

Workshop description 'GIST5: *Generalizing relative strategies*'

Ghent University, 22-23 March 2012

**Convenors: Boban Arsenijević, Liliane Haegeman,
Rachel Nye and Lieven Danckaert**

1. Relative clauses: the basic types

1.1. Headed relatives

The concept 'relative clause' is one that is well established in the linguistic tradition and is common to most, if not all, paradigms.

Pre-theoretically a headed relative clause can be characterized as a clause that involves a relativizing element and which functions like an adjectival modifier in relation to the 'antecedent' nominal. The headed relative clause typically encodes a relation of co-reference between one of the constituents of the clause and an expression external to it – the antecedent which it modifies.

(1) the book [which you bought which]

The element used to introduce a relative clause, known as the relativizer, may be drawn from different lexical or functional categories. It often belongs to the class of words also used in questions (wh-words), but can also be a demonstrative, complementizer, or a word from some other class. In a large number of languages, including English, the presence of an overt relativizer is characteristic of one manifestation of this type of clause, and relative clauses are analysed in terms of a movement of a relative head. In other languages, such as Chinese, particular semantic and syntactic effects signal that some displacement still takes place, even though this is not overtly reflected in the word order (Huang 1981; Cheng 1997). This displacement, captured in generative syntax by the notion of movement (with differing implementations depending on whether one opts for head external analysis (Chomsky 1977 and much later work) or a raising analysis (Vergnaud 1974; Kayne 1994) or a combination of both (see Cinque 2009 for relevant discussion) can be explained as a consequence of the semantics of the displaced element. What moves is an operator which needs to take scope at the propositional level, and which therefore has to appear in a position which licenses its scope.

1.2. Free relatives

In addition to headed relative clauses, which display a typically nominal 'antecedent' and a relativizer, there are also free relative clauses ('free relatives'), which superficially seem to lack the nominal antecedent but are introduced by a relativizer component in their left periphery, which at an intuitive level seems to function both as head and as relativizer. Under most available analyses, free relatives are analyzed in a way that is closely similar to the analysis of headed relative clauses but without the (overt) realization of the co-reference component. Specifically, though there are different implementations available, free relatives also are taken to be derived by operator movement.

(2) what you see what

As was the case for headed relatives, in free relatives too the element introducing them may be drawn from different categories such as (wh-words), demonstratives, or complementizers. For a recent

analysis of free relatives that exploits the parallelism in certain languages between the (free) relativizer and the interrogative *wh*-phrase see Donati & Cecchetto (2011).

Interpretively, free relatives act as definite descriptions, taking as their denotation the maximal referent in the relevant discourse (domain) which satisfies the description.

1.3. Reduced relatives

To capture the interpretation of relatives, a generalization can be formulated along the following lines: relative clauses are derived by the movement of an operator from its base-generated position within a saturated expression to the edge of this expression, with the semantic effect of turning a saturated expression into a one place predicate. This effect is similar to that of the formal semantic tool of lambda abstraction. This leads to the question of the syntax-semantics mapping: there are by definition no relative clauses without the effect described above, but are there syntactic mechanisms deriving one-place predicates from saturated expressions which are not relative clauses?

There are a wide range of expressions which are not prototypical relative clauses, but which satisfy the condition in the generalization above. Reduced relative clauses as in (3) are a case in point. They are restricted to subject relatives and appear without an overt marker of relativization (neither a relative pronoun nor a complementizer), but they have been argued to derive from typical relative clauses, though syntactically licensed processes leading to their reduced form (for overview of analyses and discussion see Bhatt 2001).

- (3) Bread (*which) baked in the traditional way tastes better.

Kayne (1994) took the consequences of these observation to the extreme, and argues that attributive adjectives originate in relative clauses (i.e. as predicates in saturated clauses), and in languages where attributive adjectives appear prenominal, this is accounted for by a movement qualified as predicate raising.

