UC Berkeley
Proceedings of the Annual Meeting of the Berkeley Linguistics Society

PROCEEDINGS OF THE FORTY-FIRST ANNUAL MEETING OF THE
BERKELEY LINGUISTICS SOCIETY

February 7-8, 2015

General Session

Special Session
Fieldwork Methodology

Editors
Anna E. Jurgensen
Hannah Sande
Spencer Lamoureux
Kenny Baclawski
Alison Zerbe

Berkeley Linguistics Society
Berkeley, CA, USA

Berkeley Linguistics Society
University of California, Berkeley
Department of Linguistics
1203 Dwinelle Hall
Berkeley, CA 94720-2650
USA

Contents

iii

Acknowledgments

Foreword

This monograph contains a number of the talks given at the 41st Annual Meeting of the Berkeley Linguistics Society, held in Berkeley, California, February 7-8, 2015. The conference included a General Session and the Special Session *Fieldwork Methodology*. The 41st Annual Meeting was planned and run by the second-year graduate students of the Department of Linguistics at the University of California, Berkeley: Kenny Baclawski, Anna Jurgensen, Spencer Lamoureux, Hannah Sande, and Alison Zerbe.

The original submissions of the papers in this volume were reviewed for style by Anna Jurgensen and Hannah Sande. Resubmitted papers were edited as necessary by Anna Jurgensen and Kenny Baclawski, and then compiled into the final monograph by Anna Jurgensen. The final monograph was reviewed by Spencer Lamoureux. The endeavor was supported by Alison Zerbe's management of the Berkeley Linguistic Society's funds for publications.

The BLS 41 Executive Committee
July 2015

On the Derivation of Relative Clauses in Teotitlán del Valle Zapotec

Nick Kalivoda, Erik Zyman
University of California, Santa Cruz∗

1 Introduction

The syntax of externally headed relative clauses, such as that in (1), has received a number of analyses.[1]

(1)   the [head skateboard] [RC that I bought]

On the traditional **head-external** analysis, pursued by Chomsky (1973, 1977), among others, the formation of the relative clause involves the movement of an overt or null relative pronoun, which in English can be *which*, *who*, or a null element. The head of the relative clause is base-generated outside the relative clause, and the relative clause adjoins to it. This analysis is schematized in (2).

(2)   the [NP [NP skateboard] [CP $\varnothing_i$ that I bought t_i]]

On the **raising** or **head-raising** analysis, by contrast, the head originates inside the relative clause and raises out of it, or to its edge (Åfarli 1994, Kayne 1994, Bianchi 1999, Bhatt 2002). One implementation of this analysis is shown below.

[1]Abbreviations used: A = animal; ADJ = adjectivalizer; COMPAR = comparative; COMP = complementizer; COMPL = completive; COP = copula; EMPH = emphatic; H = human; HAB = habitual; INAN = inanimate; IRR = irrealis; LOC = locative; NEUT = neutral aspect; PL = plural; PROG = progressive; REL = relativizer. The orthography used here is very close to that used by Lillehaugen et al. (2015).

(3)

```
                        DP
                 ┌───────┴───────┐
                 D              nP
                the        ┌─────┴──────┐
                          NP_i          │
                        ┌──┴──┐      ┌───┴────┐
                    skateboard  n            CP
                                        ┌─────┴─────┐
                                      DP_k          C′
                                   ┌───┴───┐     ┌───┴───┐
                                   D      t_i   I bought t_k
                                {∅/which}
```
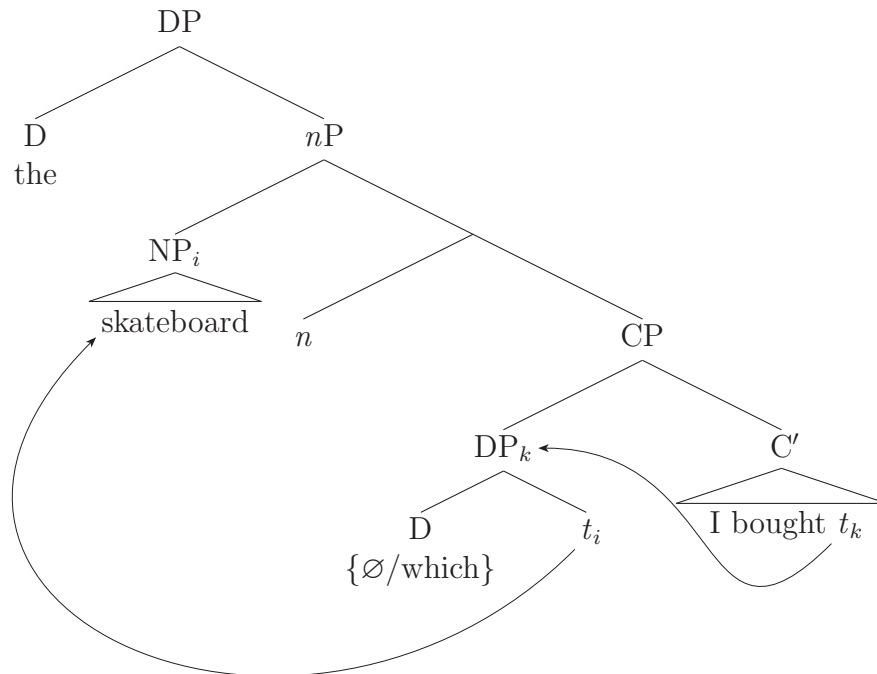
Finally, the **matching** analysis holds that the overt head of the relative clause is generated outside the relative clause, but what moves inside the relative clause is not a relative pronoun but (a nominal phrase containing) an NP similar or identical to the visible "external" head, and this "internal head" is elided under identity or near-identity with the external head (Lees 1960, 1961, Chomsky 1965, Sauerland 1998, 2003).

