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Final report of my short visits in Vienna (13/08/12 – 17/08/12) and Paris (19/09/2012 – 29/09/12)

Title of the project: Morpho-Syntax and Semantics of Spatial Expressions: Typological and Developmental Perspectives

Host institution:

Vienna: Working Group Comparative Psycholinguistics of the Department of Linguistics (University of Vienna), formerly hosted by the Academy of Sciences, Vienna, Austria

Paris: Laboratoire Structures Formelles du Langage, UMR 7023, CNRS & Université Paris 8, Paris, France

1. Purpose of the visits:

During my visit in **Vienna** we compared a corpus of spontaneous adult-child interactions in French and German (longitudinal data from one year and eight months to four years) so as to

- a) examine the morpho-syntax and semantics of these languages, with particular attention to the grammar of spatial expressions, in order to pinpoint the loci of cross-linguistic variation and
- b) determine how early language-specific factors influence children's spatial expressions.

The focus of my visit in **Paris** was also twofold:

- a) Discussion of my coding system for both data sets (cross-sectional and longitudinal) with several colleagues.
- b) Detailed planning of the next months (further data collection, transcription, coding etc.) and continuation of the coding.

2. Description of the work carried out during the visit

Vienna:

During the five days I worked with Soonja Choi and Eva Maria Freiberger at the University of Vienna we carried out a fine grained analysis of some already collected longitudinal data.

First, we looked at the German and French corpus in order to divide them into comparable phases. Different researchers choose different criteria when they compare longitudinal data: Some match the data with respect to MLU, others with respect to age. Following the analyses carried out by Bassano and colleagues (Bassano et al. 2003), we chose to divide both data sets (German and French) into three comparable phases according to their respective age.

The main idea was to apply the analyses carried out by Johnston and Slobin (1979) to our spontaneous data. Thus, we wanted to investigate

a) at which point in time young German and French children acquire linguistic devices that express spatial relations such as containment, attachment or covering and

b) and which linguistic devices do they use to encode such meanings.

Starting from the semantic meanings we were interested in, we looked in detail at the morpho-syntax and specific semantics of children's spatial language. For this explorative study, we took advantage of the basic coding lines of the data. The German as well as the French data was already coded with respect to dynamic location (but **not** in terms of specific spatial relations such as containment, support etc.), so that we could carry out some analyses (using CLAN programs) to see which semantic meanings children encode in their utterances and in which linguistic this information is encoded.

The next step consisted in categorizing the selected forms into different categories corresponding to already well-established spatial relations. By taking into account previous findings in this domain (among others Gennari et al. 2002, Levinson et al. 2003, Quinn 2004) and by considering the different meanings encoded in the child data, we created a taxonomy that includes all expressed meanings. We then adapted the previous coding system for CHILDES (Hickmann et al., forthcoming) and began to recode our data. Since the coding was not always clear, we discussed the semantic meaning of a great number of linguistic devices. With respect to forms, the analyses and thus also the recoding concerned verbs as well as particles (only in German), prepositions, adverbs, and pronouns.

Paris:

During a meeting of a larger project on spatial language (LANGACROSS funded by the DFG and the ANR), I discussed my coding system with specialists from Germany and France. During this workshop which lasted two days (20 and 21 of September), we dealt with several recent theoretical problems in the field of spatial language and cross-linguistic comparisons such as the importance of the temporal aspect in motion

event descriptions and the different ways to interpret ambiguous utterances such as *Il court dans la maison* which can be a boundary-crossing event or a movement within a general location.

In the remaining five days I worked on cross-sectional data. I first looked through the corpus in order to establish a list with contains detailed information about the files (names, age, gender of the speaker) and the coding (with which lines has the data been coded). Unfortunately, all files are not yet in the appropriate format (CHILDES). Thus, I had to transform about 60 files from word into CHILDES which took me about three days. Then, I started the coding of this converted data.

Since we would like to finish the coding of our data by August 2013, Maya Hickmann and I drew a plan in which we scheduled the different steps (some new data collection, transcription and coding). We calculated how many hours of research assistants we would need to accomplish our goal and then directly applied for assistants at the Ludwig-Maximilians-Universität. In another meeting, we discussed the work I had carried out during my short visit in Vienna. We commented some coding problems and made some important decisions with respect to further analyses of the data.

3. Description of the main results obtained

Vienna:

One result is our coding scheme, more specifically the categorization of basic meanings in the field of dynamic motion. We established two different categories which each subsume several subcategories:

- (1) Spatial relations where Figure and Ground are in contact: containment, horizontal support, vertical support, covering, attachment, encirclement, clothing. Within each category, we distinguished between joining and removal.
- (2) Spatial relations where there is no contact of Figure and Ground: front/back, below/above, proximity/distal relations, between. Here we also distinguished between joining and removal.

