

## **Report of AG 1: Experimental and theoretical approaches to relative clauses reconciled**

The Workshop was organized by Petra Schulz (Goethe University Frankfurt) and Esther Ruigendijk (University Oldenburg). The primary goal of the workshop was to discuss current questions concerning the forms and functions of relative clauses both from a theoretical and experimental perspective in order to advance current linguistic research. Therefore, contributions were invited that investigate relative clauses in processing and in monolingual, bilingual, and impaired language acquisition as well as theoretical contributions focusing on syntactic, semantic, pragmatic, phonological, typological, or historical aspects of relative clauses. Special emphasis was put on research addressing comparisons across different types of relative clauses and/or languages and/or populations. In a more general perspective, the workshop aimed at bringing together researchers from experimental and theoretical linguistics and targeted contributions that may build a bridge between empirical findings and linguistic theory and open up more closely intertwined research agendas for both fields.

The main motivation for this workshop was the following observation: Relative clauses have been at the center of research in linguistic theory, psycho- /neurolinguistics, and language acquisition as well as cognitive psychology; nevertheless, these disciplines have so far generally focused on their own research agenda. One exception is the so-called object-subject asymmetry in relative clauses, which has been found in acquisition and processing studies across languages and which has recently been approached with the syntactic account of relativized minimality (cf. Friedmann/Belletti/Rizzi 2009). However, most facets of relative clauses have only received attention in parts of the field. For example, differences between restrictive and non-restrictive RCs have been investigated mostly from a semantic perspective. Likewise, research on different relative clause types, i.a. free relatives and continuative *wh*-relatives, and on the analysis of relative clauses (raising, modification, or matching, cf. Donati & Ceccetto 2011) has almost exclusively been undertaken in theoretical syntax. At the same time, aspects such as differences between center-embedding and right-branching, the effect of animacy and plausibility constraints have been mainly addressed in acquisition and/or processing research (e.g., Kidd et al. 2007, Mac Donald et al. 1994).

Adriana Belletti (University of Siena) was invited to give the keynote talk. Our call for papers resulted in 32 submissions covering all areas targeted in the proposal. They were reviewed by a program committee including apart from ourselves Anke Holler (University Göttingen), Cecilia Poletto, and Ede Zimmermann (both Goethe University Frankfurt). 16 papers were accepted for presentation and another 4 were accepted as alternates.

The workshop drew a relatively large audience (between 30 and 45), and participants were as diverse as envisioned, comprising researchers in acquisition, processing, and theory, covering different theoretical domains and theoretical and methodological approaches. The participant group was stable throughout talks, resulting in very lively discussions for almost all of the talks.

Among other topics, contributions addressed the following questions: What is complex in relative clauses? What is the role of the intervener? Which role do features (and complexity) play for intervention? How relevant is the depth of embedding for comprehension/processing? Which features facilitate theta-role assignment and why (e.g., topichood, animacy)? In which respects do restrictive and non-restrictive relative clauses differ, and how can relative clauses be distinguished from complement clauses? What can the analysis of pseudo-relatives contribute to processing differences across languages with respect to relative clause attachment? Which factors are responsible for differences between subject relatives and object relatives? Are the latter structures always more difficult?

**Adriana Belletti** addressed in her invited talk the fundamental question “What is complex in relative clauses?” Taking as the starting point the account of relativized minimality, Belletti argued that not all relative clauses are complex and not all object relatives either. ‘Bigger’ or ‘richer’ structure per se may not be relevant for measuring complexity. Rather, the feature composition of the target plays a prominent role for explaining both, the empirical data on child acquisition and the adult judgments of relative clause types. Feature dissimilarity between target and intervener generally improves comprehension of object relatives. As the attracting features differ across languages (e.g., gender in Hebrew, number in Italian), cross-linguistic comparison is crucial. According to Belletti, the inclusion relation of features is the most difficult one, and the proper computation takes a relatively long time to develop. From a general perspective, though, eliminating intervention is always ranked higher than coping with it, as seen in tasks prompting for production of object relatives as a strong preference for producing alternative structures like passive subject relatives and causatives.

**Cornelia Hamann and Laurie Tuller’s** talk “Intervention effects in the spontaneous production of relative clauses in typical and atypical language development of French children and adolescents” looked into effects of intervention and of depth of embedding and analyzed the relative clauses of about 60 children (ages 6 to 14) regarding topichood, animacy, type of relative clause etc. The results confirm and extend previous results for

elicited production and comprehension: All groups showed a tendency to avoid intervention, by using pronoun subjects, generic heads or by different animacy specifications.