- (4) [_{DP} the [_{CP} [yellow]_i [_C⁰ [_{IP} [book] [_I⁰ t_i]]]]]

In this view, all attributive expressions (that may appear as arguments) are base generated in relative clauses. See also Cinque (2010).

This extension of the concept of relativization leads to the possibility of treating an even wider range of nominal modifiers as relative clauses. For instance, we could go as far ascribing to postnominal modifying PPs a clausal structure with operator movement: the effect of the preposition is exactly that of turning a saturated expression (DP) into a one place predicate over a specific semantic component (see Dubinsky & Williams 1995 for an implementation of a similar idea to temporal prepositions).

- (5) a. the student in the corridor
b. the man with a very small hat

2. More relative clauses

The relative patterns illustrated in (1) - (2) are the prototypical relative clauses, and (3) is a plausible extension of the pattern generally – and across paradigms – seen in the literature as instantiation of a relativization process. (4) and (5) exemplify further extensions. What the patterns above have in common is that they have all been argued to involve a modifier relation between a nominal head (possibly null in the case of free relatives) and a clause. Beyond the cases discussed already, there is a wide range of facts, from pure data generalizations to more theoretically loaded observations, which

can be (and have been) taken to indicate that the range of relativization phenomena is much broader than traditionally assumed. Other clause types can be seen to manifest some or all of the properties discussed above and thus might be taken to also qualify as relative clauses. We give a brief overview of some of the more representative cases.

2.1. Adverbial clauses

Etymologically, subordinating conjunctions introducing various types of adverbial clauses crosslinguistically show a tendency to be based on words or morphemes typically also used in relativization. In Slavic languages, for instance, where *wh*-expressions are typical relativizers, subordinating conjunctions introducing causal, temporal, purpose, conditional and other subordinate clauses also contain *wh*-words.

(6)	za to što	od kad	kako	u koliko	Serbo-Croatian
	for that what	from when	how	in how_much	
	'because'	'since'	'in order to'	'if'	

Similarly, English temporal clauses are introduced by *when*, the same *wh*-phrase that is used as an interrogative *wh* phrase and in a headed relative:

- (7) a. Mary left when John arrived.
 b. When did John arrive?
 c. Mary left at the moment when John arrived.

Moreover, interpretively too, different types of subordinate clauses often come with the relation of co-reference between a component of their meaning and an element of the matrix clause. This is relatively straightforward for temporal and locational clauses. The temporal clause in (7a) involves a temporal argument (introducing the event time) which is co-referential with the temporal argument of the matrix clause. Similarly, the location that acts as the goal of 'putting' in the main clause (7d) is the location specified for an argument of the embedded clause.

- (7) d. I put the painting where you wanted it to be.

In other words, such adverbial clauses display the properties of relativization and hence it makes sense, as proposed by, among others, Geis (1970), Larson (1987, 1990) etc. to analyze such adverbial clauses as free relatives. Interpretively, like free relatives these adverbial clauses denote the maximal set of referents in the relevant discourse domain, which satisfy the description that they derive: i.e. the maximal set of temporal intervals of John's arrival and the maximal set of locations in which the hearer wants the painting to be; both sets are singletons due to the singularity and definiteness of the events involved.

Among the arguments invoked in the literature in favour of the relativization derivation of *when* clauses are the following:

- (i) the etymology of the subordinating conjunction

(ii) the perceived ambiguity between low construal and high construal (Geis 1970, Larson 1987, 1990, etc):

- (8) a. I saw Mary in New York when she claimed she would be in Paris.

(iii) The island effects that arise with respect to the low construal (Geis 1970, Larson 1987, 1990 etc.):

- (8) b. I saw Mary in New York when she made the claim that she would be in Paris.

(iv) The blocking effects of constituents moved to the left periphery (Haegeman 2007, 2010, 2011). It is observed that just as fronted topics block *wh*-movement in English, they block the derivation of temporal *when* clauses:

- (9) a *I cannot remember when you said that her thesis she would finish.
- b *I met Mary at the time when her thesis she was finishing.
- c *I met Mary when her thesis she was finishing.

