Technical Assistance from Intelligent Robots in Health Care and Household Service: Prospects and Limitation from the Perspective of the Users

What can we expect from the new generation of intelligent robots for end users? How is this technology perceived in different social groups and cultures? How can we overcome barriers to its increased use?

In our research we focus on the social aspects and the acceptance of new technologies. Furthermore, we investigate the conditions and consequences of modernization and technical innovations. Employing mainly discursive methods of investigation, we conduct systematic research into risk perception, technology assessment and communication processes. In a world characterized by a plurality of knowledge and values, communication and cooperation among and between societal actors gain more and more importance and are in particular essential for social debates on technology, environment, health and consumer protection. Here, controversial views about how to deal adequately with opportunities and risks often lead to fruitless manoeuvring, endless debates and often blockades between the relevant social forces. For these risk-sensible fields of politics we develop, implement and evaluate innovative forms of communication and investigate the social forces that drive the innovation process. The objective is to find new pathways for improving the governance of modern society.

Scientists predict a rapid evolution of artificial intelligence and estimate that approximately from the middle of this century a variety of commercial products will be available for the end user. For many this is good news, for others this sounds like a horror scenario. In particular in the field of health care, basic services for the elderly and assistance to handicapped persons intelligent robots may be a viable and reliable alternative and addition to human caretakers. Due to the decline of traditional social structures and due to high wages in the service sector, it is assumed that human service will not be sufficient to meet the challenges of increase demand for personal care. Today we witness already a growing popularity of technical assistants in childcare if one interprets the sales of interactive toys that capture the attention of youngsters and keep them entertained as an indicator for acceptance. Electronic companions seem to be more readily accepted by young children than they are by the group of elderly people. However, at least in Japan, some of the artificial toys such as animals (dogs) that show natural behaviour are also welcomed by adults and older age groups. Artificial pets provide the illusion of having a companion and not being completely isolated.

We expect more developments in the field of basic motion simulation for robots and in the area of intelligent software for enabling robots to solve various tasks in their environment and using a knowledge network e.g. the internet for robots. The new generation of robots will be able to interact with other machines in the home such as refrigerators, ovens, light fixtures, air conditioners and others. These embedded chips could provide a service environment which goes beyond human care and is hence not a “cheap” substitute but a true enrichment to traditional services. Yet, there is wide-spread scepticism about the acceptance of technical assistants in the home. Many potential users feel that they are not competent enough to deal with such a machine while others feat that the machine could get out of their control. Most prominently is the expectation that, with the advent of technical assistants, humans will even less care about those who are old or handicapped.

Curriculum Vitae

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Ortwin Renn serves as full professor and chair of environmental sociology and technology assessment at Stuttgart University (*www.uni-stuttgart.de/soz/tu*). He directs the Interdisciplinary Research Unit for Risk Governance and Sustainable Technology Development (ZIRN) at the University of Stuttgart (*www.zirn-info.de*). and the non-profit company DIALOGIK, a research institute for the investigation of communication and participation processes in environmental policy making (*www.dialogik-expert.de*). Since 2006 Renn has been elected Deputy Dean of the Economics- and Social Science Department and Acting Director of the Institute of Social Sciences at the University of Stuttgart.

Ortwin Renn has a doctoral degree in sociology and social psychology from the University of Cologne. His career included teaching and research positions at the Juelich Nuclear Research Center, Clark University (Worcester, USA), the Swiss Institute of Technology (Zuerich) and the Center of Technology Assessment (Stuttgart). His scientific affiliations include memberships in the panel on “Public Participation in Environmental Assessment and Decision Making” of the U.S.-National Academy of Sciences in Washington, D.C., in the National Academy of Disaster Reduction and Emergency Management of the People’s Republic of China, in the Scientific and Technical Council of the International Risk Governance Council (IRGC) in Geneva and in the European Academy of Science and Arts (Vienna and Salzburg). He serves on the senate of the Berlin-Brandenburg Academy of Sciences (Berlin) and on the Board of Directors of the German National Academy of Technology and Engineering.

His honours include an honorary doctorate from the Swiss Institute of Technology (ETH Zurich), the “Distinguished Achievement Award” of the Society for Risk Analysis (SRA) and the Outstanding Publication Award from the Environment and Technology Section of the American Sociological Association for the book: „Risk, Uncertainty and Rational Action“ co-authored by C. Jaeger, G. Rosa und Th. Webler. Among his many political advisory activities is his chairmanship of the State Commission for Sustainable Development (German State of Baden-Württemberg). Renn is primarily interested in risk governance, political participation and technology assessment. His has published more than 30 books and 250 articles, most recently the monograph “Risk Governance” (Earthscan: London 2008).