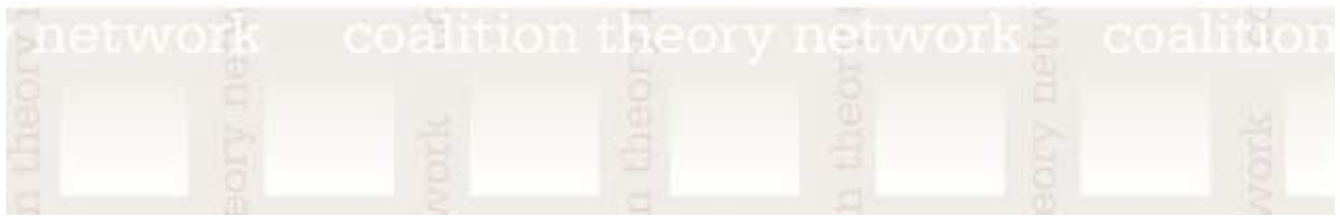


Coalition Theory Network Newsletter

No. 0/2003

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Welcome address

by Carlo Carraro

Dear All,

2003 starts with a new initiative: a newsletter dedicated to the Coalition Theory Network activities.

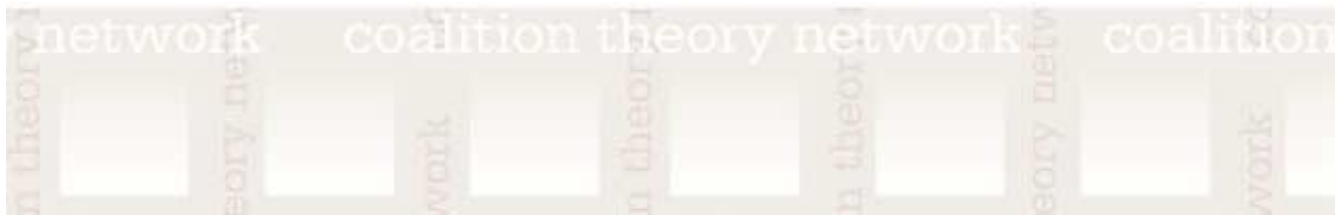
The aim of the newsletter is to disseminate the advances, the news and new proposals arising within the Coalition Theory Network. This publication will be circulated quarterly in electronic format to the CTN mailing list, and will also be available in the CTN website.

This new initiative coincides with the entry of a new member in the network: the EUREQua, a research team jointly sponsored by the Centre National de la Recherche Scientifique and the Université Paris-I Panthéon-Sorbonne.

With this occasion, the website has been updated and revised, in order to offer a more exhaustive instrument for research in coalition theory. Among the main novelties, one that we would like to stress concerns the posting of new research papers to the website. In agreement with Guillaume Haeringer and Rod Garret, we are in the process of integrating the contents of the CTN website (<http://www.feem.it/ctn/>) and the “grandcoalition” website (<http://www.grandcoalition.com/papers/index.html>) for what concerns posted papers. In the near future, it will be possible to post papers to both sites by simply submitting the document to only one of them. In addition, the author will be able to specify whether he/she intends to submit the paper for the FEEM “CTN Working Papers Series”. In this latter case, the paper will undergo a refereeing process, and, once accepted for publication, it will be distributed in paper copy through the extensive diffusion network covered by FEEM publications, as well as appearing on line on both sites. Furthermore, being FEEM a member of the Economics Research Network (ERN) FEEM Working Papers are automatically included in the Social Science Research Network (SSRN) Electronic Library.

Finally, I wish to take this opportunity to once again remember our colleague Murat Sertel, who passed away last January. It is a big loss for all the scientific community, and we would like to recall his great enthusiasm and *joie de vivre*, that he was able to communicate to all of us. This first number of the CTN Newsletter is dedicated to him.