**Andreas Pankau** proposed in his talk “A syntactic argument for the matching analysis of relative clauses in German”. Taking as a starting point antipronominal contexts, Pankau argued that structures like *Das Land, aus dem ich komme* can be analyzed within the matching analysis by assuming that *dem* is an NP with a deleted noun (*Land*) rather than a real pronoun. This analysis is claimed to extend to all languages that exhibit these antipronominal contexts.

The aim of **Frank Kirchoff and Beatrice Primus’s** talk „Restrictive vs. non-restrictive relative clauses - Experimental and corpus-based syntactic evidence” was to explore new syntactic criteria for distinguishing both types of relative clauses. They tested the hypothesis that agreement in grammatical gender between nominal antecedent and relative pronoun is optional in appositive, but obligatory in restrictive relative clauses (e.g., *genau das/jenes Mädchen, das/die ich (ja) kannte*). Their results from an acceptability task as well as corpus data confirm this hypothesis, and also indicate parallels to Primus’ comma constraint.

**Boban Arsenijevic** investigated “Factive and propositional relative clauses and the operator movement approach” in Serbo-Croatian. His main claim is that complement clauses are relative clauses with light head nouns that are derived by head movement rather than by phrasal movement. Further evidence for parallels between complement and relative clauses comes from the fact that the marker *sto* appears in both clause types and involves event operator movement from TP to CP.

**Nino Grillo and Giorgos Spathas’** presented a talk on “Tense and aspect modulate RC attachment: testing the RC hypothesis in Greek”. They discussed the hypothesis that in languages that prefer high attachment of the relative clause over low attachment, pseudo-relatives are allowed. This was tested for Greek, a high attachment preference language, and hence pseudo-relatives were expected. Results from an offline questionnaire confirmed this idea. However, they also showed that results depend on the type of verbs used; the effects holds for perceptual, not necessarily for stative verbs.

**Yifei He, Ina Bornkessel-Schlesewsky and Matthias Schlewsky** tested in their talk „Subject relative clause preference in Chinese: processing relative clause with two gaps“ structural dependent vs. independent accounts. Their study addressed the well-known subject-object asymmetry for Chinese, a language that to date yielded mixed results, with some studies reporting an object preference. In contrast, results from their ERP study examining

Chinese sentences with two gaps showed a preference for subject relatives, which according to the authors supports structural distance accounts and not the dependency locality account (Gibson's DLT).

**Kalliopi Katsika and Shanley Allen** also presented data on subject and object relatives in their presentation „Processing subject and object relative clauses in a flexible word order language: evidence from Greek“. Their aim was to compare memory based limitation theories (such as DLT) and expectation based theories examining processing in a flexible word order language with rich morphology, here Greek. Results from a self-paced reading task showed a preference for SR over OR, but also an interaction with word order (scrambled sentences were harder than canonical sentences) thus supporting both memory based limitation as well as expectation based theories.

**Thomas Weskott, Sasha Bergmann, Christopher Götze, Anke Holler and Gert Webelhuth** discussed in their talk the question “What Can Experiments Tell Us About the Syntactic Analysis of Relative Clauses?“. They focused on the question how much of the head noun is represented in the relative clause, this way comparing the modification, raising, and matching analysis. A rating and acceptability judgment task and a reaction time study (cross-modal lexical priming) were presented that examined binding reconstruction effects. These were expected to show a bound reading for reflexives and not for pronouns. Results so far do not clearly favor one analysis over the other.

**Yair Haendler and Flavia Adani** investigated „Off-line and On-line Child Comprehension of Object Relative Clauses with Demonstrative and Personal Pronouns“ to test the locality intervention effect. Results show better offline performance for ORs with an intervening first person pronoun subject than for the other conditions (third person pronoun, full DP). The eyetracking data supported this result. This cannot be accounted for within current relativized minimality theory, and the authors instead suggest an explanation that takes the accessibility of the pronoun into account (the first person pronoun giving direct access, third person pronoun only indirectly).

**Claudia Poschmann and Michael Wagner' talk** „Relative Clause Extraposition and Prosody“ tested whether extraposition of relative clauses is easier if the intervening material is part of the background and if the intervening material is prosodically marked. In addition, they investigated whether extraction is harder for appositive than for restrictive relative clauses. In a production and a rating task, they found that relative clauses are more easily

extraposed if they are less prominent and that appositive and restrictive relative clauses were judged equally natural when extraposed.

