



## Christopher Freeman

With the passing away of Christopher Freeman on August 16th, 2010, the social sciences community has lost one of its most prolific writers and visionary thinkers. Freeman was one of those unique scholars who combined an in-depth knowledge of the history of social sciences with economics; the international harmonization and development of science and technology statistics with the needs of science and technology policy making; and the knowledge of industrial engineering — from chemicals to electronics — with the businesses practices of project research selection and evaluation. But he was also particularly influential in policy making itself, having been responsible for bringing back into international macro-economic policy-making Schumpeterian thoughts and concepts on structural change in the 70's and 80's and having dared to open up the economists' 'black box' of technological progress highlighting amongst others the intrinsic heterogeneity of notions such as technological change and industrial innovation which had, in the economic growth literature, become identified as 'a measure of our ignorance'. Freeman's many contributions on the nature of technical change based on detailed analyses of the success and failure of innovation in many firms and industries led him to propose several new concepts and taxonomies which became widely used in the emerging science and technology studies literature as well as in the economics of innovation literature of the 80's. One may think of the taxonomy he proposed between incremental, radical and pervasive innovations, the detailed analysis he provided on the shifting nature of competition accompanying the emergence of new technologies which he associated with Schumpeter mode one and Schumpeter mode two forms of competition and many other new concepts developed in the 80's such as technological trajectories, techno-economic paradigms and the concept of national system of innovation widely popular across the globe in S&T policy making.

In the mid-sixties, Christopher Freeman set up the Science Policy Research Unit (today the Science and Technology Policy Research Unit [www.sussex.ac.uk/spru](http://www.sussex.ac.uk/spru)) at the University of Sussex and laid the basis of a rapidly growing international community of science and technology researchers, policy makers and students in the OECD countries, and later on in the South in the fields of science and public policy; the measurement of research and development with the so-called Frascati manual which might have been more aptly described as the Freeman manual; the history of social science studies; Schumpeterian and evolutionary economics; innovation management; technology and innovation policy as well as in making both macro- and micro-economics, international trade and economic history more aware of the central role of technological, institutional and social change.

Christopher Freeman, Chris for his friends, was born on September 11th, 1921. His 80th birthday was celebrated with a large conference in his honour in his hometown of Lewes, the weekend of September 14th till 16th 2001.

While it is probably easy for most of us to remember where we were on 9/11, I remember that in the evening of that day I was discussing with Chris what to do with his 80th birthday conference party. Against all odds we decided to go ahead. The international travelling situation at that moment was pretty traumatic and while many of the already invited participants were and remained stuck in airports across the world over the whole period of the conference, most came from across the world. It was, given the circumstances, an emotional conference: tension was in the air, doubts about the future of the world as we had known it were on everybody's mind. The contributions to the conference gave a kaleidoscopic overview of the many different facets of Freeman's academic contributions. In a first session, called the 'entrepreneurial' Freeman the focus was on the young Freeman, his early highly influential statistical work on the measurement of R&D, the technological specialisation of countries and later on the national systems of innovation concept. In a second session called the 'optimistic' Freeman, the focus shifted towards the more conceptual contributions of the more mature Freeman of the 80's. His more radical and controversial writings on technological trajectories, on techno-economic paradigms and long waves. In a third session entitled the 'world' Freeman the debate centred around the elder Freeman of the 90's with contributions on global transition and development, the emerging newly industrialising countries and catching up, the failure of development studies and the concept of development through innovation. The fourth and final session entitled the 'concerned' Freeman brought together the broader social, environmental and philosophical issues, Freeman had written about throughout his life from the vexed question about technological unemployment in the late 70's and early 80's to the Information Society in the 90's and the green economy and the economics of hope and human development this Century. There are few conferences where people don't want to leave to catch an early train or plane. This one was the one, I will always remember as the conference where people did not want to leave, wanted to stay to continue to discuss. For Chris, as he made clear in the concluding speech this was his academic farewell, now it was to the new generations sitting around the table to take over. I did remember at that time that back in 1986, he actually said exactly the same thing on his formal retirement. I wasn't convinced, as I concluded in my own contribution to the 1986 Freeman Festschrift with the words: 'watch out for Christopher Freeman!' How right I was. The last 25 years since his formal retirement Freeman has continued to be an inspiration to all of those who continued to be passionate about understanding the dynamics of technological, institutional and social change.

*Luc Soete  
UNU-Merit  
Maastricht*