Much recent work (Åfarli 1994, Kayne 1994, Bianchi 1999, Bhatt 2002) argues that some or all externally headed relative clauses are derived by head-raising. Here, we present novel data from our own fieldwork that yield insights into the structure and derivation of relative clauses in Teotitlán del Valle Zapotec (TdVZ), an Oto-Manguean language spoken in the town of Teotitlán del Valle, which is approximately 30 kilometers east of the city of Oaxaca in Oaxaca State, Mexico. These data show that relative clauses in TdVZ lack the head-raising derivation entirely, indicating that the derivation of externally headed relative clauses is subject to cross-linguistic variation which is not obvious on the surface.

The paper is organized as follows. §2 lays out the basic facts of relativization in TdVZ. §3 presents evidence that TdVZ relatives cannot be formed by head-raising; this evidence comes from reciprocal binding and bound variable anaphora. §4 presents apparent evidence **for** a head-raising derivation for TdVZ relatives, which comes from diagnostics developed by Bhatt (2002) in his investigation of English relatives. We argue that, despite appearances, the only analysis of TdVZ relatives that allows us to make sense of all the data is one on which they are never derived by head-raising. The various effects that seem to tell in favor of head-raising are in fact all, in one way or another, due not to head-raising but to semantic reconstruction. §5 presents our non-head-raising analysis of TdVZ relatives and extends it to account for an interesting property of these structures—namely, that a PP that seems to be modifying the head of a TdVZ relative clause can sometimes unexpectedly appear **inside** the relative clause. §6 concludes.

2 Background: Basic Properties of TdVZ Relatives

TdVZ relative clauses are postnominal and externally headed (at least on the surface). In relative clauses and matrix declaratives, both SVO and VSO are possible and common word orders. The language allows relativization of (at least) subjects, direct objects, indirect objects, and locative and temporal adjuncts. Examples of argument relativization are given in (4–6) (we return to adjunct relativization in §5).

(4) *Subject relativization*

benih ni kayul

benih ni kay-ul
person REL PROG-read
'the person who's reading'

(5) *Direct object relativization*

libr ni bato'o Mari

libr ni ba-to'o Mari
book REL COMPL-sell Mari
'the book that Mari sold'

(6) *Indirect object relativization*

benih ni baded Roos te libr

benih ni ba-ded Roos te libr
person REL COMPL-give Roos a book
'the person Roos gave a book to'

As these examples show, when a nominal phrase is relativized, the relative clause is introduced by a left-peripheral element *ni*. We analyze this element as a relative complementizer rather than a relative pronoun, in part because it cannot cooccur with a pied-piped preposition:

(7) a. Sofie zuban lo te bangu.
   Sofie zub-an **lo** te bangu.
   Sofie is.sitting-3H on a chair
   'Sofie is sitting on a chair.'

   b. bangu ⟨***lo**⟩ ni ⟨***lo**⟩ zub Sofie
   bangu ⟨***lo**⟩ ni ⟨***lo**⟩ zub Sofie
   chair ⟨*on⟩ REL ⟨*on⟩ is.sitting Sofie
   'the chair that Sofie is sitting on'

In TdVZ, when an overt interrogative *wh*-phrase which is the object of a preposition is moved, the preposition is pied-piped (and typically inverts with the *wh*-phrase; see Nee 2012:37-38). Therefore, the unacceptability of (7b) with *lo* 'on' would be unexpected if *ni* were a relative pronoun (i.e., a relative operator bearing a [WH] feature). Furthermore, *ni* can be used as a non-relative complementizer as well, as in (8) (adapted slightly from Gutiérrez Lorenzo 2014:61, (226)).

(8) Luis bain ni gudinya lam.

Luis ba-in   ni   gu-diny-a   lam.
Luis COMPL-make COMP COMPL-kill-1.SG 3.A
'Luis made me kill it (the animal).'

Finally, it is worth noting that *ni* does not resemble any of the demonstratives in TdVZ (*kin* 'that (distal)', *kan* 'that (distal)', *re* 'that (medial)', *rè'* 'this', *nde* 'this'), or any of the interrogative *wh*-words (e.g., *tu* 'who, which', *xi* 'what, which').

But although we are analyzing *ni* as a complementizer base-generated in the left periphery of relative clauses, TdVZ relatives can be shown to be formed by movement—specifically, of a phonologically null relative operator, as in the English example (1). To see this, consider first the fact that TdVZ relative clauses are themselves islands:

(9) *TdVZ relative clauses are islands*

     a. Markuh rumbee gunaa ni guzi dguzhar.

         Markuh ru-mbee   gunaa ni   gu-zi   d-guzhar.
         Markuh HAB-know woman REL COMPL-buy PL-spoon
         'Markuh knows the woman who bought the spoons.'

     b. *Xi rumbee Markuh gunaa ni guzi?

         *Xi   ru-mbee   Markuh gunaa ni   gu-zi?
         what HAB-know Markuh woman REL COMPL-buy
         lit. '*What$_i$ does Markuh know the woman who bought ___$_i$?'
         int. 'What is such that Markuh knows the woman who bought it?'