Haegeman argues that these phenomena, which at the first sight seem unrelated, can actually be accounted for in terms of operator movement. In particular the absence of main clause phenomena (Emonds 1970, 1976; Hooper & Thompson 1973) from adverbial clauses follows directly from the syntactic analysis.

2.2. Null operators

In the adverbial clauses which are reinterpreted as relatives there is still compelling overt evidence for the movement analysis from the presence of the overt relativizer which is etymologically related to other relativizers or *wh*-phrases. However, the arguments invoked to interpret temporal *when* clauses in English as being derived by movement of the operator (*when*) carry over to temporal clauses which superficially do not display an overt *wh*-operator in English. For instance, like a temporal *when* clause, the temporal clause introduced by *after* in (10a) is ambiguous between high construal and low construal, in (10b) low construal is no longer available, argument fronting is blocked in (10c):

- (10) a I saw Mary in New York after she claimed that she would be in Paris.
- b I saw Mary in New York after she made the claim that she would be in Paris.
- c *I saw Mary after her thesis she had finished.

To account for the similarity between these patterns and those displayed by *when* clauses, it can be proposed that such temporal clauses involve movement of a null operator. The derivation of (10a) would involve the leftward movement of a null operator to the CP domain (see Dubinsky & Williams 1995; Demirdache & Uribe Etxebarria 2004 for different implementations):

- (10) d [_{PP} after [_{CP} OP [_{TP} she claimed that...t]]]

In independent work, Takahashi (2008a,b) accounts for constraints on VP ellipsis facts in relation to antecedent temporal clauses on the basis of a movement derivation.

While initially the extension of the relative clause analysis to conditional clauses was debated (Geis 1970, 1975; Citko 2000), various authors have recently argued in favour of analyzing conditionals as relatives derived by (possibly null) operator movement (Lycan 2001; Bhatt & Pancheva 2006; Tomaszewicz 2009; Haegeman 2011) since at least some of the evidence adduced in support of the relativization analysis of temporal clauses extends to conditionals.

2.3. Complement clauses to V and to N as relative clauses

Recently there have been a number of proposals to the effect that even more clause types should be analysed as involving a relativization strategy. The evidence advanced in support of such proposals is essentially of the same kind as that presented above.

Starting from the systematic etymological similarity between complementizers and *wh*-phrases in Romance, Manzini & Savoia (2003, 2005, 2009) propose that complement clauses too are introduced by relativizers. If introducing a variable is a general property of a *wh*-element such as the complementizer *che*, the meaning of an embedded declarative can be taken to also include a variable. Manzini & Savoia (2003) propose that the variable introduced by the complementizer could correspond to the content of the proposition.

Polinsky & Caponigro (2008a,b, 2011) argue that in Adyghe, a Northwest Caucasian language, one type of clause is used for the meanings that are, in the more familiar languages, typical for, among others, headed relatives, free relatives, and complement clauses. They implement an analysis in terms of operator movement, and conclude that this language testifies that complement clauses, as a strategy for the expression of embedded propositions, is dispensable from the inventory of syntactic strategies, as their function is equally well fulfilled by relative clauses.

Haegeman & Ürögdi (2010a,b) argue for the operator movement analysis of a restricted set of complement clauses on the basis of intervention effects which have long been discussed in the literature. Complement clauses of factive verbs are known to be weak islands (11a) as well as being incompatible with Main Clause Phenomena (11b). Both properties directly follow from an operator movement analysis, since postulating an operator in the left periphery of the complement clause will both block extraction of non D-linked elements and the movement of the operator itself to the left periphery will be incompatible with Main Clause Phenomena.

- (11) a *How do you resent that Mary wrote her thesis?
 b *I resent that her thesis Mary did not finish in time.

