

**Journal Citation Studies. 31.  
Italian Journals.**

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In our on-going series of regional journal analyses we turn now from East Europe<sup>1</sup> to Italy. The 34 journals covered in this analysis are listed in Figure 1. Another eleven journals were covered by the *Science Citation Index*<sup>®</sup> (*SCI*<sup>®</sup>) in 1974. However, either no issues of them were received that year, or the issues arrived too late to be included in compilation of the *Journal Citation Reports*<sup>®</sup>, on which this study is based.<sup>2</sup>

Figure 1 gives for each journal its impact; the number of times it was cited in 1974; the number of times its 1972 and 1973 articles were cited in 1974; and the number of articles it published in 1972 and 1973. The journals are ranked by impact.

Only two Italian journals achieved an impact greater than the international average of 1.015.<sup>3</sup> One of them is *Journal of Submicroscopic Cytology* (1.184), published in English. The other is *Archives Italiennes de Biologie* (1.061), also published in English, despite its French title. Ranking third in impact (0.994) is *Nuovo Cimento*, the most cited of the Italian journals. This will not surprise physicists anywhere since it is an international journal.

The 34 journals constitute just about 1.4% of the 2443 journals processed for the *SCI* in 1974. They published 3016 source items that year, about 0.8% of the total 400,971 source items from all *SCI* journals. Of the more than 5.2 mil-

lion references processed for the 1974 *SCI*, these 34 Italian journals produced 46,906--about 0.9% of the total.

Thus, in comparison with the 'average' journal, the Italian journals published fewer articles than the average (88 compared with 165), but the articles contained slightly more than the international number of references--about 16 instead of 13.

As I've noted in other regional studies, the regional-journal output doesn't represent the regional-research output. ISI's *Who Is Publishing in Science*<sup>®</sup> shows that in 1974 at least 5662 articles were published in which the address of the first author was Italian.<sup>4</sup> The 34 Italian journals accounted at most for only 53% of those research reports. The percentage must be even lower, considering that some first-class Italian journals--such as *Nuovo Cimento*, *Lettere al Nuovo Cimento*, *Tumori*--attract articles from other countries. In other words, probably as much as 50% of Italian research is published abroad.

Figure 2 shows the 50 journals most often cited by the Italian journals. Figure 3 shows the 50 journals that most often cited them. Both the figures have columns giving the number of references or citations made or received by each listed journal, the number of references or citations made or received by the Italian group, the number of self-citations, and columns for percentages

**Figure 1. Italian journals indexed by the Science Citation Index in 1974.** Journals are listed in descending order of impact factor. **A** = impact factor. **B** = number of times journal was cited in 1974. **C** = 1974 citations of articles published by the journal in 1972 and 1973. **D** = number of articles published by the journal in 1972 and 1973. ( $A = C/D$ ).

	A	B	C	D		A	B	C	D		
1.	1.184	J. Submicr. Cytol.	140	45	38	18.	0.192	Ing. Chim. Ital.	40	15	78
2.	1.061	Arch. Ital. Biol.	673	70	66	19.	0.156	Riv. Ital. Geofisica	21	17	109
3.	0.994	Nuovo Cimento	5474	999	1005	20.	0.130	Acta Genet. Med.	122	6	46
4.	0.982	Acta Diabet. Lat.	281	56	57	21.	0.120	Atti Ass. Genet. Ital.	44	10	83
5.	0.775	Lett. Nuovo Cim.	1707	929	1230	22.	0.112	Metallurgia Ital.	69	20	179
6.	0.643	Gazz. Chim. Ital.	1305	166	258	23.	0.107	Boll. Soc. Ital. Biol.	471	78	731
7.	0.540	Ital. J. Biochem.	118	27	50	24.	0.098	Ann. Geofisica	60	6	61
8.	0.466	Caryologia	362	55	118	25.	0.094	Giorn. Fis. San.	8	3	32
9.	0.390	Farmaco Ed. Prat.	104	46	118	26.	0.080	Ric. Matematica	15	2	25
10.	0.363	J. Nucl. Biol. Med.	96	29	80	27.	0.075	Giorn. Gerontol.	73	166	258
11.	0.344	Farmaco Ed. Sci.	196	64	186	28.	0.060	Riv. Met. Aeronaut.	4	3	50
12.	0.318	Acta Gerontol.	17	14	44	29.	0.049	Gaslini	3	2	41
13.	0.311	J. Cardiovasc. Surg.	349	61	196	30.	0.045	Surgery in Italy	4	3	67
14.	0.306	Acta Vitam. Enzym.	24	11	36	31.	0.044	Atti Acc. Lincei Fis.	267	18	405
15.	0.283	Annali di Chimica	910	21	100	32.	0.043	FAO Plant Protect.	30	3	69
16.	0.280	Tumori	127	21	75	33.	0.040	Energia Nucleare	59	4	100
17.	0.210	Agrochimica	108	21	100	34.	0.007	Elettrotecnica	6	1	151

that relate these counts to each other. The last column in each figure gives each journal's impact.

