

In focus of the symposium are the methodological, anthropological and ethical implications of the most recent technological advances in the field of autonomous systems, particularly the two paradigms of ambient technologies and organic computing.

Ambient technology design as well as organic computing aim at autonomous systems which are supposed to act as human agents, simulating human activities, properties or skills. And both paradigms display some remarkable similarities, insofar as they apply the very same technical solutions in order to construct autonomous systems, e.g. non-von-Neumann architectures, SOMs, neural nets. And both paradigms use the same biomorphic metaphors in order to describe the construction, the function and the usage of the resulting systems, stating adaptive and evolutionary strategies of the systems that enables them to "interpret intentions", so understand emotions and finally to act sociably.

The use of biomorphic metaphors, however, seems to indicate not only a variation of already existing technological solutions; the metaphorical connotations emphasise design of a new and unprecedented type of systems which are neither bio- nor artefacts but behavioural simulacra. As such they resemble certain cognitive features of homo sapiens and combine technical self-assembly with evolutionary efficiency. This specific combination of biological and technological designs raises some intriguing philosophical questions which constitute the focus of this symposium.

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International Symposium

Evolutionary Robotics, Organic Computing and Adaptive Ambience: Epistemological and Ethical Implications of Technomorphic Descriptions of Technologies

October 20-22, 2011

Venue
Hector School
Schlossplatz 19, 76131 Karlsruhe, Germany

Institute for Technology Assessment
and Systems Analysis (ITAS)



Preliminary Programme

Thursday, October 20, 2011

- 12:00-13:00 Registration
- 13:00-13:30 Welcome Notes
(*Mathias Gutmann*)
- Section I: Setting the Stage: Biomorphie Descriptions of Technologies**
(Chair: *Michael Decker*)
- 13:30-14:15 *Hartmut Schmeck*:
Organic Computing – Challenges and Some Insights
- 14:15-15:00 *Peter Dittrich*:
The Generation of Meaningful Information in Bio-chemical Systems
- 15:00-15:30 *Coffee Break*
- 15:30-16:15 *Wolfgang Reif*:
Controlling Software-induced Self-organizing Behaviour
- Section II(a): Methodology and Epistemology: Metaphors and Models**
(Chair: *Jorge Solis*)
- 16:15-17:00 *Christian Müller-Schloer*:
A Paradigm-Shift in Engineering Sciences? – Some Methodological Remarks
Coffee Break
- Öffentlicher Abendvortrag (Public Evening Lecture):**
- 20:00 *Carl Friedrich Gethmann*:
Können Roboter sprechen?

Friday, October 21, 2011

- Section II(b): Methodology and Epistemology: Metaphors and Models**
(Chair: *Jorge Solis*)
- 09:00-09:45 *Mathias Gutmann*:
Biomorphie Metaphors: Models or Misunderstanding?
- 09:45-10:30 *Dieter Sturma*:
The Mechanical Mind. On Metaphors and Models
- 10:30-11:15 *Coffee Break*
- Section III: Anthropology and Philosophy of Technique**
(Chair: *Mathias Gutmann*)
- 11:15-12:00 *Tanja Schultz*:
Bio-Signals and Intention-Interpretation
- 12:00-12:45 *Rafael Capurro*:
Towards a Comparative Theory of Agents
- 12:45-14:00 *Lunch Break*
- 14:00-14:45 *Antonio Moniz*:
Working With Autonomous Systems: Agents, Co-Workers and the Human-centred Perspective
- 14:45-15:30 *Klaus Wieglerling*:
Artificial Bodies and Embodiment of Autonomous Systems
- 15:30-16:00 *Coffee Break*
- Section IV(a): Autonomy and Agency: Normative Implications**
(Chair: *Antonio Moniz*)
- 16:00-16:45 *Guglielmo Tamburrini*:
Human Interactions with Intelligent Machinery and Psychoanalysis

- 16:45-17:30 *Karsten Weber*:
What Is It Like to Encounter an Autonomous System – Some Scenarios
- 17:30-18:15 *Coffee Break*
- 18:15-19:00 *Bernd C. Stahl*:
Ethical Aspects of Autonomous Systems: Foresight and Governance Approaches

Saturday, October 22, 2011

- Section IV(b): Autonomy and Agency: Normative Implications**
(Chair: *Antonio Moniz*)
- 09:00-09:45 *Herman Tavani & Jeff Buechner*:
Agency, Autonomy, and Trust in the Context of Artificial Agents
- 09:45-10:30 *Michael Nagenborg*:
Information and Autonomy: How Biology Was Transformed into Information-Sciences
- 10:30-10:45 *Coffee Break*
- Section V: Technology Assessment and Technology-Reflexion**
(Chair: *Guglielmo Tamburrini*)
- 10:45-11:30 *Jorge Solis*:
Some Issues on Humanoid Robotics Research: Applications and Implications
- 11:30-12:15 *Michael Decker*:
Making Perfect Life? Technology Assessments on Autonomous Systems
- 12:15-12:30 *Coffee Break*
- 12:30-13:00 **Final Discussion**
- End of Symposium**