The unacceptability of (9b) shows that TdVZ forbids *wh*-extraction from a relative clause (even when the *wh*-phrase is a complement). Given that TdVZ relative clauses are islands, we can determine whether relativization is island-sensitive by attempting to relativize out of a relative. This produces unacceptable results:

(10) *No relativization out of subject relatives*

     a. *Na bayee dibuj ni Els rumbee benih ni bain.

         *Na ba-yee   dibuj   ni   Els ru-mbee   benih ni   ba-in.
         I   COMPL-see.1.SG drawing REL Els HAB-know person REL COMPL-make
         lit. '*I saw the drawing$_i$ that Els knows the person who made ___$_i$.'
         int. 'I saw the drawing such that Els knows the person who made it.'

     b. *Markuh rap juget ni bayee gule'en ni bazhiel.

         *Markuh ra-p   juget ni   ba-yee   gule'en ni   ba-zhiel.
         Markuh HAB-have toy   REL COMPL-see.1.SG boy   REL COMPL-find
         lit. '*Markuh has the toy$_i$ that I saw the boy who found ___$_i$.'
         int. 'Markuh has the toy such that I saw the boy who found it.'

(11)   *No relativization out of object relatives*

    a. *Na rumbee gunaa ni rizhulaaza kamion ni bain pintar.

        *Na ru-mbee   gunaa ni ri-zhulaaz-a kamion ni ba-in   pintar.
        I   HAB-know woman REL HAB-like-1.SG car   REL COMPL-do paint
        lit. '*I know the woman who$_i$ I like the car that ___$_i$ painted.'
        int. 'I know the woman such that I like the car she painted.'

    b. *Na bayee ngiu ni kua'a zhape'en kafee ni guniab.

        *Na ba-yee   ngiu ni ku-a'a   zhape'en kafee ni gu-niab.
        I   COMPL-see.1.SG man REL COMPL-take girl   coffee REL COMPL-order
        lit. '*I saw the man who$_i$ the girl took the coffee that ___$_i$ ordered.'
        int. 'I saw the man such that the girl took the coffee he ordered.'

We conclude, then, that relative clauses are formed by movement in TdVZ. But this conclusion is compatible with every major analysis of relativization, and does not bear directly on the question of whether TdVZ relatives can be formed by head-raising. We now turn to facts which can help us adjudicate between head-raising and non-head-raising analyses of TdVZ relatives.

3   Evidence Against Head-Raising

3.1   Reciprocal Binding

In English, the head of a relative clause can contain an anaphor such as the reciprocal *each other*, as in (12).[2]

(12)   Elsa and Benito$_i$ saw the [cars of each other$_i$'s] that are blue.

In (12), *each other* is bound by a DP that c-commands it in surface syntax. But an instance of *each other* in an RC-head can also take as its antecedent a DP inside the relative clause:

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

On the standard assumption that *each other* is subject to (some version of) Condition A (Chomsky 1981, 1986), sentences like (13) strongly suggest that English relativization structures can be formed by head-raising, allowing *each other* in (13) to be bound by its RC-internal antecedent in its base position. A derivation of this type for (13) is shown in (14).

---

[2]All English judgments are our own. Some of the English phenomena discussed in this section are subject to interspeaker variation. This variation, though very interesting in its own right, is not directly relevant here.

(14)

```
                    DP
            _____|_____
           D                 nP
          the          _____|_____
                     NPₖ            CP
                _____|_____   _____|_____
              cars of each      DPᵢ        ...
              other's        ___|___    ___|___
                            D    tₖ   C        TP
                            ∅        that   ___|___
                                          Elsa and Benito saw tᵢ yesterday
```
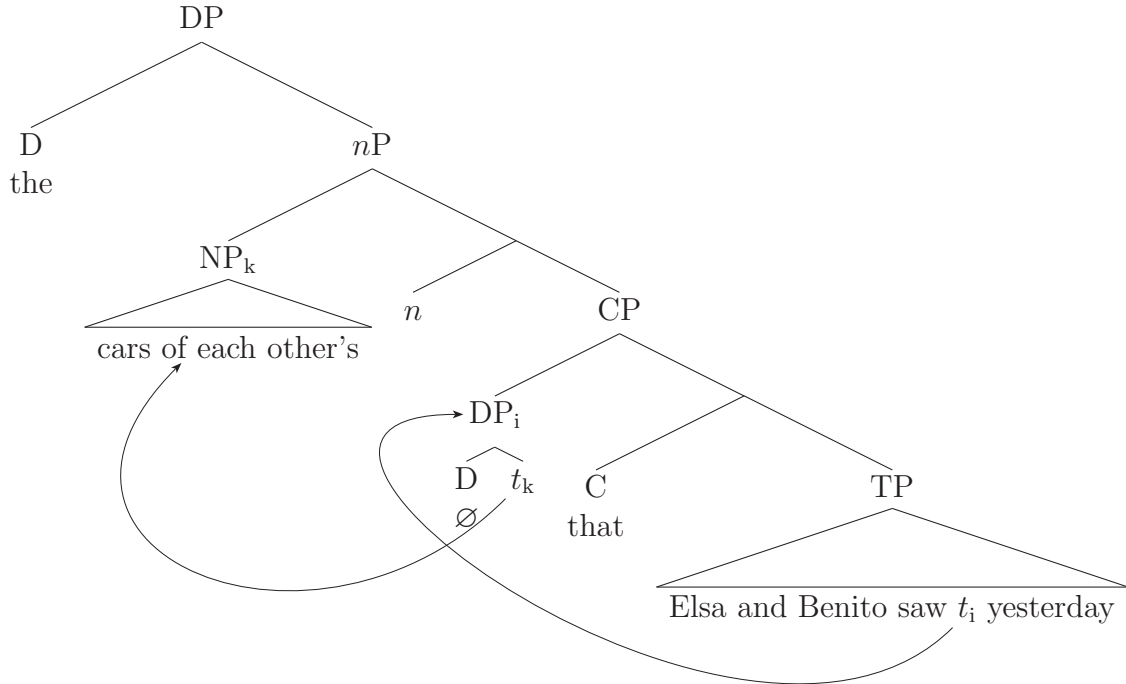
The question, then, is whether binding data from TdVZ support the hypothesis that TdVZ relatives can also be derived along the lines shown in (14). To begin answering this question, let us first consider the baseline examples in (15), which establish that a reciprocal in an RC-head may be bound by a **matrix** antecedent in TdVZ.