Carlo Carraro



The sixth CTN member: EUREQua

by Silvia Bertolin

The Coalition Theory Network welcomes Université Paris 1 as new member of the network. The CTN now counts six member institutions: Fondazione Eni Enrico Mattei (FEEM), Center for Operational Research and Econometrics (CORE), Universitat Autònoma de Barcelona (CODE), Université de Marseilles (GREQAM), University of Warwick, Université de Paris 1 (EUREQua).

EUREQua, is a research team (« unité mixte de recherche »), jointly sponsored by the Centre National de la Recherche Scientifique and the Université Paris-I Panthéon- Sorbonne. It has been created in 1998 and is hosted by the Maison des Sciences Economiques of the Université Paris-I.

EUREQua is devoted to economic research at its highest level, both theoretical and empirical. Its researchers are well-known economists, trained in the best French and foreign departments of economics. EUREQua is also linked to a graduate school and trains some 50 active PhD students. The main research themes studied by EUREQua are the following:

- I – Industrial economics and Innovation Economics
- II – Uncertainty, information, decision-making theory
- III – Growth and economical dynamics
- IV – Applied macroeconomics
- V – Labour market
- VI – Environmental economics
- VII – Econometrics
- VIII – Political economy, economics, public economics

The aim of this last research branch, headed by Hubert Kempf and Etienne Lehmann is to find an answer to the new questions rising within the structure of modern economies. Therefore, the research studies undertaken focus on the instruments necessary to a suitable modelling of the political processes, but also on the consequences of economic policies on different fields of society (such as monetary policy, development policies, industrial policy, labour market regulation, etc.)

EUREQua collaborates with different national and international research centres: among them, DELTA, OFCE, University of Warwick, Boston University, University of Bologna, ANU, Caltech.

VIII Coalition Theory Workshop: outlines of the conference

by Sergio Currarini

The VIII Coalition Theory Workshop has been held in Marseilles (France) on the 24th-25th January 2003. This was the second and final workshop sponsored by the European Commission as “High Level Scientific Conference” in the framework of the programme Improving Human Potential.

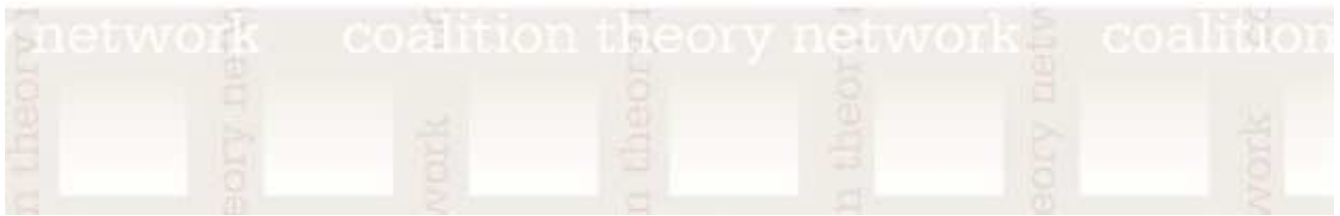
This year’s workshop has focused on the theoretical analysis of the formation of social and economic networks, and on some applications inspired by recent case studies. This topic has received ever-increasing attention both from theorists and from applied economists in the last decade. Differently from “coalitions”, networks allow for the analysis of social and economic links which have a bilateral nature, such as bilateral trade agreements, diplomatic relations, social acquaintances, industrial R&D cooperation, etc.

One of the main issues in the analysis of networks formation, and in economics in general, is the potential conflict of private and social incentives. In many instances, the benefits (or losses) of an additional link for society (that is, for the agents that would be affected by the new link) are not considered by the agents forming or severing that link, who act according to their private interest. As a result, if the cost of establishing a given link is too high to be considered profitable by the two agents involved, this link will not form although it would have benefited the system as a whole, possibly by opening up new indirect connections to agents that were already linked with the agents involved in the new link.

