

The role of expectations in intuitive human-robot interaction

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[Verena Hafner](#), [Manja Lohse](#), [Joachim Meyer](#), [Yukie Nagai](#), [Britta Wrede](#)

The HRI workshop on the role of expectations in intuitive human-robot interaction aimed at bringing together researchers from different scientific fields to discuss crosscutting issues and to exchange views on the role of expectations and the preconditions and principles of intuitive interaction.

Thirty-eight researchers from different areas, including Computer Science, Psychology, Engineering, Linguistics and Interaction Design discussed various aspects of the role of expectations in intuitive HRI. Five papers and three posters presented empirical studies, conceptual analyses and position papers. Out of a variety of topics addressed in the presented work, a number of issues emerged as central points and triggered discussions.

One central topic concerned the question of the relation between humanoid and non-humanoid forms for robots. A point raised in several presentations and comments was that humans were able to interact and communicate efficiently with other humans. The resulting question were:

- Should HRI apply exactly the same mechanisms that are used in human-human interaction?
- What mechanisms can or should we employ?
- Would an appropriate animal-like or even technical behaviour of the robot in an interaction be preferable to an imperfect human-like reaction of the robot?
- Given that a robot has humanoid form or features, does this imply that it should also express related communication behaviour? For example, should a robot that has speech and arms also carry out co-speech gestures?
- What kinds of attentional mechanisms are needed, and should the robot be able to read the intentions of the human? Are these prerequisites for intuitive interaction?
- What is the role of dynamics in interaction and timing?
- What is the role of emotions in HRI?
- What is the relation between the expectations the human brings to the encounter with the robot based on morphology and looks, the robot's performance relative to these expectations, and the human's satisfaction with the interaction with the robot?

An additional difficulty seems to be that the user's expectations vary a lot based on factors such as previous experience with robots, gender, cultural background, etc.

From a methodological point, the question arose how one can measure the expectations a user has regarding a robot and the degree to which the robot lives up to them.

The workshop has clearly shown that many issues in intuitive HRI are still unresolved. It also revealed that there is definite interest in these issues. One full day, we had lively and enthusiastic discussions with the workshop participants. The expectations of the organisers of this workshop have certainly been more than fulfilled. However, we have also realised that much more research is needed to answer the different questions raised and issues discussed during this workshop.