(15) a. Sofie kun Markuh rizhulaaz dmaset xten sa'adan ni bain Oliib.

   Sofie kun Markuh$_i$ ri-zhulaaz d-maset xten **sa'a-d-an**$_i$ ni ba-in
   Sofie and Markuh HAB-like PL-pot of SA'A-PL-3H REL COMPL-make
   Oliib.
   Oliib
   'Sofie and Markuh like the pots of each other's that Oliib made.'

   b. Marie kun Luk gula'a dkomputador xten sa'adan ni bain sru Mart.

   Marie kun Luk$_i$ gu-la'a d-komputador xten **sa'a-d-an**$_i$ ni
   Marie and Luk COMPL-break PL-computer of SA'A-PL-3H REL
   ba-in sru Mart.
   COMPL-make good Mart
   'Marie and Luk broke the computers of each other's that Mart fixed.'

   c. Dbekuh gudo djuget xten sa'adum ni guzi Serjih.

   D-bekuh$_i$ gu-do d-juget xten **sa'a-d-um**$_i$ ni gu-zi Serjih.
   PL-dog COMPL-eat PL-toy of SA'A-PL-3A REL COMPL-buy Serjih
   'The dogs ate the toys of each other's that Serjih bought.'

These examples show that an RC-head can host a reciprocal in TdVZ. This being so, we can now ask whether this language permits a reciprocal in an RC-head to take as its antecedent a nominal phrase inside the relative clause. The answer is no, as shown by the sentences in (16), which are fully unacceptable.

224

(16)   a. *Nga'a naa dkamion xten sa'adan ni bayee Els kun Beniit nai.

     *Nga'a naa d-kamion xten **sa'a-d-an** ni   ba-yee   **Els kun Beniit**
     blue   COP PL-car   of   SA'A-PL-3H REL COMPL-see Els and Beniit
     nai.
     yesterday
     int. 'The cars of each other's that Els and Beniit saw yesterday are blue.'

    b. *Gura'au naa dkubet xten sa'adan ni gudee Sofie kun Luk.

     *Gura'au naa d-kubet   xten **sa'a-d-an** ni   gu-dee   **Sofie kun Luk**.
     big   COP PL-bucket of   SA'A-PL-3H REL COMPL-carry Sofie and Luk
     int. 'The buckets of each other's that Sofie and Luk carried are big.'

Interestingly, the way to express the intended meanings of sentences like these is to place the PP *xten sa'adan* 'of each other's' **inside** the relative clause. For example, the well-formed counterparts of (16a-b) are (17a-b), respectively.

(17)   a. Nga'a naa dkamion ni bayee Els kun Beniit xten sa'adan nai.

     Nga'a naa d-kamion ni   ba-yee   Els kun Beniit **xten sa'a-d-an**
     blue   COP PL-car   REL COMPL-see Els with Beniit of   SA'A-PL-3H
     nai.
     yesterday
     'The cars of each other's that Els and Beniit saw yesterday are blue.'

    b. Gura'au naa dkubet ni gudee Sofie kun Luk xten sa'adan.

     Gura'au naa d-kubet   ni   gu-dee   Sofie kun Luk **xten sa'a-d-an**.
     big   COP PL-bucket REL COMPL-carry Sofie and Luk of   SA'A-PL-3H
     'The buckets of each other's that Sofie and Luk carried are big.'

The relative positions of *xten sa'adan* 'of each other's' and *nai* 'yesterday' in (17a) show us that the PP *xten sa'adan* is truly RC-internal in these examples, and not RC-external but extraposed. In (17a), *nai* 'yesterday' is interpreted as modifying the relative clause predicate *bayee* 'saw', not the matrix predicate *nga'a* 'blue'. Therefore, *nai* 'yesterday' must be inside the relative clause, and hence so must *xten sa'adan* 'of each other's', which precedes it. Inverting *xten sa'adan* 'of each other's' and *nai* 'yesterday' in (17a) produces unacceptability:

(18)   *Nga'a naa dkamion ni bayee Els kun Beniit nai xten sa'adan.

    *Nga'a naa d-kamion ni   ba-yee   Els kun Beniit <u>nai</u>   **xten sa'a-d-an**.
    blue   COP PL-car   REL COMPL-see Els with Beniit yesterday of   SA'A-PL-3H
    int. 'The cars of each other's that Els and Beniit saw yesterday are blue.'

This shows that an instance of *sa'adan* 'each other' is illicit outside a relative clause—whether it precedes or follows the relative clause—when its would-be antecedent is **inside** the relative clause.