A first group of contributions presented at the VIII CTN meeting can be viewed as attempting to build a general theory of social and economic behaviour in networks, and to describe and investigate the incentive of agents to form or destroy social and economic links. Among these, Matt Jackson presented a paper aiming at reconsidering the formulation of distributive values in network games. In particular, Jackson discussed certain variations of the so called Myerson-value, sharing the total network value across agents according to expected marginal contributions. Jackson argued that the Myerson value fails to capture some aspects that are related to the threat of players to form alternative structures in the process of forming the observed network. His proposed value takes an ex-ante perspective, in the sense that it does not take the network structure as fixed, but considers all the outside options that players (and groups of players) may have had on the way to the formation of a given network.

Another important theoretical question concerns the shape of the networks that will form in different economic contexts. Little is known about the equilibrium architecture of networks, especially in cases in which agents which are not linked with each other (e.g., competing industries) still interact in some way and affect each other’s welfare. Sanjeev Goyal’s analysis is an important contribution in this direction, showing how the shape of equilibrium networks is closely related to the type of external effect additional links exert on players not maintaining them. Goyal shows that if this effect is positive (as in Cournot oligopolies), then the network will take a regular form, with all players maintaining the same number of links. If this effect is negative (like in trade areas), the shape is bound to be highly asymmetric, with a few players acting as connectors of the system. A contribution by A. Galeotti has studied Goyal’s original model of network formation (with no spillovers) when players are heterogeneous.

Another important contribution was presented by Murat Sertel, dealing with the design of social codes that allow the achievement of efficient outcomes in the presence of externalities. His paper provides necessary and sufficient conditions on the magnitude of such externalities for a stable “code” to exist. This paper brings attention to the distinction, rather overlooked in the literature, between the physical or “technological” feasibility of coalitional objections and the institutional feasibility of such objections, which may require the approval of members of society which are not active in the defection. The crucial condition for stability of efficient outcomes, named NONE (Non Overwhelming Negative Externalities) by the author, simply requires that if a coalition, endowed with the right to veto a given change in society, benefits from such change, then the complement coalition is not “too” hurt by that change, by this meaning that the aggregate welfare loss of the latter is not greater than the aggregate welfare gain of the former.



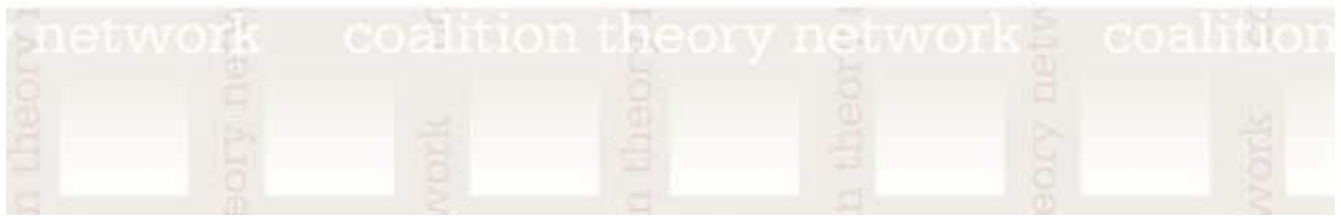
Other contributions have focused on more applied studies, mainly motivated by current policy issues whose formal treatment may gain from the consideration of “network effects”.

Patrick Ray has addressed the problem of backbone internet competition. In particular, Ray’s paper attempts to develop a framework for modelling competition among interconnected Internet backbone operators. The papers show if no direct payment is possible between users and operators, then the access charge generally fails to implement the efficient allocation of Internet use among end users. In addition, the degree of market power of providers is shown to affect their incentives in accepting an efficient regulation of access charges.

Another application of network formation games came from Hideo Konishy, studying the formation of free trade agreements (FTAs). Konishy shows that countries with similar characteristics are more likely to reach an FTA. In particular, when countries are symmetric and industrial commodities are not extremely substitutable, the complete global free trade network emerges as the unique pairwise stable architecture.