In 1974 the Italian journals cited 4691 different published items in their 46,906 references. The 50 journals listed in Figure 2, 1% of the total published items cited, accounted for 27% of the citations in the references of the Italian journals. Of the fifty journals only five are Italian: *Nuovo Cimento*; *Lettere al Nuovo Cimento*; *Il Farmaco, Edizione Scientifica*; *Gazzetta Chimica Italiana*; and *Bollettino della Societa Italiana di Biologia Sperimentale*. As a whole, the list is roughly half physics and half biochemistry and medicine. The physics journals--probably boosted by *Nuovo Cimento's* presence in the citing group--are at the top of the list. It is interesting to note that except for the Italian journals, all the journals in Figure 2 (the

*cited* journals) are English-language. And only one of the five Italian journals (*Boll. Soc. Ital. Biol. Sper.*) publishes mainly in Italian. The other four are published in English or English and Italian (*Farm. Ed. Sci.*).

Figure 3 shows the 50 SCI-covered journals that *cited* Italian journals most. The Italian journals were cited by 1094 different SCI journals 12,976 times. The 50 journals in Figure 2--about 5% of the total 1094--accounted for 57% of the citations received by Italian journals--7,363 of the total 12,976. Only twelve of the fifty citing journals are Italian. In fact, almost 70% (5094/7363) of the citations summarized in Figure 3 come from non-Italian journals. Physics again predominates, accounting for 3/5 of the list; chemistry and medicine about equally divide the rest. There are six journals that are neither Italian nor

**Figure 2. Journals that were cited by Italian journals.** Journals are listed in order of their citation by the Italian group. **A** = total citations by all journals. **B** = total citations by Italian journals. **C** = self-citations. **D** = **B/A** (Italian citations in terms of total citations). **E** = **C/A** (self-citations in terms of total citations, the self-cited rate). **F** = **C/B** (self-citations in terms of Italian citations). **G** = impact factor.

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
1. Physical Rev.	50828	1291		2.5			
2. Physical Rev. Lett.	29275	933		3.2			5.059
3. Nuovo Cimento	5474	892	606	16.3	11.1	67.9	0.994
4. Physical Rev. D.	9441	829		8.8			2.723
5. Physics Lett. B.	9958	763		7.7			3.428
6. Nuclear Phys. B.	6220	698		11.2			2.646
7. Lett. Nuovo Cimento	1707	512	320	30.0	18.7	62.5	0.755
8. J. Amer. Chem. Soc.	98995	392		0.4			4.383
9. Lancet	37047	371		1.0			6.677
10. Physical Rev. B.	16104	277		1.7			2.864
11. Nuclear Phys. A.	12176	271		2.2			2.423
12. J. Biol. Chem.	81354	267		3.3			5.843
13. Nature	59206	260		0.4			3.636
14. Annals Physics	4347	228		5.2			2.128
15. J. Math. Phys.	3820	215		5.6			1.046
16. New Engl. J. Med.	26726	184		0.7			8.364
17. Prog. Theor. Physics	3864	172		4.5			1.421
18. J. Chem. Physics	62041	168		0.3			2.918
19. Farmaco. Ed. Sci.	196	167	164	85.2	83.7	98.2	0.344
20. Biochim. Biophys. Acta	51491	160		0.3			3.120
21. J. Chem. Soc.	19955	155		0.8			
22. Science	47505	151		0.3			5.412
23. J. Cell Biol.	19103	148		0.8			6.770
24. J. Thor. Card. Surg.	4093	147		3.6			1.480
25. Gazz. Chim. Ital.	1305	145	117	11.1	9.0	80.7	0.643
26. Brit. Med. J.	20748	144		0.7			3.556
27. J. Clin. Invest.	24768	138		0.6			6.992
28. Boll. Soc. Ital. Biol. Sper.	471	136	93	28.9	19.7	68.4	0.107
29. J. Amer. Med. Assoc.	17211	134		0.8			3.068
30. Proc. Nat. Acad. Sci. USA	46917	133		0.3			8.989
31. Nuclear Phys.	4064	127		3.1			
32. Proc. Soc. Exp. Biol. Med.	18171	126		0.7			1.471
33. Physical Rev. A	9870	122		1.2			2.613
34. Diabetes	3952	119		3.0			3.941
35. Biochemical J.	31563	118		0.4			3.627
36. J. Exp. Med.	20699	116		0.6			11.874
37. J. Organ. Chem.	20539	116		0.6			1.495
38. J. Physiology (London)	22520	115		0.5			4.495
39. Proc. Roy. Soc. London A	12224	114		0.9			2.215
40. Circulation	14461	113		0.8			6.834
41. Arch. Surgery	5491	110		2.0			1.462
42. Rev. Mod. Physics	5186	110		2.1			21.500
43. J. Immunology	15826	108		0.7			5.112
44. Gastroenterology	8693	103		1.2			5.394
45. Physical Rev. C.	5410	101		1.9			2.299
46. Ann. Surgery	7459	100		1.3			2.129
47. J. Clin. Endocr. Metab.	11645	100		0.9			5.170
48. Surface Science	10275	100		1.0			2.446
49. J. Geophys. Res.	15281	96		0.6			2.536
50. Physics Letters	15666	92		0.6			

