1. **Purpose of visit**

The purpose of this visit was
a) to participate in the workshop “Experimental Pragmatics Meets Game Theory” organized by Gerhard Jäger together with the three grantees (Jäger, Franke, Degen) and Prof. Noah Goodman from Stanford University. http://www.sfs.uni-tuebingen.de/aktuelles/detail/workshop-experimental-pragmatics-meets-game-theory.html
b) to discuss follow-up studies in light of the experimental results obtained in the first series of experiments.
c) to discuss model development in light of the current experimental results
d) to discuss structure and content of paper submission to the CogSci Annual Meeting.

2. **Work carried out during the visit, main results obtained**

During the visit, all three grantees spoke at a workshop that was intended to bring the grantees, who are working in a game-theoretic framework towards understanding the use of referential expressions, together with Noah Goodman, who works on similar issues within a Bayesian decision-theoretic framework. The goal of the workshop was to understand where these approaches make similar or different predictions, which kinds of phenomena can be modeled in each, and how well these models account for the experimental data. The workshop was attended by a sizable local audience of both students and faculty.

Progress over the past four months on both the modeling and the experimental side was discussed. Experimentally, we have now completed data collection for the same types of experiments as reported in Degen & Franke (2012), but using linguistic rather than pictorial messages. That is, participants learned an artificial language before performing an inference task in either production or comprehension. Performance was worse overall than when pictorial messages were used, but the effect was greater for inferences requiring one step of iterated reasoning about interlocutor choices and beliefs rather than two.

In light of these results, taken together with the results from the first series of experiments, a version of the Iterated Response model was formulated that captures that participants make decisions suboptimally by replacing the deterministic response rule of IBR with a quantal response rule. This version of the model provides a good fit to the data from both series of experiments.

In addition, this model makes quantitative predictions for participants' behavior when different relative costs of available messages are assumed. That is, the more costly an unambiguous alternative to an ambiguous message is, the more likely participants should be to use the ambiguous message in production. If listeners are sensitive to the speaker's production costs, they should take this into account in their inferencing behavior upon observing an ambiguous message. The design of a follow-up experiment to test the effect of message cost on inference behavior was discussed in some detail. It was agreed that the experimental results (experiments with linguistic messages and message cost manipulation as well as the IQR model) should be submitted to the CogSci Annual Meeting and reworked later to be included in a journal-length publication.

In the meantime, the message cost manipulation has been conducted and results submitted to the conference (see publication list).

3. Future collaboration with host institution

Collaboration with the host institution will continue as specified in the grant.

4. Publications

Degen, J. and Franke, M. (2012). Optimal reasoning about referential expressions. In S. Brown-Schmidt, J. Ginzburg, and S. Larsson (eds.), *Proceedings of the 16th Workshop on the Semantics and Pragmatics of Dialogue*, pp. 2 – 11.

Degen, J., Franke., M. and Jäger, G. (under review). Cost-based pragmatic inference about referential expressions.