Other contributions in this group include Thierry Mayer, proposing an explanation of the “border effect” in trade based on network communication effect among traders, and Antoni Calvo-Armengol, studying how the introduction of externalities in workers’ preferences (affected by the salaries of their neighbour) can lead to widespread skill segregation.

As in previous editions, the VIII meeting of the CTN has offered contributions to the theory of coalition formation. In particular, Francis Bloch has presented a paper studying a process of dynamic bargaining in which players form coalitions in order to exploit the advantages of cooperation and in order to exploit the resulting increase in bargaining power. Another, more applied, model of dynamic negotiations was presented by Alistair Ulph, studying the dynamics of International Environmental Agreements. Vincent Vattenelbosh has presented a work on some refinements of the concept of farsighted stability (due to Michael Chwe) in coalition formation, introducing the notion of cautiousness. Laszlo Koczy has talked about a cooperative game theoretic concept named minimal dominant set, which is always nonempty and coincides with the core when this is nonempty. Koczy’s analysis is developed for games with possible externalities across coalitions. Finally, M. Haag has presented an extremely interesting paper investigating the explanatory power of “folk theorem” type of results when the discount rate of players is not sufficiently high to allow for efficiency. The maximal degree of cooperation that a group can achieve in this case is shown to be inversely related to the heterogeneity of the group, and, under some conditions, to increase with the group’s size (a counterintuitive result) when discount rates are heterogeneous.



New papers on coalition theory

FEEM Working Papers

All the papers presented at the VIII Coalition Theory Workshop are posted on the CTN website (<http://www.feem.it/ctn>). To download these papers, go to the VIII Coalition Theory Workshop section, open the “programme” link, and double click on the title of the paper of interest.

Other new papers posted on the website FEEM Note di Lavoro are the following.

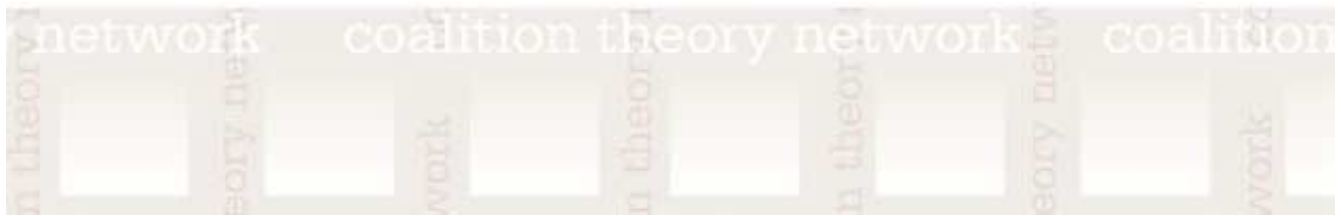
- ▣ 60.2002 - Staying Together or Breaking Apart: Policy-Makers' Endogenous Coalitions Formation in the European Economic and Monetary Union
Joseph Plasmans, Giovanni Di Bartolomeo, Jacob Engwerda, Bas van Aarle
- ▣ 94.2002 - Increasing Participation and Compliance in International Climate Change Agreements
Robert Stavins, Scott Barrett
- ▣ 102.2002 - Heterogeneous International Agreements -- If per capita emission levels matter
Andreas Lange
- ▣ 106.2002 - Pre-Negotiation for an International Emission Reduction Game
Haruo Imai, Mayumi Horie
- ▣ 19.2003 - On the Stability of Hierarchies in Games with Externalities
Sergio Currarini
- ▣ 31.2003 - A Non-cooperative Foundation of Core-Stability in Positive Externality NTU-Coalition Games
Michael Finus, Bianca Rundshagen

University of Warwick Working Papers

- ▣ 650 - On the Size and Structure of Group Cooperation
Matthew Haag and Roger Lagunoff
- ▣ 652 - Why are Trade Agreements Regional? A Theory based on Noncooperative Networks
Ben Zissimos
- ▣ 660 - Networks and Farsighted Stability
Frank Page, Myrna Wooders, Samir Kamat,
- ▣ 669 - Representing Games as Coalition Production Economies with Public goods
Antoni Meseguer-Artola, Myrna Holtz Wooders and Juan-Enrique Martinez-Legaz

This paper is forthcoming in *Journal of Economic Theory*.