Based mainly on the formal properties of the conjunction introducing complement clauses of factive predicates, similar proposals were made by Collins (1994), Aboh (2005) for Gungbe and Krapova (2008, 2010) for Bulgarian. One important point of debate that emerges from the discussion around Haegeman & Ürögdi (2010a,b) is to what extent the relativization analysis of complement clause should go hand in hand with postulating that such clauses are dominated by a nominal functional structure (see also Alrenga 2005; Takahashi 2010).

In independent work, and on the basis of semantic arguments, Arsenijević (2009) comes to an even stronger conclusion. In his proposal all complement clauses are derived by operator movement from one of the mood- or force-related projections, and represent predicates of mood, or predicates of force. Arsenijević (2009) assumes a generalized DP analysis: complement clauses are relative clauses modifying a light nominal head. Due to its high structural position and its nature of a minimal projection, the relativized element undergoes head movement and incorporates into a nominal head c-commanding the clause in which it is generated (and sometimes even further, into a light verb selecting this nominal as its direct object). In terms of relativized minimality, only a very limited set of elements would encounter intervention effects in such a configuration. The intuition of selectedness is explained as a consequence of incorporation: an item incorporating an operator of a certain type naturally selects for a structure bound by the operator. This derives the specific properties of complement clauses with respect to other relatives, such as transparency for movement or their selectedness.

- (12) [_{VP} [[[Op_{belief}]⁰]_V⁰] [_{DP} [[Op_{belief}]⁰] [_{CP} that [_{MoodP} Op_{belief} [_{PredP} the earth is flat]]]]]

Using semantic arguments and comparative evidence, Nichols (2001, 2003) explores the status of what are usually considered to be clausal complements to N. She points out that if what are referred to as complements of N are actually adjuncts, then the fact that they are islands for extraction follows. Nichols (2003: 161-2) provides support for the relativization analysis of clausal ‘complements’ to N

from Burmese, in which ‘attitude nominal subordinate clauses ... are formally similar to relative adjuncts’.

Based on a discussion of the properties of lexical nouns, Kayne (2010) concludes that nouns do not take any complements, and that consequently all complement clauses selected by nouns must be analyzed as relative clauses. Kayne’s argument is based on the general properties of open class elements, for which he argues that they cannot project, have any unvalued features, are not a point of variation, and crucially also cannot have complements. The latter follows from their inability to project (a complement is the expression that a projecting head merges in its first merge), and their inability to project derives from the general antisymmetry of syntax.

From a slightly different perspective Koopman & Sportiche (2008) suggest that apparent cases of long subject extraction (giving rise to the so called *que/qui* alternation) are not long extraction cases at all but rather that the relevant patterns rely on alternative structures known as pseudo or predicative relatives thus effectively reinterpreting what used to be considered as complement clauses as the product of a relativization strategy.

2.4. Summary

As can be seen, based on a range of arguments, there have been a range of proposals to extend the relativization analysis beyond what are usually termed relative clauses. One question that emerges is how many different types of expressions, in addition to the traditional types of relative clauses, are amenable to such an analysis and what are the grounds (syntactic, semantic/empirical, conceptual etc.) for the decision.

In the strongest version, it may turn out that all embedded clauses, and perhaps a number of other types of expressions, involve the structural pattern commonly taken to be that of relativization (Kayne 2008, Manzini 2008, Arsenijević 2009, Haegeman 2010, Haegeman & Ürögdi 2010a,b). However, on this assumption the question will immediately arise as to how to differentiate between these types of relative clauses in terms of, for instance, their transparency/opacity for extraction and their compatibility with Main Clause Phenomena.

3. Our workshop

From the above survey it emerges clearly that there exists a considerable array of work arguing that more patterns should be seen as the product of relativization strategies than is traditionally assumed. Though the literature seems to converge on this idea, the relativization hypothesis is usually discussed by isolated authors in papers that are not put side by side (one exception being the recent volume in *Theoretical Linguistics* which, however, is narrowly focused). Many of these publications only focus on one language or on one specific area of interest and do not refer to work done elsewhere so that there is piecemeal discussion of points of the analysis without overall discussion of the issues at hand.