**Figure 3. Journals that cited Italian journals.** Journals are listed in order of their citation of the Italian group. **A** = total citations of all journals. **B** = total citations of Italian journals. **C** = self-citations. **D** = **B/A** (Italian citations in terms of total citations). **E** = **C/A** (self-citations in terms of total citations, the self-citing rate). **F** = **C/B** (self-citations in terms of Italian citations). **G** = impact factor.

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
1. Physical Rev. D.	16727	1102	--	6.6	--	--	2.723
2. Nuclear Phys. B.	9617	838	--	8.7	--	--	2.646
3. Nuovo Cimento	6066	794	606	13.1	10.0	76.3	0.994
4. Lett. Nuovo Cimento	4486	603	320	13.4	7.1	53.1	0.755
5. Physics Lett. B.	7860	357	--	4.5	--	--	3.428
6. Nuclear Phys. A.	18463	252	--	1.4	--	--	2.423
7. Prog. Theor. Phys.	5970	227	--	3.8	--	--	1.421
8. Sov. J. Nucl. Phys.	5667	203	--	3.6	--	--	0.549
9. Farmaco Ed. Sci.	1304	194	164	14.9	12.6	84.5	0.344
10. J. Math. Physics	3745	189	--	5.1	--	--	1.046
11. Annals Physics	3029	144	--	4.8	--	--	2.128
12. Physical Rev. C.	13095	130	--	1.0	--	--	2.299
13. Physical Rev. Lett.	11203	130	--	1.2	--	--	5.059
14. Brain Res.	19626	127	--	0.6	--	--	3.104
15. Gazz. Chim. Ital.	2219	122	117	5.5	5.3	95.9	0.643
16. Boll. Soc. Ital. Biol. Sper.	1748	114	93	6.5	5.3	81.6	0.107
17. J. Physics A	3334	93	--	2.8	--	--	1.195
18. Giorn. Gerontol.	1012	91	66	9.0	6.5	72.5	0.075
19. Physical Rev. B	27280	88	--	0.3	--	--	2.864
20. Rev. Mod. Physics	3731	84	--	2.3	--	--	21.500
21. Arch. Ital. Biol.	615	83	80	13.5	13.0	96.4	1.061
22. Physical Rev. A.	13126	77	--	0.6	--	--	2.613
23. J. Cardiovasc. Surg.	1251	65	37	5.2	3.0	56.9	0.311
24. Acta Physica Austriaca	953	62	--	6.5	--	--	0.546
25. Ann. Sclavo	--	59	34	--	--	57.6	--
26. Boll. Inst. Sieroter. Milan	--	59	50	--	--	84.7	--
27. J. Organ. Chem.	21976	59	--	0.3	--	--	1.495
28. Tetrahedron	13059	57	--	0.4	--	--	1.576
29. Phys. Stat. Sol. B.	9465	54	--	0.6	--	--	1.113
30. Canadian J. Phys.	4465	51	--	1.1	--	--	1.038
31. J. Organomet. Chem.	22699	49	--	0.2	--	--	2.392
32. Acta Phys. Hung.	1206	48	--	4.0	--	--	0.286
33. Exp. Brain Res.	3257	48	--	1.5	--	--	3.596
34. Experientia	9248	48	--	0.5	--	--	0.883
35. Farmaco. Ed. Prat.	832	48	33	5.8	4.0	68.8	0.390
36. J. Heterocyclic Chem.	2893	47	--	1.6	--	--	0.756
37. J. Chem. Physics	33404	46	--	0.1	--	--	2.918
38. Zh. Eksp. Teor. Fiz.	6043	45	--	0.7	--	--	1.195
39. Zschr. Physik	5961	44	--	0.7	--	--	1.340
40. Physica	4490	43	--	1.0	--	--	0.969
41. Exp. Neurol.	4431	42	--	0.9	--	--	1.827
42. Usp. Fiz. Nauk	5957	42	--	0.7	--	--	1.514
43. EEG Clin. Neurol.	2344	40	--	1.7	--	--	1.493
44. J. Chem. Soc. Perkin	20327	40	--	0.2	--	--	1.348
45. Ann. Rev. Nucl. Sci.	1837	38	--	2.1	--	--	3.783
46. Izv. Akad. Nauk SSSR Fiz.	4871	38	--	0.8	--	--	0.440
47. J. Neurophysiology	2959	38	--	1.3	--	--	4.537
48. Acta Diabetol. Latina	1012	37	36	3.7	3.6	97.3	0.982
49. Inorg. Chem.	15048	37	--	0.2	--	--	2.457
50. J. Inorg. Nucl. Chem.	9026	37	--	0.4	--	--	0.962

