

## THE NEW SCIENCE OF CYBERNETICS: VISION AND RESEARCH DESIGNS

Dr. Karl H. Müller  
University of Vienna, Austria  
University of Ljubljana, Slovenia  
Director, Wiener Institute for Social Science Documentation (WISDOM)

The lecture will be focused on a series of three books which are being published right now under the heading of a new science of cybernetics. (*The New Science of Cybernetics. The Evolution of Living Research Designs, Vol. I: Methodology*, two more books on *Theory* and *Explorations* are due by November 2009 and November 2010)

The first part of the lecture will try to give an overview of the differences between the new science of cybernetics and cybernetics as we knew it from the 1960s or 1970s. The new science of cybernetics is based on a vision which has been put forward by Heinz von Foerster under the name of "second order cybernetics" although von Foerster was never able to present a comprehensive outline of this novel way of inter- or trans-disciplinary research. Thus, the first half of the presentation will be devoted to this subject and to the general structure or to the great vision of a new science of cybernetics.

The second half of the talk will show some examples how research designs under the new science of cybernetics differ significantly from the conventional ways of cybernetics. The main focus of these examples will lie in the field of the social sciences and of complex social systems.

**Karl H. Müller** is head of WISDOM, Austria's infra-structural centre for the social sciences and humanities, president of the International Heinz von Foerster Society and scientific advisor of a new research program RISC (Rare Incidents, Strong Consequences) at the University of Ljubljana, Slovenia. Karl H. Müller was the former head of the Departments of Political Science and of Sociology at the Institute for Advanced Studies in Vienna.

He is the Austrian member of the European Strategy Forum on Research Infrastructures (ESFRI)-Working Group for the social sciences and humanities. Moreover, he is member of an international working group on research infrastructures in the social sciences and humanities, appointed by the German Science Council. His main research interests range from issues in complex modelling within the social sciences and from interdisciplinary analyses of innovation processes in science, technology and economy to the history and the current potential of inter- and transdisciplinary research, to the frontiers of second order cybernetics and radical constructivism and, finally, to the newly emerging risk-potentials for contemporary societies in general.

In the field of research infrastructures for the social sciences and humanities his main emphasis lies in the visualization of national and international data sets, including the visualization of complex, multidimensional data. He has conducted and organized more than seventy national

and international research projects and has published more than 200 scientific articles and books in international as well as national journals or publishing houses.

WISDOM (Wiener Institute for Social Science Documentation and Methodology) is Austria's center in the domain of research infrastructures for the social sciences. WISDOM has been established in 1985 and is organized as a private non-profit research institute. Currently, WISDOM employs roughly 20 scientists mainly from the field of social sciences.

WISDOM is the Austrian member of CESSDA (Council of European Social Science Data Archives). In the future, WISDOM will be the Austrian node in two emerging European research infrastructures (ERI). First, WISDOM will become full member of CESSDA-ERI, the new European data archive for the social sciences. Second, WISDOM will act as the national coordinator for the European Social Survey. Additionally, WISDOM hosts the Austrian research documentation for the social sciences and provides the electronic support for the international project management of the Austrian Ministry of Labour, Social Affairs and Consumer Protection in the field of labour market policy and human resources. Additionally, WISDOM is engaged in a number of relevant research fields, especially in labour market research, in information systems on professional qualifications, in the field of "Science, Technology and Society" or in cybernetics and the cybernetics of space. WISDOM edits a book-series under the title "Complexity, Design, Society" which places a strong emphasis on the new frontiers in the fields of complexity research, second-order cybernetics and the application of complex methods and models in the social sciences.