For instance, the arguments provided in support of the relativization analysis of, say, complement clauses, vary from author to author, ranging from diachronic/etymology based arguments, to semantic arguments and syntactic arguments. There is also considerable variation in the implementation of the relativization analysis with some author adopting a full fledged nominal structure (cf. Demirdache & Uribe-Etxebarria 2004 for temporal clauses, Krapova 2010 for the complements of factive predicates, Arsenijević for all *that* clauses), while others postulate a relativized CP layer which lacks the nominal domain (Roussou 1992; Aboh 2005; Haegeman & Ürögdi 2010a,b). The differences between these implementations are important as they must be relevant to the opacity/transparency of the relative domains, but they are rarely acknowledged (one exception being Haegeman & Ürögdi 2010a,b) or

examined in any detail and it is not clear to what extent the different implementations of the analysis can account for the same empirical data.

Our workshop is aimed at providing a stage for presentations and discussion among researchers who have implemented the relative clause analysis as sketched here to expressions that are not typically considered relative clauses, or in explaining phenomena that are not typically linked (only) with relative clauses. By bringing together and confronting the various proposals we hope that a better global view can emerge of the progress that has been made and the problems that remain.

4. Partial bibliography

- Aboh, Enoch. 2005. Deriving relative and factive constructions in Kwa. In: Brugè, L., G. Giusti, N. Munaro, W. Schweikert & G. Turano (eds.), *Contributions to the thirtieth Incontro di Grammatica Generativa*. Venezia: Libreria Editrice Ca'foscara, 265-285.
- Alrenga, Peter. 2005. A sentential subject asymmetry in English and its implications for complement selection. *Syntax* 8: 175-207.
- Arsenijević, Boban. 2009. Clausal complementation as relativization. *Lingua* 119: 39-50.
- Baltin, Mark. 2007. Deletion vs. proforms: a false dichotomy. Ms. New York University.
- Bhatt, Rajesh & Roumyana Pancheva. 2006. Conditionals. In Everaert, M. & H. van Riemsdijk (eds). *The Blackwell Companion to Syntax*. Oxford: Blackwell, vol 1: 638-687.
- Caponigro, Ivano & Maria Polinsky. 2008a. Everything is relative: Evidence from Northwest Caucasian. paper presented at the 31st GLOW Colloquium. Newcastle University, Newcastle, UK, March 26-28, 2008.
- Caponigro, Ivano & Maria Polinsky. 2008b. Relatively speaking (in Circassian). In Natasha Abner and Bishop (eds), *Proceedings of 27th West Coast Conference on Formal Linguistics (WCCFL 27)*, pp. 81-89. Somerville, MA: Cascadia Proceedings Project.
- Caponigro, Ivano & Maria Polinsky. 2011. Relative embeddings: a Circassian puzzle for the syntax/semantics interface. *Natural Language and Linguistic Theory*.
- Chomsky, Noam. 1977. On wh-movement. In: Culicover, P., T. Wasow & A. Akmajian (eds.), *Formal syntax*, New York: Academic Press, 71-132.
- Cinque, Guglielmo. 2009. The prenominal origin of relative clauses. <http://hdl.handle.net/10278/1055>
- Citko, Barbara. 2000. On the syntax and semantics of Polish adjunct clauses. *Journal of Slavic Linguistics* 8: 1-38.
- Collins, Chris. 1994. The factive construction in Kwa. *Travaux de recherche sur le creole haitien* 23: 31-65. Université du Québec à Montréal.
- Demirdache, Hamida & Myriam Uribe-Etxebarria. 2004. The syntax of time adverbs. In *The syntax of time*, Guéron, J. & J. Lecarme (eds.), 143-180. Cambridge, Mass.: MIT Press.
- Donati, Caterina & Carlo Cecchetto. 2010. Relabeling heads: a unified account for relativization structures. *Linguistic Inquiry* 42: 519-560.
- Emonds, Joseph. 1970. Root and structure-preserving transformations. Ph.D. diss., MIT.
- Emonds, Joseph. 1976. *A transformational approach to English syntax*. New York: Academic Press.
- Geis, Michael. 1970. Adverbial subordinate clauses in English. Ph.D. diss., MIT.
- Haegeman, Liliane. 2009. The movement analysis of temporal adverbial clauses. *English Language and Linguistics* 13: 385-408.
- Haegeman, Liliane. 2010. The internal syntax of adverbial clauses. In K. Grohmann & I. Tsimpli (eds.), *Exploring the left periphery*. *Lingua* thematic issue, 120: 628-648.
- Haegeman, Liliane. 2011. The movement derivation of conditional clauses. *Linguistic Inquiry* 41: 595-621.