We see, then, that *sa'adan* 'each other' does not display binding connectivity in relativization structures: an instance of *sa'adan* in an RC-head cannot take as its antecedent

a nominal phrase inside the relative clause. If one wanted to square this fact with a head-raising analysis of TdVZ relatives, one might suggest that perhaps *sa'adan* 'each other' **never** reconstructs for binding. But this is not the case: *sa'adan* regularly reconstructs for binding under other types of Ā-movement, such as *wh*-question formation and topicalization, as shown in (19-20).[3]

(19) Xi dmaset xten sa'adan gudee Juan kun Marie?

Xi   d-maset xten **sa'a-d-an**$_i$ gu-dee   **Juan kun Marie**$_i$?
what PL-pot of   SA'A-PL-3H COMPL-carry Juan and Marie
'Which pots of each other's did Juan and Marie carry?'

(20) Dmaset xten sa'adan gudee Juan kun Marie.

D-maset xten **sa'a-d-an**$_i$ gu-dee   **Juan kun Marie**$_i$.
PL-pot of   SA'A-PL-3H COMPL-carry Juan and Marie.
'Each other's pots, Juan and Marie carried.'

In (19), *sa'adan* 'each other' is embedded in a *wh*-nominal which has undergone interrogative *wh*-movement; as a result, the reciprocal has crossed its antecedent (the plural subject). Sentence (20) shows an analogous case of Condition A binding connectivity involving topicalization. These examples show that the binding **non**-connectivity displayed by *sa'adan* 'each other' in relativization structures is an effect specific to relativization. If TdVZ relatives could be formed by head-raising, the instance of *sa'adan* 'each other' in the head of an object relative like those in (16) would have a copy c-commanded by its RC-internal potential antecedent. Therefore, we would expect that its binding needs would be met in its base position and that the sentences would be acceptable.

These data constitute our first piece of evidence that TdVZ relativization structures are head-external: the (visible) head of a relative clause in this language is never inside the relative clause at any stage of the derivation. This analysis explains why an instance of *sa'adan* 'each other' in an RC-head can never take as its antecedent a nominal phrase inside the relative clause.

3.2 Bound Variable Anaphora

A second strand of evidence that TdVZ relatives are not formed by head-raising comes from bound variable anaphora. Consider the following sentence, which features a bound variable that is not c-commanded by its binder in surface syntax:

(21) Idee de ke sru'inte naam bain kadga bekuh feliis.

Idee de ke   sru'in-te   naa-**m**$_i$ ba-in   **kadga bekuh**$_i$ feliis.
idea of that pretty-EMPH COP-3A COMPL-make each   dog   happy
'The idea that it$_i$ was really pretty made each dog$_i$ happy.'

---

[3]These examples also show that *sa'adan* 'each other' can precede its antecedent, and hence the unacceptable relativization structures we have seen cannot be unacceptable because they feature the linear configuration [... *sa'adan*$_i$ ... ANTECEDENT$_i$ ...].

In (21), the third-person singular animal clitic *-m* 'it', which is the subject of the clausal complement to the noun *idee* 'idea', can be interpreted as a variable bound by the quantified nominal *kadga bekuh* 'each dog'. We analyze this as the result of Quantifier Raising: *kadga bekuh* raises covertly to the root of the tree and from that position binds the variable *-m* 'it', as well as its own lowest copy, as shown in (22).

(22) [**kadga bekuh**]$_1$ [idee de ke   sru'in-te   naa-**m**$_1$ ba-in t_1 feliis]
      [**each   dog**]$_1$ idea of that pretty-EMPH COP-3A$_1$ COMPL-make t_1 happy

This Quantifier Raising operation apparently does not induce a weak crossover violation in TdVZ—or, for that matter, in (our) English—plausibly because the pronominal being crossed over is embedded in the clausal complement to a noun, and/or because of the causative nature of the main-clause predicate (cf. Moulton 2013:2).

In our English, the complex DP containing the bound pronoun in a sentence like (21) can be "relativized out" and the bound variable reading preserved:

(23) We talked about the idea that it$_i$ was really pretty that made each dog$_i$ happy.

This constitutes more evidence that English relativization structures can be formed by head-raising. If (23) can be formed by head-raising, then the bound variable reading can come about as follows. At LF, the structure is something like the following:

(24) the [idea that it was really pretty]$_k$ ...
      that [**each dog**]$_1$ [$_{DP}$ [$_D$ ∅] [idea that it$_1$ was really pretty]$_k$] made t_1 happy

Because there is a copy of [*idea that it was really pretty*] inside the relative clause, *each dog* can covertly QR past it, reach a position near the left edge of the relative clause, and from that position bind *it*, as well as its own lowest copy, as shown in (24).

If, as we contend, TdVZ relativization structures cannot be formed by head-raising, then the TdVZ counterpart of (23) should not have the bound variable reading. This prediction is correct:

(25) *Bayuyun xten idee de ke sru'inte naam$_i$ ni bain kadga bekuh$_i$ feliis.

      *Ba-yuy-un   xten idee de ke   sru'in-te   naa-**m**$_i$ ni   ba-in
      COMPL-talk-1.PL of   idea of that pretty-EMPH COP-3A REL COMPL-make
      kadga   bekuh$_i$ feliis.
      each   dog   happy
      int. 'We talked about the idea that it$_i$ was really pretty that made each dog$_i$ happy.'

This follows from our head-external analysis of TdVZ relatives. The pronominal inside the RC-head cannot be bound inside the relative clause, because there is no copy of the RC-head inside the relative clause. Nor can the pronominal be bound in its surface position. This would require *kadga bekuh* 'each dog' to QR out of the relative clause, to a position from which it could bind the pronominal, but this movement is impossible because TdVZ relatives are islands.