**Marie-Anne Duffeler and Martine Coene's** talk „On the Comprehension of Subject and Object Relative Clauses by French Learners of English“ investigated whether second language learners behave like child learners. Using a picture selection task they studied pied piping and preposition stranding (only the former of which is allowed in French) in relative clauses with PPs. Contrary to their prediction, pied piping was harder than preposition stranding in L2 English, indicating that L2 acquisition may not mirror L1 development.

**Alexander Thiel, Corrina Koch, Emanuela Sanfelici, and Petra Schulz** presented „Children's production of subject vs. object relative clauses: A developmental study of German“. Three stages are predicted to occur during the acquisition of relative clauses: I) no RCs, II) SR but no OR, III) SR and OR. Furthermore, it was predicted that non-target responses fall into two classes: language-independent patterns (e.g., main clauses, reversals) and language-specific patterns (e.g., passive). The results from two elicited production tasks (without and with picture support) with 90 children aged 3 to 6 confirm both predictions and moreover point to a preference for passives also in the adults.

**Carlo Cecchetto, Caterina Donati and Maria Teresa Guasti'** talk addressed „Gross minimality and relative clauses in child grammar“. Taking as a starting point the Relativized Minimality account, they tested Italian-speaking children's comprehension of relative clauses and indirect *which*-questions with two picture matching tasks. In agreement with previous results, subject extraction was easier than object extraction in both cases. To account for these findings the authors propose an alternative implementation of Relativized Minimality: Gross Minimality, which avoids postulation of a +NP feature. Based on current syntactic theories of Merge, Gross Minimality applies if no feature can restrict the range of intervening objects because no probing is involved. In this case, any intervening element may disrupt the computation. Children's difficulty with object extraction is hence due to the non-adult-like extension of unprobed movement also to embedded structures.

**Emanuela Sanfelici and Cecilia Poletto's** talk focused on "Subject-Object asymmetry in relative clauses: an investigation into Italian dialects". They tested the hypothesis that Romance relativization involves both A' movement as well as non-operator movement. The analysis is based on about 3000 relative clauses extracted from the ASit corpus, covering 17 Italian regions. The study showed that complementizers appear in restrictive and appositive relative clauses in all argument functions of the relativized element. In addition, for Venetian

it was found that clitic doubling is only allowed in appositive relative clauses. In such contexts weak cross-over effects do not arise, which leads to the hypothesis that object relatives with clitic doubling should be as easy as subject relatives. The authors conclude that in addition to Relativized Minimality language-specific factors are suggested to be at work, due to the type of movement involved (i.e. operator movement or with agreement procedure: clitic doubling).

**Markus Bader and Jana Häusler** looked into „Locality and Anti-Locality in Processing German Relative Clauses“. In three self-paced reading tasks with adults, the influence of relative clause type (subject/object), type of intervener (pronoun/full NP), and anti-locality (presence/absence of adverb) were tested as well as stacking. The results are compatible with a memory based account: No difference was found between subject and object relative clause, but an advantage of pronouns over full NPs, suggesting a locality effect. Presence of an adverbial had a facilitating effect on reading times, pointing to an anti-locality effect.

The aim of **Naama Friedmann , João Costa, Maya Yachini and Caroline Silva**'s talk „Do grammatical function and grammatical category matter for intervention in relative clauses? The acquisition of PP relatives in Hebrew and European Portuguese” was to contribute to a finer characterization of the atoms of intervention, i.e. to investigate what exactly counts as an intervener. Four production and comprehension tasks assessed the role of categorical features (PP vs. DP) and grammatical function (complement vs. adjunct) for the emergence of intervention effects in relative clauses. PP and DP object relatives were both comprehended and produced equally poorly in both languages. Likewise, no significant difference was found between complement and adjunct relative clauses. The authors conclude that neither the categorical (PP/DP) nor the grammatical function (complement/adjunct) distinction play a role in alleviating intervention effects and thus do not constitute atoms of intervention.

The central theme of the workshop ‚relative clauses’ proved to be very fruitful: The workshop proposal attracted many high quality submissions across different countries, and the program attracted a large number of participants, who contributed to a lively and stimulating discussion throughout the three days. We are currently investigating whether a joined publication in a book or special issue may be a suitable format for continuing the discussion.