- Haegeman, Liliane & Barbara Ürögdi. 2010a. Referential CPs and DPs: an operator movement account. *Theoretical Linguistics* 36, 111-152.
- Haegeman, Liliane & Barbara Ürögdi. 2010b. Operator movement, referentiality and intervention. *Theoretical Linguistics* 36, 233-246.
- Hooper, John & Sandra Thompson. 1973. On the applicability of root transformations. *Linguistic Inquiry* 4: 465-497.
- Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge (Mass.): MIT Press
- Kayne, Richard. 2008. Antisymmetry and the lexicon. *Linguistic Variation Yearbook* 8: 1-31.
- Kayne, Richard. 2010. Why isn't 'this' a complementizer? In: *Comparisons and contrasts*. Oxford: U.P., 190-227.
- Koopman, Hilda & Dominique Sportiche. 2008. The que/qui alternation: new analytical directions. Ms. UCLA (available at <http://ling.auf.net/lingBuzz/000638>)
- Krapova, Iliyana. 2010. Bulgarian relative and factive clauses with an invariant complementizer, *Lingua* 120, 1240-1272.
- Larson, Richard. 1987. Missing prepositions and the analysis of English free relative clauses. *Linguistic Inquiry* 18: 239-266.
- Larson, Richard. 1990. Extraction and multiple selection in PP. *The Linguistic Review* 7: 169-182.
- Lycan, William. 2001. *Real conditionals*. Oxford: U.P.
- Manzini, Rita & Leonardo Savoia. 2005. *I dialetti italiani e romanci: morfosintassi generativa* (3 vols.). Alessandria: Edizioni dell'Orso.
- Manzini, Rita & Leonardo Savoia. 2003 The nature of complementizers. *Rivista di Grammatica Generativa* 28: 87-110.
- Manzini, Rita & Leonardo Savoia. 2009. The status of complementizers in the left periphery. Paper presented at GIST 2. On clause typing and Main Clause Phenomena. University of Ghent, 29. September - 1 October 2009.
- Nichols, Lynn. 2001. The syntax and morphosyntax of propositional attitude complementation. Ms. Harvard University
- Nichols, Lynn. 2003. Attitude evaluation in complex NPs. In: Carnie, A., H. Harley & M. Willie (eds), *Formal approaches to function in grammar*. 155-164. Amsterdam: Benjamins.
- Roussou, Anna. 1992. Factive complements and wh-movement in Modern Greek. *UCL Working papers in linguistics* 4, 123-147.
- Takahashi, Shoichi. 2008a. Variable binding in temporal adverbial clauses: evidence from ellipsis. *Proceedings of the 26th West Coast Conference on Formal Linguistics*, ed. Charles B. Chang and Hannah J. Haynie, 445-453.
- Takahashi, Shoichi. 2008b. Variable binding in temporal adverbial clauses: evidence from ellipsis. Ms. http://www.ge.ce.nihon-u.ac.jp/~s_t/TAC.pdf
- Takahashi, Shoichi. 2010. The hidden side of clausal complements. *Natural Language and Linguistic Theory* 28: 343-380.
-