Since previous coding included Path components, it will also be possible to compare the German and French data with respect to this semantic information.

The coding of children's **motion verbs** with respect to the above mentioned categories showed striking interindividual differences. These can mainly be explained by the situational context in which the recordings have been made. Apart from these interindividual differences, the data clearly shows evidence for the impact of general developmental determinants: Children of both languages express increasingly more

semantic information and also more varied types of information. With respect to language-specific differences the data shows that French children initially (1st phase) expressed very few semantic information in their verbs. In cases where they encoded relevant semantic information, they expressed clothing, horizontal support and covering. In contrast, from very early on, German children frequently encoded different types of spatial relations (clothing, attachment and horizontal support). Until the age of four years (4th phase), children of both languages express increasingly more and more varied types of spatial configurations in their verbs (cf. Table 1). Interestingly, we did not find any occurrences of verbs encoding of spatial relations where there is no contact of Figure and Ground.

French					
Phase	Clothing	Hor. Support	Attachment	Covering	Containment
1	1	3	1	2	0
2	0	1	1	8	0
3	5	13	6	3	14
4	8	17	35	7	14
total	14	34	43	20	28
German					
Phase	Clothing	Hor. Support	Attachment	Covering	Containment
1	27	9	18	0	0
2	7	6	15	1	9
3	31	27	4	3	1
4 (only 1 child)	65	16	13	1	18
total	130	58	50	5	28

Table 1: Semantic content of children's verbs (tokens)

Paris:

Since my work in Paris was relatively heterogeneous, there are several main results:

- (1) A main point was the discussion of my data and my coding with colleagues during the LANGACROSS meeting where we decided that, in the future, we have to take into account not only the spatial dimension of motion/localization descriptions but also the temporal aspect. The latter one seems to be closely linked to space. Especially specific transfer phenomena of language learner's (L1, 2L1 and L2) spatial expressions can be explained by taking into consideration features such as *Aktionsart*.
- (2) Another result of my visit was the detailed planning of our project on static and dynamic location which included the arrangement of our files in Excel-sheets, the

transformation of WORD-files into CHILDES and the writing of an application for research assistants. In addition, I also coded a number of files.

- (3) With respect to the project in collaboration with Soonja Choi and Eva Maria Freiberger, we decided to do two analyses: One on the expression of dynamic motion events in young German and French children (= continuation of the work I began in Vienna) and one more broader and more detailed analysis on the acquisition of spatial expressions by French and English children that also takes into account Figure and Ground properties (= new perspective).

4. Future collaborations with host institution

Vienna:

We did not manage to code the whole category of other linguistic devices (adverbs, prepositions etc.) within the four days of my visit in Vienna. The coding of the remaining data will be done this fall for both languages in order to have first results concerning verbs and other linguistic devices before the end of the year. The envisaged contrastive analyses will show in which linguistic means children of both languages express different kinds of semantic information and at which moment in time they acquire these devices. Since we also plan to include the Korean longitudinal data (collected by Soonja Choi) in our analysis, we will extend the planned analyses and continue our collaboration. The next meeting (in Munich) is scheduled for next spring.

Prof. Wolfgang Dressler brought me into contact with Prof. Gerhard Budin from the *Center of Translational Studies* (University of Vienna). During my visit, I had a very interesting meeting with him where he told me about his ongoing projects, among others a project on the automatic coding of spatial language in different languages. As I developed a detailed coding system for more than five languages with some colleagues (Hickmann et al., forthcoming), he also asked me to give him a critical feedback on his coding manual.

Paris:

Since I could not finish the coding of all the remaining files, our cooperation will go on and we will have research assistants in Munich and Vienna who will finish the coding of the German and French data.

In addition we also plan to work together on a bigger project on the expression of spatial relations by blind children. This planned project which involves researchers from several European countries (France, Germany, Netherlands, Spain) should investigate not only children's verbalizations of spatial relations, but also their non-

verbal cognition. Therefore, the main aim of the project is to study the interrelations among perception, language, and cognition in development, particularly in light of recent crosslinguistic research exploring the cognitive implications of linguistic diversity. We are planning to submit this project in January 2013 to the research committees of the corresponding countries (ORA-Call).

5. Project publications/articles resulting or to result from the grant

Vienna:

We plan to publish a paper with the working title: “The expression of spatial categories in early child language: Insights from German and French” in a peer reviewed journal such as *Language, Interaction, and Acquisition* or *First Language*. Furthermore, we would like to present our results on one of the next conferences on either L1 acquisition or spatial language and cognition.

Paris:

The results of the comparison of German and French verbalizations of static and dynamic location by children will be submitted in Autumn 2013 to a peer reviewed journal such as *Journal of Child Language* or *First Language*. A purely typological paper which compares German, French and English (only adult data has been collected for English) will be submitted to *Linguistics* in Spring 2013.

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