- ▣ 535 - Approximate Cores of Games and Economies with Clubs
Alexander Kovalenkov



CODE Working Papers - Unitat de Fonaments de l'Anàlisi Econòmica (UAB) and Institut d'Anàlisi Econòmica (CSIC) Working Paper Series

- ❑ 547.02 - Rivalry, Exclusion and Coalitions
Santiago Sánchez-Pagés
- ❑ 552.02 - Some things couples always wanted to know about stable matchings (but were afraid to ask)
Bettina Klaus and Flip Klijn
- ❑ 553.02 - On Games corresponding to Sequencing Situations with Precedence Relations
Herbert Hamers, Flip Klijn and Bas van Velzen
- ❑ 554.02 - Efficient Priority Rules
Lars Ehlers and Bettina Klaus
- ❑ 560.03 - An Ordinal Shapley Value for Economic Environments
David Pérez-Castrillo and David Wettstein
- ❑ 561.03 - Manipulation of Optimal Matchings via Predonation of Endowment
Gloria Fiestras-Janeiro, Flip Klijn and Estela Sánchez
- ❑ 566.03 - Resource-Monotonicity for House Allocation Problems
Lars Ehlers and Bettina Klaus
- ❑ 567.03 - Coalition Formation in a Contest Game with Three Heterogeneous Players
Marc Vorsatz
- ❑ 569.03 - Mergers, Investment Decisions and Internal Organisation
Albert Banal, Ines Macho-Stadler and Jo Seldeslachts

CORE Working Papers

- ❑ Equitable and Coalitionally Acceptable Allocations of CO₂ Emission Quotas
Vincent Van Steenberghe

This paper is forthcoming in *Journal of Economic Dynamics and Control* (Revised from 1998):

- ❑ Transfers to Sustain Core-Theoretic Cooperation in International Stock Pollutant Control
Germain M., Toint Ph., Tulkens H. and de Zeeuw, A.

This paper is forthcoming in *Resource and Energy Economics*:

- ❑ Simulating Coalitionally Stable Burden Sharing Agreements for the Climate Change Problem
Eyckmans, J. and Tulkens, H.
- ❑ 74.2002 - Impact-adjusted citations as a measure of journal quality
Rabah Amir
- ❑ 4.2003 - On the core of an economy with multilateral and multidimensional environment externalities
Charles Figuieres and Magali Verdonck
- ❑ 38.2003 - Merger performance under uncertain efficiency gains
Rabah Amir, Effrosyni Diamantoudi and Licun Xue
- ❑ 46.2003 - The gamma-Core and coalition formation
Parkash Chander

Forthcoming events

▣ **Workshop on coalition and network**
EUREQua, Université Paris-1 Panthéon-Sorbonne,
Maison des Sciences Economiques, June 10 – 11, 2003

The workshop is intended to be an informal working meeting for discussing papers, exchanging ideas and critiques. It is open to people having an interest in this topic, including students. A travel and accommodation reimbursement is foreseen for all the participants. For more information, please contact Tonia Lastapis (tonia@univ-paris1.fr; phone number: 33 (0)1 44 07 82 03).

