Trends in the European operations research congresses

Citation for published version (APA):

Tilanus, C. B. (1980). Trends in the European operations research congresses. *Interfaces*, 10(5), 33-38.

Document status and date:

Published: 01/01/1980

Document Version:

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.tue.nl/taverne

Take down policy

If you believe that this document breaches copyright please contact us at:

openaccess@tue.nl

providing details and we will investigate your claim.

TRENDS IN THE EUROPEAN OPERATIONS RESEARCH CONGRESSES*

C.B. Tilanus

University of Technology, Department of Industrial Engineering, Postbox 513, 5600 MB
Eindhoven, Netherlands

ABSTRACT. Since 1975 there have been three and a half European meetings conducted by the Association of European Operational Research Societies within IFORS. We outline OR in Europe, discuss pros and cons of European congresses, characterize their contents, and predict their future.

A European OR man visiting the US will usually remark "How well you know what everybody is doing!" An American staying in Europe will be surprised: "You don't even know what your neighbor across the border is doing!" To understand the state of affairs in Europe, consider that we come across (at least) 23 languages spoken in 30 countries in the area (see Table 1). Population is unevenly distributed over the area, and OR society membership is unevenly distributed over population. The iron curtain is still effective; behind it no OR societies are known to exist.

**TABLE 1. LANGUAGES, COUNTRIES, POPULATION,
AND OR SOCIETIES IN EUROPE.**

Language	Country	Population (in millions) ^a	OR society membership ^b
Icelandic	Iceland	0.2	—
Norwegian	Norway	4.1	194
Swedish	Sweden	8.3	402
Finnish	Finland	4.8	300
Danish	Denmark	5.1	250
English	U.K.	55.8	3246
	Ireland	3.2	95
	Malta	0.3	—
Dutch	Netherlands	13.9	511
	Belgium	9.8	275
	Luxembourg	0.4	—
French	France	53.3	2320
	Switzerland ^c	6.3	323
	Germany, Fed. Rep.	61.3	704
German	German Dem. Rep.	16.8	—
	Austria	7.5	130
Italian	Italy	56.7	321
Portuguese	Portugal	9.8	—
Spanish	Spain	37.1	344
Greek	Greece	9.3	347
Turkish	Turkey	43.2	130
Hebrew	Israel	3.7	212
Yugoslav	Yugoslavia	21.9	—
Russian	USSR	258.9	—
Polish	Poland	35.0	—
Czech	Czechoslovakia	15.1	—
Hungarian	Hungary	10.7	—
Romanian	Romania	21.7	—
Bulgarian	Bulgaria	8.8	—
Albanian	Albania	2.6	—
Totals		785.6	10,104

^aSource: UN Monthly Bulletin of Statistics, June, 1979.

^b IFORS Secretariat. All societies mentioned plus Yugoslavia are members or associate members of the Association of European Operational Research Societies within IFORS.

^c French, German, and Italian are spoken in Switzerland.

PROFESSIONAL; OR/MS EDUCATION

*Paper presented at ORSA/TIMS Joint National Meeting, Milwaukee, 15-17 October 1979.

Cross Section of Congresses in Europe

Where there are OR societies, there are congresses, but only a few are internationally accessible. Table 2 summarizes the numbers of papers and participants for the following congresses:

- ORS '79 — Operational Research Society, Annual Conference, Stirling, 4-7 September 1979. Most papers were invited; few were written up.
- AFCET '77 — Association Française pour la Cybernétique Economique et Technique, Congres 1977: "Modélisation et Maîtrise des Systèmes techniques, économiques, sociaux," Versailles, 21-24 November 1977. Proceedings published. The 1978 congress was devoted to informatics, and the 1979 congress to "Petits Groupes et Grands Systèmes."
- DGOR '79 — Deutsche Gesellschaft für Operations Research, Jahrestagung, Regensburg, 19-21 September 1979. Proceedings published.
- GfMÖOR '79 — Gesellschaft für Mathematik, Ökonomie und Operations Research, IV. Symposium über Operations Research, Saarbrücken, 10-12 September 1979. Proceedings published. GfMÖOR is not a member of IFORS.
- NOAK '78 — Seventh Nordic Congress on Operations Research, Elsinore, Denmark, 28-29 September 1978. No proceedings. At NOAK '79, Oslo, 24-25 September 1979, only 23 papers were presented.
- ORSA/TIMS '79 — ORSA/TIMS Joint National Meeting, Milwaukee, 15-17 October 1979.
- EURO I — Association of European Operational Research Societies within IFORS, First European Congress on Operations Research, Brussels, 27-29 January 1975.
- EURO II — Second European Congress on Operations Research, Stockholm, 29 November — 1 December 1976.
- TIMS/EURO — TIMS XXIII, XXIII International Meeting of The Institute of Management Sciences, cosponsored by the Association of European Operational Research Societies within IFORS, Athens, 25-27 July 1977.
- EURO III — Third European Congress on Operations Research, Amsterdam, 9-11 April 1979.