English-language: three are Russian and three German.

If you remove the few Italian journals from the lists in Figures 2 and 3, the lists would look like so many others we have published. The cited journals in Figure 2 might come from any highly cited list. Despite the heavy physics orientation, the top 25 includes such ever-present journals as *Lancet*, *Journal of Biological Chemistry*, *Nature*, *New England Journal of Medicine*, *Science*, *Journal of Cell Biology*. The same is true of the citing list in Figure 3. Remove the Italian journals and one is left with a list of the significant journals of physics, many of the significant journals of chemistry, and a few specialized journals like *Brain Research*, *Experimental Neurology*, *EEG and Clinical Neurology* and *Journal of Neurophysiology*. The presence of this neurological group seems to indicate a significant emphasis in Italian biomedical research.

The low impact of the Italian journals should be cause for concern. I thought it possible that publication and delivery delays might be responsible. Impact is calculated by using 1974 citations of 1972 and 1973 articles. But recalculating impact on the basis of 1974 citations of 1971 and 1972 articles makes little difference. *Nuovo Cimento's* impact drops from 0.994 to 0.929. *Gazzetta Chimica*

*Italiana* improves slightly from 0.643 to 0.757. *Tumori* shows greater improvement--from 0.280 to 0.703. But the recalculation doesn't push any of the impacts up to the average. Perhaps the Italians, like the Latin-Americans, should consider the consolidation of journals, as suggested earlier.<sup>5</sup> It seems obvious that Italian journals are not attracting the best product of Italian research.

The probable advantages of consolidation should, in my opinion, be considered by the publishers of the *Minerva* series of Italian medical journals. There are about 20 in the series, but in 1974 only *two* were cited more than 100 times by all *SCI*-covered journals. *Minerva Medica* was cited 227 times, and *Minerva Pediatrica* 118 times. In neither case was this enough to put them on the list in Figure 2. In previous regional studies we've found that at least one or two 'national' medical journals turned up in such lists. The *Minervas'* fragmentation of Italian medical publication seems to me to account for the fact that in this study none did.

In a future essay we will list the most highly cited articles from the Italian journals for the period 1961-1975. However, a more important future analysis will take into account the significant Italian research published outside Italy.

1. Garfield E. Journal citation studies. 29. East European journals. *Current Contents\** (CC\*) No. 45, 8 November 1976, p. 5-12.
2. ----- *Journal citation reports; a bibliometric analysis of references processed for the 1974 Science Citation Index*. Science Citation Index 1975 Annual, vol. 9. (Philadelphia: Institute for Scientific Information®, 1976).
3. ----- Significant journals of science. *Nature* 264:609-15, 1976.
4. *Who is publishing in science, 1975 annual; an interdisciplinary directory of scientists and scholars in the life, physical, social, and applied sciences*. (Philadelphia: Institute for Scientific Information, 1976), p. 8. -- See "Statistical summaries of author address frequency by geographical distribution".
5. Garfield E. Journal citation studies. 26. Latin-American journals. CC No. 37, 13 September 1976, p. 5-11.