Preliminary programme:

Tuesday 10/06

2.30 p.m.: Hubert Kempf
Welcome and Opening

2.45 – 3. 45 p.m.: Myrna Wooders - University of Warwick
«Dynamic club formation » (with T. Arnold)

3.45 – 4. 45 p.m.: Antony Ziegelmeyer (Iéna)
« Networks in experimental economics »

4.45 – 5.15 p.m.: Coffee Break

5.15 - 6.15 p.m.: Francis Bloch (GREQAM)
« When does universal peace prevail? Secession and group formation in rent seeking contests and policy conflicts » (with S. Sanchez Pages and R. Soubeyran)

Wednesday 11/06

9.00 – 10.00 a.m.: Rabah Amir (CORE)
« On mergers »

10.00 – 11.00 a.m.: Sergio Currarini (University of Venice and FEEM)
« On the stability of hierarchies in games with externalities »

11.00 – 11.30 a.m.: Coffee Break

11.30 – 12.30 a.m.: Sébastien Vivier-Lirimont (EUREQua)
« On the formation of banking networks »

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2.00 – 3.00 p.m.: François Fontaine (EUREQua)  
« Social networks and matching in labor markets »

3.00 – 4.00 p.m.: Matthew Jackson (Caltech, visiting EUREQua)  
« Partitioning a Network »

▣ **Theoretical Aspects of Rationality and Knowledge**  
**Bloomington, Indiana, USA, June 20-22, 2003**

The mission of the TARK conferences is to bring together researchers from a wide variety of fields – including Artificial Intelligence, Cryptography, Distributed Computing, Economics and Game Theory, Linguistics, Philosophy, and Psychology – in order to further our understanding of interdisciplinary issues involving reasoning about rationality and knowledge. Topics of interest include, but are not limited to,

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semantic models for knowledge, belief, and uncertainty, bounded rationality and resource-bounded reasoning, common sense epistemic reasoning, epistemic logic, knowledge and action, applications of reasoning about knowledge and other mental states, belief revision, and foundations of multi-agent systems. TARK IX will be coordinated with the 2nd North American Summer School in Logic, Language and Information (NASSLLI 2003; [www.indiana.edu/~nasslli](http://www.indiana.edu/~nasslli)). NASSLLI will offer TARK-related courses, and some talks will be shared by TARK and NASSLLI, allowing for interaction between prominent researchers and research students.

▣ **XV Italian Meeting on Game Theory and Applications (IMGTA)  
Urbino, Italy, July 9-12, 2003**

In the framework of XV IMGTA, five special sessions are foreseen:

*Dynamic Oligopoly Games*: the aim of this session is to present some recent developments in the mathematical modelling of oligopoly games, in particular dynamic oligopoly games, their applications and the mathematical methods for their study.

*Game Practice and Transportation*: the aim is to present a broad range of contributions concerning the applications of game theory to Transportation Economics and Policy.

A special session will be organised by Gianfranco Gambarelli in honour of Guillermo Owen, in occasion of his 65th birthday. This session is intended to include contributions from those who have worked, or intend to work, on the development of Owen's results both from a theoretical point of view (Multilinear Extension, a priori Unions, non-Atomic Games and so forth) and from an applicative point of view (in Finance, Politics, Economics, Environmental studies, and so forth).

A special session on *Voting and Coalition Formation* will close the event.

▣ **14th Game Theory Festival at SUNY  
Stony Brook, USA, July 17-29, 2003**

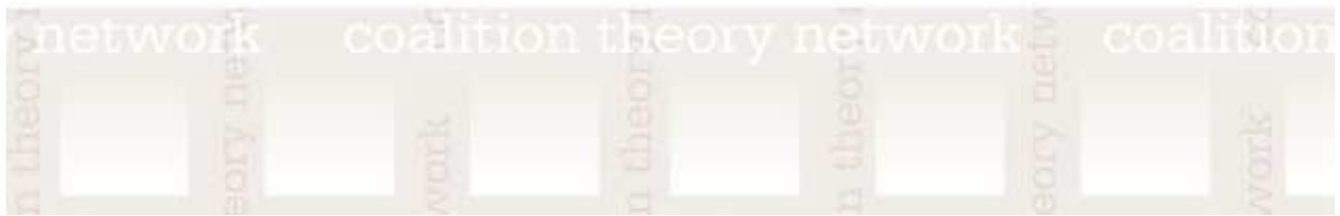
From 1990 to 2002, the International Summer Festival on Game Theory at Stony Brook has been a renowned academic gathering of researchers from all over the world. The 14th Summer Festival on Game Theory comprises two workshops and the international conference. The Workshop on "The Value at 50" will mark the 50th anniversary of the publication of Lloyd Shapley's paper "A Value for n-Person Games." The International Conference on Game Theory at Stony Brook has brought together both young and established researchers for a week of intense activity. Talks will focus on the theory as well as its applications. Among the speakers: Robert Aumann, Mort Canty Daniela de Farias, Olivier Gossner, Sergiu Hart, Ehud Kalai, Andy McLennan, Abraham Neyman, Dinah Rosenberg, Tim Roughgarden, David Schmeidler, Lloyd Shapley, Christian Shelton, Robert Simon, Sylvain Sorin, Bill Sudderth, Yair Tauman, Ted Turocy, Shmuel Zamir.