TABLE 2. CHARACTERISTICS OF CONGRESSES.

Congress	Total No.	Participants		Total No.	Papers		Papers per Participant
		% from Universities	% From Abroad		% theoretical	% in English	
ORS '79	397	21	4	61	33	100	.15
AFCET '77	639	41	11	112	78	0	.18
DGOR '79	356	46	7	131	82	5	.37
GfMÖOR '79	259	•	34	169	96	70	.65
NOAK '78	105	42	47	50	52	100	.48
ORSA/TIMS '79	932	46	5	711	73	100	.76
EURO I ('75)	466	%	75	115	69	90	.25
EURO II ('76)	481	40	59	171	64	100	.36
TIMS/EURO ('77)	548	%	91	661	63	100	1.21
EURO III ('79)	508	58	67	276	64	99	.54

The significance of the data of Table 2 is as follows; the numbers of papers and participants indicate the scale of the congress, and their ratio indicates how "scientific" it is. If the paper/participant ratio approaches unity we have a supply-push congress where people come to sell their research products. The ratio can exceed unity for two reasons: (a) people presenting multiple papers, (b) papers counted as programmed and no participants registering to present them.

Other indicators of how scientific a congress is are the percentage of participants that are from universities, and the percentage of papers that are theoretical. The latter percentage is subject to measurement error, although, I hope, not to bias. It is difficult to establish whether a paper is applied or theoretical from an abstract that may be as brief as 50 words. The paper may even be "theory masquerading as practice," and, besides, where do you draw the border line? Within the following range of qualifications I have indicated where I have tried to draw the border line. (A paper that may be applicable is classified as theoretical as long as it has not been applied.)**

Classification of Papers

APPLIED

- In permanent use for the management of organization
- Tried in the management of an organization and found useful; will be continued
- Tried in the management of an organization and failed
- Analyzed with real data to the benefit of management
- Surveys and tutorials of applications

BORDER LINE

THEORETICAL, THOUGH APPLICABLE

- Tested by an Operations Researcher on real-life scale and shown to be successful; implementation is proposed
- Tested on a real-life scale and shown to be not successful
- Tested on sample data or a simplified problem and found to be successful; further development proposed
- Tested on a small scale and shown to be not successful
- Algorithms implemented on a computer, with numerical results available
- Analyzed with real data to the benefit of an OR professional

PURE THEORY

- Algorithms proved to be more efficient than others
- Theorems proved for situations that may occur in real life
- Philosophy, mathematics, applied mathematics, puzzles, and games not referring to relevant problems in the management of organizations
- Surveys and tutorials of theory

Two columns in Table 2 are indicators of how "international" a congress is. They are the percentage of participants from abroad, and the percentage of papers in English. Of course English papers only make a congress internationally accessible; the congresses in English speaking countries show that the international OR community does not always take advantage of this feature.

**Editor's Note: Clearly, an appropriate standard.

We conclude the following from our look across Europe (Table 1) and our visit to national OR congresses (upper rows of Table 2; the ORSA/TIMS Milwaukee meeting is put in for comparison):

- Europe suffers from linguistic and political division.
- OR societies vary greatly in size, and in relation to population.
- The national OR congresses may be applied or theoretical, but none are very "international."
- There is a challenge for the Association of European Operational Research Societies to overcome the barriers and promote the mutual benefit of international communication.

Of course, we have the triennial world-wide IFORS conferences which are sometimes in Europe (see Table 3), but their function in international communication is limited, certainly compared to a "sister" federation like IFIP. I can think of four reasons:

- (1) There is less money at stake in OR than in information processing.
- (2) World-wide traveling costs are still too high an obstacle for Operations Researchers.
- (3) Both participants and papers from the different countries are subject to quotas (although it seems these are not even binding).
- (4) The conferences are bilingual, which makes them clumsy; international conferences should be either unilingual or multilingual.

TABLE 3. IFORS AND IFIP CONFERENCES.

	IFORS Conference ^a	No. of parti- cipants	No. of papers	IFIP Conference ^b	No. of parti- cipants
I	1957 Oxford	250	45		
II	1960 Aix-en-Provence	350	77		
III	1963 Oslo	450	82	1962 Munich	2800
IV	1966 Boston		86	1965 New York	5000
V	1969 Venice	450	66	1968 Edinburgh	3700
VI	1972 Dublin	500	65	1971 Ljubljana	2500
VII	1975 Tokyo/Kyoto	329	45 (+ 61)	1974 Stockholm	4000
VIII	1978 Toronto	260	52 (+ 28)	1977 Toronto	3600

^aSource: IFORS Secretariat.

