

SCIENCE'S COMPASS

strated by me and my colleagues (9, 15) and by others (16), and that cancer may be more effectively prevented by controlling aneuploidizing agents than by controlling conventional mutagens.

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References

1. B. R. Brinkley and T. M. Goepfert, *Cell Motil. Cytoskel.* **41**, 281 (1998).
2. W. L. Lingle, W. H. Lutz, J. N. Ingle, N. J. Miahle, J. L. Salisbury, *Proc. Natl. Acad. Sci. U.S.A.* **95**, 2950 (1998); G. A. Pihan *et al.*, *Cancer Res.* **58**, 3974 (1998).
3. T. Boveri, *Zur Frage der Entstehung Maligner Tumoren* (Fischer, Jena, Germany, 1914).
4. K. Fukasawa, T. Choi, R. Kuriyama, S. Rulong, G. F. Vande Woude, *Science* **271**, 1744 (1996).
5. H. Zhou *et al.*, *Nature Genet.* **20**, 189 (1998).
6. D. P. Cahill *et al.*, *Nature* **392**, 300 (1998).
7. C. Lengauer, K. W. Kinzler, B. Vogelstein, *ibid.* **386**, 623 (1997).
8. N. B. Atkin and M. C. Baker, *Cytogenet. Cell Genet.* **53**, 58 (1990); S. Heim and F. Mitelman, *Cancer Cytogenetics* (Wiley-Liss, New York, 1995); A. A. Sandberg, *The Chromosomes in Human Cancer and Leukemia* (Elsevier Science, New York, 1990).
9. R. Li *et al.*, *Proc. Natl. Acad. Sci. U.S.A.* **94**, 14506 (1997).
10. P. Duesberg, C. Rausch, D. Rasnick, R. Hehlmann, *ibid.* **95**, 13692 (1998).
11. D. Rasnick and P. Duesberg, *Biochem. J.* **340**, 621 (1999).
12. A. Cornish-Bowden, in *Biotechnology*, H.-J. Rehm and G. Reed, Eds. (VCH, Weinheim, Germany, 1995), pp.

121–136; D. Fell, *Understanding the Control of Metabolism* (Portland Press, London and Miami, 1997).


13. J. Cairns, *Nature* **289**, 353 (1981).
14. J. German, in *Chromosomes and Cancer*, J. German, Ed. (Wiley, New York, 1974), pp. 601–617.
15. P. Duesberg *et al.*, in *Technological and Medical Implications of Metabolic Control Analysis*, A. Cornish-Bowden and M. L. Cardenas, Eds. (Kluwer Academic, Dordrecht, Netherlands, in press).
16. J. M. Parry *et al.*, *Mutat. Res.* **353**, 11 (1996); M. Ciminno, R. R. Tice, J. C. Liang, *ibid.* **167**, 107 (1986); K. G. Jensen, A. Oenfelt, H. E. Poulsen, J. Doeheimer, S. Loft, *Carcinogenesis* **14**, 2115 (1993); A. Matsuoka *et al.*, *Mutagenesis* **12**, 365 (1997); M. J. Aardema *et al.*, *Mutat. Res.* **410**, 3 (1998).

Eastern Europe's Research Gamble: The Czech Perspective


At the beginning of 1999, the new Framework 5 research program of the European Union was launched. Ten formerly socialist European countries have been admitted as associated participants. On this occasion, Robert Koenig published an article (News Focus, 1 Jan., p. 22) discussing the level and current problems of science in those countries.

We would like to point out some problems with the treatment of the data on citation statistics and offer a few additional comments on the subject. Having analyzed in detail the data provided by the Institute

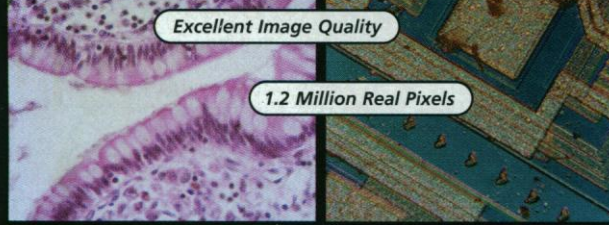
for Scientific Information (ISI), we conclude that the table on citation impacts in Koenig's article is based on an option that allows the user to extract the citation impact for a 5-year period, 1993 to 1997. This particular choice seems unfair, specifically for the Czech and Slovak republics. Czechoslovakia split into two states, the Czech Republic and the Slovak Republic, at the beginning of 1993. ISI provides independent statistics for the Czech and Slovak republics only from 1994 on. The split of the former Soviet Union and Yugoslavia occurred earlier. Therefore, the new states formed on these territories have had separate representations in the ISI database since 1993. Consequently, only the 4-year citation impact for the Czech and Slovak Republic was compared with the 5-year impact for the other countries in the table. We recalculated the citation impacts for all the countries listed in the table for the 4-year period 1994 to 1997 to make them directly comparable with the data available for the Czech and Slovak republics. After this recalculation, the Czech Republic becomes 22nd and the Slovak Republic 27th out of 33 European countries, instead of 29th and 33rd, as stated in Koenig's article.




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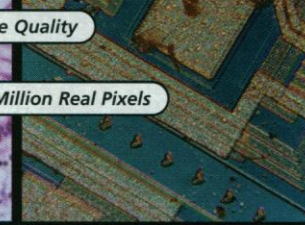
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It may be useful to recall that the typical citation half-time of the journals followed by ISI is 4 to 10 years or even more. Therefore, the citation impact from a recent period may not be the most suitable measure of scientific output. Perhaps more interesting is the secular evolution of the citation impact for Czechoslovakia and the Czech Republic. The acceleration, starting around 1991, that is, after the fall of the communist system, is notable. This acceleration started at the same time that the political barriers preventing free contacts of Czechoslovak scientists and their Western colleagues were removed, a promising indication for the future.

No doubt the community of Czech scientists cannot be satisfied with their current citation impact. Even among ex-socialist countries, the Czech Republic falls behind Hungary, Estonia, and Poland. A more detailed study will be needed to find out how much this can directly be ascribed to a lower quality of Czech publications in comparison with those from other countries. Many of us still remember too well that especially in the period after the Soviet invasion in 1968, Czechoslovakia became one of the most isolated socialist countries. Many Czech and Slovak scientists who had been working abroad, often with remarkable success, were forced to sever contacts with science in their home country. The situation was better in Poland and Hungary. Polish and Hungarian scientists who decided to live abroad, even without the permission of their Soviet-controlled governments, did not lose the links to their home institutions.

There were also other barriers that should be considered in a comprehensive study of the subject. Yet, we prefer to see positive signs of future development. For example, in 1991, Czechoslovak astronomers decided to be the first community from all the ex-socialist countries to join their national journal, *Bulletin of the Astronomical Institutes of Czechoslovakia*, with the largest European astronomical journal, *Astronomy and Astrophysics*. This change was followed by an increase in the number of their accepted and published papers.

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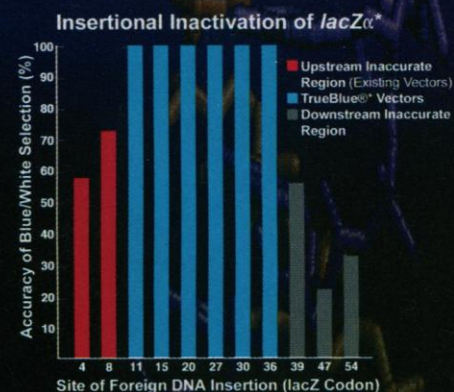
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