The second Workshop on "Experimental Economics and Game Theory" will be held on July 17-19.

▣ **Summer School on Game Theory and Operations Research  
Lavagna, Italy, September 8 – 20, 2003**

The Summer School on Game Theory is promoted by the CITG (Interuniversity Centre for Game Theory and its Applications).

The international summer school "Game Theory +" is an application oriented annual event, for graduate students and post docs. The main topic will be the Operations Research Games, i.e. games arising from Operations Research problems. This school will last for 2 weeks, plus a preliminary week "at home", via web, that will include basic Operations Research and Game Theory.



▣ **Logic, Game Theory and Social Choice 3 (LGS3)  
Certosa di Pontignano (Siena), Italy, September 11-14, 2003**

Following LGS1 (Tilburg 1999) and LGS2 (St.Petersburg 2001), LGS3 will bring into focus the developing theoretical connections between logic and game theory, game theory and social choice, logic and social choice. The conference program will consist of invited lectures and contributed papers.

The topics of LGS3 include, but are not limited to :

- Logic and Game Theory: game semantics, information flow in games, knowledge representation in games, category-theoretic and recursion-theoretic methods in game theory
- Game Theory and Social Choice: implementation, coalition formation, strategy-proofness
- Social Choice and Logic: rights-systems modelling, uses of deontic and fuzzy logics in social choice theory, category-theoretic and recursion-theoretic methods in social choice

▣ **XIX Coalition Theory Network Workshop  
Barcelona, Spain, January 30-31, 2004**

The next Coalition Theory Workshop will be hosted by CODE, Universitat Autònoma de Barcelona.

The programme topics will be: network formation in theoretical and applied context, matching and labour markets, collective choice mechanisms, economic unions.

The aim of the conference is to encourage research along the following lines:

1. Mechanism design in contexts where it is important to take into account the characteristics of those agents which cooperate among themselves, or the existing relationships between different members of society.
2. Markets through which teams are formed ( matching and labour markets in particular), and also collective choice mechanisms (rules of vote, methods to allocate public goods), where the groups formed by different agents have an impact on the nature and the stability of public decisions.
3. Incentives to communicate and form coalitions in various economic and social environments. In problems characterised by high degrees of irreversibility (such as sustainable development, exploitation of exhaustible resources, formation of communication infrastructures).

## Fund raising

On behalf of the CTN, FEEM has recently applied for financial support from the European Commission in the framework of the “Human Resources and Mobility” programme. More specifically, we have applied for complete funding of the next 6 meetings of the Coalition Theory Workshop as Series of Events in the programme “Marie Curie Conferences and Training Courses”. The application has been completed by Sergio Currarini (scientific contents and supervision) and by Silvia Bertolin (financial and organisational contents), with the collaboration of all the members of the CTN.

## Obituary

The Coalition Theory Network, and the whole scientific community, mourns the passing away of Professor Murat Sertel, due to a heart attack during the VIII Coalition Theory Workshop. Professor Sertel was Professor of Economics at the Bogazici University and Koc University (Istanbul), Editor of the Review of Economic Design and member of the Turkish National Academy of Science.