Paths in Macroeconomic Time Series: Some Evidence and Implications“ Discussant: John Foster (Univ. of Queensland)

◦ Uwe Cantner (Friedrich-Schiller-Univ. Jena), Bernd Ebersberger, Horst Hanusch (Univ. of Augsburg), Jens J. Krüger (Friedrich-Schiller-Univ. Jena) and Andreas Pyka (Univ. of Augsburg): „Empirically Based Simulation: The Case of Twin Peaks in National In-

come“ Discussant: Dieter Gstach (Vienna Univ. of Economics and B.A.)

◦ Bernhard Dachs, Clemens Widhalm and Angelika Zartl (ARCS, Seibersdorf) Thomas Roediger-Schluga (Vienna Univ. of Economics and B. A.): „Mapping Evolutionary Economics – A Bibliometric Analysis“ Discussant: Koen Frenken (Utrecht Univ.)

◦ Jeroen van den Bergh (Free Univ. of Amsterdam) and Sigrid Stagl (Vienna Univ. of Economics and B.A.): “Co-evolution of Behaviour and Institutions: Linking Evolutionary and Experimental Economics” Discussant: John Foster (Univ. of Queensland)

Session IV: Industrial and Market Dynamics - Chair: Maria G. Derengowski Fonseca, Federal Univ. of Rio de Janeiro

◦ Giulio Bottazzi (Sant´ Anna School of Advanced Studies, Pisa): „Size, Diversification and Variance in Corporate Growth Rates: A Reassessment of the ‚Law of Proportionate Effect““ Discussant: Uwe Cantner (Friedrich-Schiller-Univ. Jena)

◦ Jean Luc Gaffard and Jackie Krafft (CNRS-IDEFI, Univ. de Nice-Sophia Antipolis): „Telecommunications: Understanding the Dynamics of the Organization of the Industry“ Discussant: Andreas Pyka (Univ. of Augsburg)

◦ Serguei Kaniovski and Michael Peneder (Austrian Institute of Economic Research – WIFO, Vienna): „On the Structural Dimension of Competitive Strategy“ Discussant: Luigi Orsenigo (Brescia Univ. and CESPRI, Bocconi Univ.)

◦ Reinhold Hofer, Werner Hölzl and Angelika Schenk (Vienna Univ. of Economics and B. A.): “Three Stages of Net Entry into Austrian Manufacturing: Entrepreneurial Ex-

perimentation and actual entry” Discussant:
Uwe Cantner (Friedrich-Schiller-Universität
Jena)

- Thomas Grebel, Andreas Pyka and Horst Hanusch (University of Augsburg): „An Evolutionary Theory of Entrepreneurship“ Discussant: Luigi Orsenigo (Brescia Univ. and CESPRI, Bocconi Univ.)

Session V: Technological Development and History - Chair J. van den Bergh, Free University of Amsterdam

- Andreas Reinstaller (University of Maastricht) and Werner Hölzl (Vienna Univ. of Economics and B.A.): „The creative response in economic development: The Case of Early Information Processing Technologies in US Manufacturing, 1870 – 1930.“ Discussant: Arnulf Grübler (IIASA)
- Koen Frenken (University of Utrecht) and Alessandro Nuvolari (ECIS, Eindhoven University of Technology): “The Early History of the Stationary Steam Engine: An Evolutionary Interpretation Using Complexity Theory” Discussant: Arnulf Grübler (IIASA)

Session VI: Technological Development and Policy - Chair: M. Peneder, Austrian Institute of Economic Research – WIFO, Vienna

- Deborah Tappi (Max Planck Institute for Research into Economic Systems, Jena): „Industrial Districts as Evolving Systems: The Case of the Musical Instruments District in Marches“ Discussant: Matthias Weber (ARCS, Seibersdorf)
- Beatriz de Castro Fialho, Lia Hasenclever, Carlos A Hemais (Federal University of Rio de Janeiro): „Evolutionary Technological Change: Empirical Findings on the Polymer Industry“
- Maria G. Derengowski Fonseca (Federal University of Rio de Janeiro) and Jose Maria Silveira (Univ. Estadual de Campinas): „Brazilian Biotechnology Development: Challenges and Opportunities Opened by the Emergence of Knowledge Building Blocks“ Discussant: Luigi Orsenigo (Brescia Univ. and CESPRI, Bocconi Univ.)

The 3rd European Meeting on Applied Evolutionary Economics **An Initiative of Young Scientists supported by the International Joseph A. Schumpeter Society -ISS**

The 2003 conference following the Grenoble conference in 1999 and the Vienna conference will be held at the Department of Economics at University of Augsburg, Germany from April 10 - 12, 2003 with the title:

The Knowledge-Based Economies -
New Challenges in Methodology,
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The conference will focus on the most important aspects of knowledge-based economies and their analysis within the framework of evolutionary economics. The conference covers topics, such as:

- Knowledge and Learning
- Dynamics of Technological and Qualitative Change

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 - Evolution of Institutions: Long term Development, Co-evolution, Sustainable Development.
 - Financial Markets in Knowledge-based Economies
 - Evolution of Demand: Emergence of new Preferences, Satiation, Knowledge and

Learning on the Demand Side, Network Externalities.

- Policy in a Knowledge-based Economy

A detailed call for papers will be published soon. Most recent information is available at:
<http://www.wiso.uni-augsburg.de/vwl/hanusch/emaee/index.html>

Nobel Prize to Joseph Stiglitz

While the Nobel Prizes (Physics, Chemistry, Medicine or Biology, Literature, and Peace), themselves, are now 100 years old, the Nobel Award in Economics is something of a Johnny-come-lately, being a mere 32 years old. For many of these 32 years the Swedish Academy has chosen to give the Award acknowledged general leaders in the profession, and when that list became largely exhausted, it turned to stressing the contributions of those favoring self-regulating product and even factor markets - a position often associated with the University of Chicago's economics department.

This year (2001) the Academy turned to the other side of the question, namely market failures associated with informational asymmetries. In recognizing the achievements of George Akerlof, Michael Spence, and Joseph Stiglitz the Academy honored independence of thought, that is the profession's counter-culture.

Stiglitz has been a quondam member of this Society, even presenting at the 1992 Kyoto Meetings a provocative paper, "Endogenous Growth and Cycles." Stiglitz's independence of mind is the profession's exemplar, even now.

While Vice President and Chief Economist of the World Bank he showed little or no hesitancy in criticizing publically (and bitterly) the one-size-fits-all get-tough policy measures that the United States Treasury and the International Monetary Fund was advocating for handling the economic crisis in Asia during the 1990s. That the American Secretary of the Treasury demanded his resignation as a condition for America agreeing to the reappointment of James Wolfenson as President of the World Bank is a recorded fact. That price for his intellectual honesty does not diminish Stiglitz's career, including professorships at Yale, Stanford, Oxford, Princeton, and now Columbia. Nor can it erase his public service record as a Member and then Chairman of the President's Council of Economic Advisers.

Stiglitz 'calls the shots as he sees them,' a quality all-too-rare in a profession generally enjoying-but-rarely-testing its academic tenure! Like Schumpeter, Stiglitz uses his academic prestige to challenge rather than to reinforce contemporary orthodoxies.

Mark Perlman, Pittsburgh

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