

## Obituary



**Hariolf Grupp**  
**3rd July 1950–20th January 2009**

Hariolf Grupp tragically died by an accident on 20 January 2009 in Karlsruhe. His untimely death is a great loss to the community of scholars in innovation economics. In this international community, he was one of the few outstanding researchers with an enormously broad and deep understanding of the different elements of innovation systems and their mutual interaction.

Hariolf Grupp worked on a variety of different topics. His main focus was on quantitative economics. In this context, he used all types of indicators referring to production, foreign trade, employment, qualification, research and development (R&D), innovation and he introduced a general classification of products and sectors into different levels of R&D and knowledge intensity. He was decisively involved in developing advanced methods of patent analysis aiming at improving the analysis of technological innovation and measuring technological change.

One of his specific interests was the international comparison of scientific performance and the interaction of science and technology. For this purpose, he intensively employed bibliometric methods. A particular concern was the careful use of these indicators in order to avoid misleading artefacts. This endeavour is documented best in his seminal book “Foundations of the Economics of Innovation: Theory, Measurement, and Practice”.

He also engaged in developing new indicators, in particular in “technometrics”, which is based on sets of technical product features. Another example can be found in the quantitative approaches to describing innovation in the service sector.

Furthermore, in the 1990s he was one of the pioneers of the foresight process in Germany, Europe and many other countries. He developed this activity on the basis of

intensive contacts with Japanese colleagues. In many other fields, he cooperated closely with scholars all around the world, with whom he had built up a strong and effective network. He was a central figure in the international community engaged in studying science, technology and innovation and he contributed substantially to the cohesion of this network.

The example of foresight is characteristic for his keen sense of how scientific insights could be related to, and implemented into, political practice. In this work he clearly benefited from his previous experience of working in the Federal Ministry of Research and Technology before becoming an academic researcher. Another instance of linking scientific analyses and policy issues is his critical analysis of composite indicators which are increasingly being applied to generate illustrative but oversimplified and therefore often misleading rankings in science and technology.

Hariolf Grupp made many excellent contributions to the methodological and theoretical development of science, technology and innovation indicators. His research was primarily driven by the analysis of inspiring research questions. To this end, he used indicators as 'intelligent' instruments to find adequate answers. Therefore he preferred tailor-made indicators to standard ones, for instance, for investigating knowledge-intensive services or specific leading-edge technologies. For him, indicators were not an end in themselves, but advanced tools which could be used to clarify the complex interconnections between the different elements of innovation systems.

In recognition of his rich and thorough expertise, he was appointed a member of various top-level commissions and boards in science and policy. Here he stimulated important debates and made a considerable impact. He was active in the editorial board of various leading journals, particularly of *Scientometrics*.

The direct link between his work on indicators and science and innovation policy is reflected specifically in his outstanding contributions to the development of a regular report on innovation indicators to the German government, which was already initiated in the 1980s. This activity was recently transferred to the Commission of Experts for Research and Innovation, newly established by the German government. Hariolf Grupp actually was the Deputy Chairman of this important commission.

It was always a tremendous pleasure to work with him and to be stimulated by his enthusiasm and his creativity. A deep friendship evolved out of our professional interaction with him, which should have lasted for many more years. Sadly, he left us much too soon. We express our deepest sympathy to his family. We shall remember him with great appreciation and deep affection.

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