On the Derivation of Relative Clauses in Teotitlán del Valle Zapotec

Much recent work argues that some or all externally headed relative clauses (RCs) are derived by raising of the head NP from an RC-internal position (Kayne 1994, Bianchi 1999, Bhatt 2002, a.o.). We present novel data from Teotitlán del Valle Zapotec (TVZ) which shows that relative clauses in this language lack the head-raising derivation entirely, indicating that the derivation of externally headed RCs is subject to cross-linguistic variation which is not obvious on the surface.

Reciprocal binding. The main strand of evidence suggesting that TVZ relative clauses are not derived by head-raising concerns the absence of binding connectivity with the reciprocal *sa'adan* 'each other'. In English, an instance of *each other* in an RC-head can take as antecedent an RC-internal DP ((1a)), suggesting that the head in these structures has raised from inside the relative clause, allowing the reciprocal to be bound in its base position. In TVZ, however, structures like (1a) are unacceptable, as shown by (1b).

(1) a. The cars of [each other]$_i$'s that [Elsa and Benito]$_i$ saw yesterday are blue.

   b. *Nga'a naa d-kamion xten **sa'adan**   ni   ba-yee   **Els kun Beniit** nai.
       blue   be   PL-car   of   each.other   REL   PERF-see   Els and   Beniit yesterday

The TVZ counterpart of (1a) is not *(1b) but (2), where the PP *xten sa'adan* 'of each other's' appears to have been "stranded" inside the relative clause.

(2) Nga'a naa d-kamion ni   ba-yee   [Els kun Beniit]$_i$ **xten sa'adan**$_i$ nai.
     blue   be   PL-car   REL   PERF-see   Els and Beniit   of   each.other yesterday

The deviance of (1b) cannot be due to a general lack of binding connectivity in the language, as *sa'adan* regularly reconstructs for binding under other types of Ā-movement, as in (3).

(3) Xi   d-maset xten **sa'adan**$_i$ gu-dee   [Juan kun Marie]$_i$?
     what PL-pot of   each.other PERF-carry   Juan and Marie
     'Which pots of each other's did Juan and Marie carry?'

If TVZ relatives could be formed by head-raising, (1b) would have a structure in which a copy of *sa'adan* 'each other' was locally bound by its RC-internal potential antecedent *Els kun Beniit* 'Els and Beniit', and the sentence would therefore be predicted to be acceptable. On our "head-external" analysis à la Chomsky (1977), by contrast, the head of a relative clause in TVZ is base-generated outside the relative clause. Hence *sa'adan* 'each other' is not bound in (1b), violating Principle A, but is bound RC-internally in the acceptable (2), and in its base position in (3).

We further show that our head-external analysis of TVZ relatives accounts for a subtle difference between TVZ and English with regard to variable-binding possibilities in a particular complex configuration—a difference utterly unexpected on a raising analysis of TVZ relatives.

Apparent counterevidence. Reconstruction effects and idiom facts initially seem to suggest that TVZ does allow head-raising after all. We argue that this counterevidence is only apparent.

Reconstruction effects. In TVZ, certain modifiers of RC-heads can be interpreted within the scope of RC-internal elements, as in English (Bhatt 2002). An example is *-zi* 'only':

(4) [Context: Markuh and Luk agreed to watch the movie *Dbizin* (*The Mice*). Then they changed their minds and agreed to only watch *Dàín-Dux* (*The Forest*).]
     Dàín-Dux naa tee-zi   pelikuh ni   gu-nii   Markuh kun Luk gu-yee-d-an.
     Forest   is   one-only movie   REL PERF-say Markuh and Luk POT-see-PL-3
     Lit. '*The Forest* is the only movie that Markuh and Luk agreed to watch.'

On a surface scope reading (*only* ≫ *agree*), (4) would be false, since there were two movies that Markuh and Luk agreed to watch (at different times). On an inverse scope reading (*agree* ≫ *only*), it would be true, since Markuh and Luk agreed at one point that they would watch only *The Forest* (cf. Heycock 2005). The inverse scope reading is robustly available in TVZ: (4) is felicitous. If RC-internal interpretations of RC-head modifiers come about through syntactic reconstruction (Bhatt 2002), then sentences like (4) seem to suggest that TVZ does have raising relatives after all.

 Idiom chunks. TVZ has at least one VP-idiom, which is exemplified in (5):

(5) Nai   gu-**daw**-an **ru'u Marie**.   lit. 'Yesterday he ate Marie's mouth.'
    yesterday PERF-eat-3H mouth Marie   id. 'Yesterday he kissed Marie.'

Phrases of the form *-daw- ru'u* (*X*) literally mean 'eat (X's) mouth', but are interpreted idiomatically as meaning 'kiss (X)'. When *ru'u* 'mouth' is used as the head of an object relative and the lexical predicate of the relative clause is a form of *-daw-* 'eat', the idiomatic interpretation is available. This might be taken to suggest that, in these structures, the head *ru'u* 'mouth' is generated as the object of *-daw-* 'eat' and raises out of the relative clause to its surface position.

 Analysis. We show that, despite initial appearances, the only plausible analysis of TVZ relatives is one on which they are not derived by head-raising. On our analysis, what moves to [Spec,CP] in a TVZ relative clause is not the RC-head but rather a null operator (comparable to the English relative pronoun *which*), and the relative CP is adjoined to the NP head:

(6) [$_{NP}$ NP$_{head}$ [$_{CP}$ Op$_i$ [$_{C'}$ C … t_i …]]]

This accounts straightforwardly for the fact that a reciprocal (*(1b)) or would-be bound variable inside an RC-head cannot take an RC-internal antecedent: the head is generated outside the RC, so a reciprocal or pronoun inside the head is never c-commanded by any RC-internal nominal phrase at any stage of the derivation. When *xten sa'adan* 'of each other's' is "stranded" RC-internally ((2)), it is an adjunct to the null operator; in these cases, the adjunction structure [$_{DP}$ Op [$_{PP}$ *xten sa'adan*]] moves to [Spec,CP], but spellout of its lower copy is forced by an independently motivated TVZ-specific PF requirement similar to the Doubly Filled COMP Filter.

 The evidence that seems to argue in favor of head-raising in TVZ is only apparent. "Low" readings of modifiers of RC-heads ((4)) come about not through syntactic reconstruction (which would require head-raising) but through semantic reconstruction. The VP-idiom evidence can be accounted for on the plausible assumption that *-daw-* 'eat' in fact has two meanings. In short, the only analysis of TVZ relatives that is compatible with all the data is a non-head-raising analysis.

 Broader implications. Our results reveal that some languages with externally headed relative clauses lack the head-raising derivation altogether. This shows that externally headed relative clauses are a cross-linguistically heterogeneous category: garden-variety relative clauses in TVZ and English look quite similar on the surface, but have very different syntactic derivations.

References. Bhatt, R. 2002. The Raising Analysis of Relative Clauses: Evidence from Adjectival Modification. *Natural Language Semantics* 10:43-90. Bianchi, V. 1999. *Consequences of Antisymmetry: Headed Relative Clauses.* Mouton de Gruyter. Chomsky, N. 1977. On *wh*-movement. In P. Culicover, T. Wasow, & A. Akmajian (eds.), *Formal Syntax*, 71-132. Academic Press, NY. Heycock, C. 2005. On the interaction of adjectival modifiers and relative clauses. *Natural Language Semantics* 13:359-382. Kayne, R. 1994. *The Antisymmetry of Syntax*. Cambridge: MIT Press.