Further support for the claim that a pronominal in an RC-head cannot be bound by an RC-internal quantifier in TdVZ comes from the following contrasts, which are precisely analogous to the one we have just seen:

(26) [Context: There are a bunch of boys, and each one has been claimed by someone or other to be really smart. Each boy is happy about the claim that he's really smart.]

    a. Dizh de ke nasinte naan$_i$ bain kadga gule'en$_i$ feliis.

Dizh	de	ke	nasin-te	naa-**n**$_i$	ba-in	**kadga gule'en**$_i$	feliis.
word	of	that	smart-EMPH	COP-3H	COMPL-make	each boy	happy

       'The claim that he$_i$ was really smart made each boy$_i$ happy.'

    b. *Bayuyun dizh de ke nasinte naan$_i$ ni bain kadga gule'en$_i$ feliis.

*Ba-yuy-un	dizh	de	ke	nasin-te	naa-**n**$_i$	ni	ba-in	**kadga**
COMPL-talk-1.PL	word	of	that	smart-EMPH	COP-3H	REL	COMPL-make	each

gule'en$_i$	feliis.
boy	happy

       int. 'We made the claim that he$_i$ was really smart that made each boy$_i$ happy.'

(27) a. Dizh-gizhih de ke debilte naan$_i$ bain kadga ngiu$_i$ nazhichih.

Dizh-gizhih	de	ke	debil-te	naa-**n**$_i$	ba-in	**kadga ngiu**$_i$
word-trash	of	that	weak-EMPH	COP-3H	COMPL-make	each man

na-zhichih.
ADJ-angry

       'The rumor that he$_i$ was really weak made each man$_i$ angry.'

    b. *Bayuyun dizh-gizhih de ke debilte naan$_i$ ni bain kadga ngiu$_i$ nazhichih.

*Ba-yuy-un	dizh-gizhih	de	ke	debil-te	naa-**n**$_i$	ni	ba-in
COMPL-talk-1.PL	word-trash	of	that	weak-EMPH	COP-3H	REL	COMPL-make

kadga ngiu$_i$	na-zhichih.
each man	ADJ-angry.

       int. 'We spread the rumor that he$_i$ was really weak that made each man$_i$ angry.'

The fact that pronominals in RC-heads, like reciprocals in RC-heads, fail to display connectivity for bound variable anaphora in TdVZ would be unexpected on a head-raising analysis of TdVZ relatives, but receives a straightforward explanation on our head-external analysis.

4 Apparent Evidence for Head-Raising

Although the lack of binding connectivity across relative clause boundaries suggests that TdVZ relatives cannot be derived by head-raising, there are two strands of evidence that initially seem to suggest that TdVZ does have head-raising after all. In this section, we discuss the relevant facts and argue that, despite appearances, they do not in fact constitute counterevidence to our non-head-raising analysis of TdVZ relatives.

4.1 Relativization of a VP-Idiom Chunk

Bhatt (2002) (following Brame 1968 and Schachter 1973, a.o.), argues that, when a VP-idiom is "split up" by relativization and the idiomatic reading is preserved, this is evidence that the relativization structure has been formed by head-raising.

TdVZ has at least one VP-idiom, illustrated in (28):

(28) Nai gudawan ru'u Marie.

    Nai   gu-**daw**-an   **ru'u** Marie.
    yesterday COMPL-**eat**-3H **mouth** Marie
    lit. 'Yesterday he ate Marie's mouth.'
    id. 'Yesterday he kissed Marie.'[4]

The idiom is *-daw- ru'u* (X), which literally means 'eat (X's) mouth', but is interpreted as meaning 'kiss (X) (on the mouth or anywhere on his/her face)'. When *ru'u* 'mouth' is used as the head of an object relative and the relative clause predicate is a form of *-daw-* 'eat', the relativization structure can be interpreted idiomatically, as shown in (29a-b). In these sentences, a form of *-daw-* 'eat' is used, but this verb is interpreted idiomatically as meaning 'kiss'.

(29)   a. Zhnia naa ru'u ni gudo Marie.

          Zhnia naa **ru'u** ni gu-**do**   Marie.
          red   COP mouth REL COMPL-eat Marie
          'The mouth that Marie kissed is red.'

    b. Gura'au naa ru'u ni gudo Beed.

          Gura'au naa **ru'u** ni gu-**do**   Beed.
          big   COP mouth REL COMPL-eat Beed
          'The mouth that Beed kissed is big.'

On the standard assumption that two constituents that could serve as the chunks of an idiom must be highly local to one another at LF for the idiomatic interpretation to be available, (29a-b) would seem to suggest that TdVZ relatives can be derived by head-raising after all. On such an analysis, (29a-b) have idiomatic readings because their RC-heads (*ru'u* 'mouth') have raised from the object position of *-daw-* 'eat', and hence form an underlying constituent with it.

However, these facts can be given an alternative analysis which is compatible with our head-external analysis of TdVZ relatives. The relativization structures we have just seen involving the idiom *-daw- ru'u* (X) 'kiss (X)' are different in an important respect from English relativization structures such as the following:

(30)   a. the headway we made
       b. the umbrage she took at those remarks
       c. the advantage he took of them

The head nouns in (30) are truly unusable without their licensing verbs:

(31)   We discussed the {*headway / *umbrage / #advantage}.[5]

---

[4]This sentence is felicitous if the referent of the subject kissed Marie on the mouth or anywhere on her face.
[5]The version of this sentence with *advantage* is well formed, but does not have anything like the idiomatic reading available in (30c).