^bSource: AFCET Bulletin, April 1979.

EURO K, $K = 1, 2, 2\frac{1}{2}, 3$

Not until 1975 was the Association of European Operational Research Societies (EURO) within IFORS founded. The main results so far have been:

- Three and a half European congresses (see the lower part of Table 2 and Table 4)
- Eleven European Working Groups
- The *European Journal of Operational Research*, bimonthly during 1977-1979, monthly as of 1980.

We focus our attention on the European congresses; note that EURO/TIMS only counts half because it is a predominantly US affair. A conscious effort has been made to involve the eastern European countries in EURO III.

TABLE 4. EURO K PARTICIPANTS BY COUNTRY,
AND EURO III REGRESSION DATA.

Country	EURO I Brussels 1975	EURO II Stockholm 1976	TIMS/EURO Athens 1977	EURO III Amsterdam 1979	Economy class roundtrip KLM ticket to Amsterdam (Dfl.)	Standardized residual participation
Austria	2	2	•	5	1030	-0.34
Belgium	118 ^a	30	24	27	258	0.26
Denmark	17	18	15	14	832	0.24
Finland	8	25	9	20	1414	0.78
France	35	24	26	21	504	-0.75
West Germany	61	27	29	37	436	0.35
Greece	1	2	48 ^a	9	1678	-0.01
Ireland	7	1	1	5	806	-0.30
Israel	1	0	10	6	2236	-0.02
Italy	14	9	6	44	826	1.26
Netherlands	97	55	20	169 ^a		
Norway	2	18	3	2	1134	-1.41
Spain	6	6	5	6	1074	-0.64
Sweden	7	197 ^a	13	19	1244	0.51
Switzerland	15	9	6	12	584	-0.22
Turkey	0	6	0	7	1702	0.25
United Kingdom	62	36	42	56	506	0.06
Yugoslavia	2	1	•	10		
EURO members	455	466	257	469		
Canada	1	0	32	13		
Hungary	3	1	•	4		
Poland	2	0	•	5		
Romania	1	0	•	3		
USA	0	4	222	11		
Other	4	10	37	3		
Total	466	481	548	508		

^aHost country for this meeting.

From the data we draw the following conclusions:

- The EURO conferences are truly international.
- They are quite theoretical and seem to be getting more so.
- Geographical distances still play a role.

Distance and size of the OR societies can, to a certain degree, explain participation by countries. We have tried to explain participation by countries in EURO III by regression on OR society membership, population, national income, national income per

capita, and air fare of a roundtrip ticket from the main city to Amsterdam. OR society membership and air fares explained participation as well as other variables and we found, by doing a log-log regression analysis:

$$\ln(\text{participation}) = 2.96 + 0.52 \ln(\text{membership OR Society}) \\ - 0.51 \ln(\text{air fare}),$$

where the standard errors on the coefficients 0.52 and 0.51 are 0.21 and 0.34, respectively, and the correlation coefficient is 0.73. This means that elasticities of demand for participation are roughly one-half; in other words, if society membership increases 1%, participation increases 0.5%; if air fare increases 1%, participation decreases 0.5%. (What is true for air fare should also be true for the registration fee.) The last column of Table 4 presents the standardized unexplained residuals from the regression analysis. Finland and Italy participated much more than expected according to the regression plane: they are the two countries that organized group travel at a reduced rate to EURO III. France and Norway participated less than expected: the French society AFCET consists of only about one quarter OR people (the rest are mainly computer scientists); Norway seems to be an introverted country.

The Future

At the time of writing, future OR conferences in Europe are:

- EURO IV, Cambridge, U.K., 22-25 July 1980
- IFORS IX, Hamburg, Germany, 20-24 July 1981
- EURO V/TIMS XXV International Meeting, Lausanne, Switzerland, second week of July 1982.

Extrapolating from earlier conferences, it must be expected that EURO *K* will become an even more theoretical and academic affair, unless a determined effort is made to attract papers on applications and participants from business and industry. The IFORS conference will again be hampered by quotas and formalism. In the joint conference with TIMS, special attention should be paid to the no-show problem. (The no-show percentage was estimated at 30% in TIMS/EURO in Athens, and was registered as 20% in EURO III.) Not much success is expected from efforts to involve the eastern European countries.

Overall participation in the EURO conferences should steadily increase. The total potential is after all about equal to the US (joint EURO membership is 10,100; joint ORSA/TIMS membership is about 10,000). But communication within Europe will never equal that in the US due to the linguistic and political barriers. Many OR people are excluded from international communication because they have not mastered English, or are unable to leave their countries. On the other hand, Europeans may benefit more from communication, due to national and cultural differences. The European conferences fill a clear gap and are expected to play an increasingly important part in European communication.