

**Do 2.5-year-olds understand presupposition?
An eye-tracking study of the discourse particles *too* and *again*.**
Frauke Berger & Nausicaa Pouscoulous

SCIENTIFIC REPORT FOR THE FIRST VISIT:
Nausicaa Pouscoulous went to Potsdam, 24 November – 3 December 2010.

Description of the proposed project

The aim of this work is to refine the findings of Berger et al. (submitted) and Pouscoulous et al. (in preparation) and establish whether very young children are able to draw the presuppositional inferences associated with the expressions *too* and *again* ('*auch*' and '*nochmal*' in German). From the age of two, if not earlier, children are proficient in their use of these expressions, but it is not clear that they fully appreciate their semantic and pragmatic import. In order to test children's comprehension capacities as young as possible, we will adapt the paradigm designed by Pouscoulous and her colleagues as an act-out task and use it with an eye-tracker.

In that study, children were presented with two toy characters, one of which performed an action (e.g., dance). They then heard either the phrase, "Anna wants to dance, *too*," or "Anna wants to dance *again*", where, crucially, the name "Anna" hadn't been used before. The child was asked to help Anna perform the action. Thus, in order to assign the correct referent to "Anna", pick up the right puppet and make her dance, for instance, the child had to make an inference based on the presupposition carried by either *too* or *again*.

In our experiment, German 2,5-year-olds will see the same basic pattern: two similar nameless characters, each performing an action, followed by a sentence using either the discourse particle *too* or *again*. The study will use a 2-alternative forced-choice paradigm. Specifically, the anticipatory eye-movements to the characters will be measured.

Aim of the first visit

The purpose of this visit was to plan the details of the study. We intended to determine the exact experimental design, control conditions, fillers and relevant test material (in particular assess whether we can use real toys or whether we have to create little animated pictures). Furthermore, we also wanted to pilot the experimental paradigm and material on several 2;6-year-olds to assess whether the task is sufficiently simple and entertaining, and whether the linguistic expressions are suitable for this age group.

Description of the work carried out during the visit

The linguistic material for the study was discussed and adapted from Pouscoulous et al. (in preparation). In particular, to comply with the demands of the eye-tracking method, a much bigger number of test trials will have to be used. We therefore had to come up with additional suitable materials (i.e., types of puppet characters and action verbs they would enact). In the new paradigm they are 16 trials; 8 with the particle *auch*, and 8 with *nochmal*.

The exact procedure was agreed upon for the experiment. This includes how children would be familiarised with the experimenter and the video material before the introduction of the test material; how the toys will be presented to the children; the action they will witness and the precise wording to be used.

The technical aspects of the use of the eye-tracker were also discussed and agreed upon: which settings will be used; how the children will be positioned; how their eye-movement will be monitored; the width of the image on the screen; the exact timing of the introduction of the test material (e.g., number of seconds preceding the test action, and number of subsequent silent seconds to allow for a clear reading of eye-movements).

Description of the main results obtained

Several issues linked to the adaptation of an act-out paradigm to an eye-tracking method were worked out. Important decisions regarding the practical aspects of the experiment were taken, such as the use of movies featuring real toy animals rather than animations. By the end of the visit we had a detailed experimental design to work with. We are now ready to create the movies necessary for the experiment. Once they are ready, we will pilot them on adults, to make sure that they feel natural.

Future collaboration with host institution

A visit of Frauke Berger to the linguistics department of UCL is planned for spring 2011. During this visit, we will work towards the construction of the visual materials for the experiment. Additionally, the final design of the experiment will be presented to the UCL pragmatics group. We hope to elicit a discussion with a fruitful outcome both for our experiment itself and for the theoretical bearings of our study.

Projected publications/articles resulting or to result from your grant

We, of course, very much hope to produce at least one article with the results of this study. Yet, before we can start writing it, the procedure must be carefully piloted and the study must be run.

Other comments

As mentioned above, we were planning to pilot our paradigm on 2,5-year-olds to ensure the task is sufficiently simple and entertaining and that the linguistic expressions are suitable for such young children. We decided against this, since it became clear that on the one hand, previous work by Frauke Berger and colleagues established children of this age have no problems with this type of procedure, and, on the other hand, the linguistics material we will use has already been tested on 2,5-year-olds by Nausicaa Pouscoulous for a previous study. We still intend, nonetheless to check the movies we create with some adult participants. We will also ensure that they are no clear toy preferences in each pair for children.