The noun *ru'u* 'mouth', on the other hand, is meaningful independently of the idiom *-daw- ru'u* (X) 'kiss (X)'. We can capture the interpretation of sentences like (29a-b) by positing that they involve a special meaning of the verb *-daw-* 'eat' (cf. Kratzer 1996:114-115):

(32)   a. $[\![\textbf{-daw-}_1]\!] = \lambda x$. λy . y ate x
       b. $[\![\textbf{-daw-}_2]\!] = \lambda x : x$ is a mouth . λy . y kissed x

On this analysis, a relativization structure like *ru'u ni gudo Marie* (lit. 'the mouth that Marie ate') in (29a)—even on a head-external analysis of TdVZ relatives—will have available to it, by Predicate Modification, the desired idiomatic interpretation, shown below.

(33) ιx [x is a mouth and Marie kissed x]

Therefore, the fact that the idiom *-daw- ru'u* (X) 'kiss (X)' can be broken up by relativization and the idiomatic reading preserved does not force a head-raising analysis, but rather is fully compatible with our head-external analysis of TdVZ relatives.

4.2   Low Readings of RC-Head Modifiers

Another phenomenon that initially appears to provide evidence for head-raising in TdVZ has to do with low (RC-internal) readings of RC-head modifiers (Bhatt 2002). The phenomenon can be illustrated using English examples, such as (34), which is ambiguous:

(34)   the first book that John said Tolstoy had written
       a.   **High reading:**
            'the book that John said Tolstoy had written before he said Tolstoy had written any other book'
            (Order of saying matters; order of writing is irrelevant.) $\boxed{\textit{first} \gg \textit{said}}$
       b.   **Low reading:**
            'the book that John said Tolstoy wrote before he wrote any other book'
            (Order of writing matters; order of saying is irrelevant.) $\boxed{\textit{said} \gg \textit{first}}$

       [adapted from Bhatt 2002:57, (20)]

It appears that, on the "low" reading of *first* in (34), *first* is interpreted within the scope of the RC-internal verb *said*. An analogous ambiguity is observed when *first* is replaced with *only* ((35)) or with an ordinary superlative such as *longest*.

(35)   the only book that John said Tolstoy had written
       a.   **High reading:**
            'the only book about which John said that Tolstoy had written it' $\boxed{\textit{only} \gg \textit{said}}$
       b.   **Low reading:**
            'the book about which John said that Tolstoy had written it and no other book'
            $\boxed{\textit{said} \gg \textit{only}}$

       [adapted from Bhatt 2002:57, (21a)]

Bhatt (2002) argues that the low readings of these English RC-head modifiers come about through head-raising. When head-raising occurs, there is a copy of the RC-head modifier in the (RC-internal) base position of the head, below the RC-internal verb (e.g., *said*). The interpretation at LF of this low copy of the modifier rather than its highest copy produces the low reading of the modifier. Low readings of RC-head modifiers are robustly available in TdVZ, which may initially seem to indicate that this language allows head-raising. We argue, however, that the relevant data from TdVZ are equally compatible with a non-head-raising analysis, and that such an analysis allows us to make much better sense of **all** the facts of TdVZ relativization. We begin by considering the behavior in RC-heads of the ordinal *primer* 'first', and then proceed to examine that of *-zi* 'only'.

4.2.1   Low Readings of *Primer* 'First'

Consider the following example:

(36)   [Context: Juan said that Marie wrote the book *Dbaalih* [*The Stars*]. Then he said, "She also wrote the book *Dmàín* [*Animals*], and that's the first book she wrote."]

Dmàín naa primer libr ni guni Juan bakaa Marie.

D-màín	naa	**primer**	libr	ni	**gu-ni**	Juan	ba-kaa	Marie.
PL-animal	COP	first	book	REL	COMPL-say	Juan	COMPL-write	Marie

'*The Animals* is the first book Juan said Marie wrote.' $\boxed{said \gg first}$

On a surface scope reading (*first ≫ said*), (36) would be false, because *The Animals* was not the **first** book about which Juan **said** that Marie had written it. On an inverse scope reading (*said ≫ first*), however, (36) would be true, because Juan did **say** at one point that *The Animals* was the **first** book Marie had written. The fact that (36) is felicitous in the context given indicates that *primer* 'first' in this sentence can be interpreted low, within the scope of the RC-internal verb *guni* 'said'.

Two more examples of low readings of *primer* 'first' follow. In (37) and (38), we see that an instance of *primer* 'first' in an RC-head can be interpreted within the scope of an RC-internal *bain desidir* 'decided' or *baziru'an* 'admitted'.[6]

(37)   [Context: Sofie decided to drink some coffee. Then she decided to drink some hibiscus tea first.]

Jamaik naa primer bebiid ni bain desidir Sofie ge'en.

Jamaik	naa	**primer**	bebiid	ni	ba-in	**desidir**	Sofie	g-e'e-n.
hibiscus.tea	COP	first	drink	REL	COMPL-do	decide	Sofie	IRR-drink-3H

semilit. '#Hibiscus tea is the first drink that Sofie decided to drink.'

   id.   'Hibiscus tea is the drink that Sofie decided to [drink first].' $\boxed{decide \gg first}$

(38)   [Context: Juain admitted that he had made a mistake when painting the house. Then he admitted that he had made another mistake when fixing the car, and he said that he had done that first.]

Erroor ni bain Juain kamion naa primer erroor ni baziru'an banian.

---

[6]Interestingly, the English counterparts of both these verbs block the low reading for *first* (Heycock 2005).

Erroor	ni	ba-in	Juain	kamion	naa	**primer**	erroor	ni
mistake	REL	COMPL-make	Juain	car	COP	first	mistake	REL

ba-ziru'-an	ba-ni-an.
COMPL-admit-3H	COMPL-make-3H

semilit. 'The mistake that Juain made to the car is the first mistake that he admitted
  that he made.'

id.   'The mistake that Juain made when fixing the car is the mistake that he
  admitted [he had made first].' $\boxed{admit \gg first}$

The robust availability of low readings for *primer* 'first' initially appears to pose a considerable challenge to our head-external analysis of TdVZ relatives. But appearances can be deceiving. Consider the following relativization structure in English:

(39)   the second mammal that we know emerged from the water (Heycock 2005:379, (77))

This phrase does not have a classical Bhatt-style low reading, with *second* interpreted within the scope of *know*. That is, it cannot be paraphrased as follows:[7]

(40)   the x (*or:* the mammal) such that we **know** that it was the **second** mammal to emerge from the water

But although straightforward reconstruction of the RC-head into its base position does not give the right reading for (39), its most salient reading is nonetheless one on which the scale associated with the ordinal *second* is a timeline of **emergences**, not states of **knowing**:

> [I]n a scenario where there are 3 mammals, A, B, and C, about which we are sure that A and B emerged from the water, and in that order, while we do not know whether or not C emerged from the water at all, B can accurately be described by [(39)].
> Heycock (2005:380)

This shows that, in English, the scale associated with an ordinal in an RC-head can be constructed with the help of RC-internal material without reconstruction of the head into the relative clause. Therefore, low readings of ordinals in English RC-heads do not necessarily tell us anything about whether said RC-heads arrived at their surface position by head-raising.

It turns out that Heycock's "mammal" observation can be replicated in TdVZ:

(41)   [Context: We're talking about the development of three species of animals: A, B, and C. We know that at some point a long time ago, A emerged from the water, and we know that B emerged from the water at some point after that. As for C, we have no idea if it emerged from the water, let alone when, if it did. For all we know, it could have emerged from the water before A, or between A and B, or after B, or not at all.]

B naa rarup màín ni nanoon zaa lo nis.

---

[7]This is because, in English, factive predicates like *know* block low readings of Bhatt-type RC-head modifiers
 generally (Heycock 2005).

B naa **rarup** màín ni **na-n-oon** zaa lo nis.
B COP second animal REL NEUT-know-1.PL NEUT.come P$_{\text{LOC}}$ water
'B is the second animal we know came from the water.'[8]

The felicity of (41) in the context given shows that, in TdVZ too, the scale associated with an ordinal in an RC-head can be built using RC-internal material without reconstruction of the head into the relative clause.[9] Therefore, TdVZ is like English here: low readings of ordinals modifying RC-heads do not necessarily indicate that head-raising has occurred.

4.2.2 Low Readings of *-zi* 'Only'

Low readings are also robustly available for another modifier of RC-heads: the clitic *-zi* 'only'. An example of this is shown in (42).

(42)   [Context: Mart said, "Felip saw the movie *Dbel* [*The Snakes*]. Oh wait, no—the only movie he saw was *Dbedund* [*The Hummingbirds*]."]

Dbedund naa teezi pelikuh ni guni Mart bayee Felip.

D-bedund naa tee-**zi** pelikuh ni **gu-ni** Mart ba-yee Felip.
PL-hummingbird COP one-only movie REL COMPL-say Mart COMPL-see Felip

'*The Hummingbirds* is the only movie Mart said Felip saw.' $\boxed{said \gg only}$

This sentence would be false on a high reading of *-zi* (*only* $\gg$ *said*), because *The Hummingbirds* was not the **only** movie about which Mart **said** that Felip had seen it. But it would be true on a low reading of *-zi*, since Mart did **say** at one point that Felip had seen **only** *The Hummingbirds*. The felicity of (42) in the context given shows that an instance of *-zi* in an RC-head can be interpreted low, within the scope of an RC-internal predicate (here *guni* 'said').

Like *primer* 'first', *-zi* 'only', when in an RC-head, can be interpreted within the scope of an RC-internal *bain desidir* 'decided' ((43-44)).[10]

(43)   [Context: Marie decided to eat a banana. Then she changed her mind and decided to eat only an apple.]

Mansan naa teezi frut ni bain desidir Marie gaguan.

Mansan naa tee-**zi** frut ni ba-in **desidir** Marie g-agu-an.
apple COP one-only fruit REL COMPL-do decide Marie IRR-eat-3H

---

[8]The name of the letter B is pronounced *be* [be] in TdVZ.

[9]This suggests that the scales associated with ordinals in TdVZ may be constructed largely on the basis of what properties are most contextually salient. If this is so, *rarup* 'second' in (41) may have the (type $\langle$e,t$\rangle$) denotation in (1) and be interpreted in situ.

(1) $\llbracket$**rarup**$\rrbracket = \lambda x \, . \, \exists! y \, [y <_s x]$
where $<_s =$ 'precedes (on some contextually salient scale s)'

[10]TdVZ differs from English here: in English, *decide* blocks low readings of Bhatt-type modifiers (Heycock 2005).

semilit. '#The apple is the only fruit that Marie decided to eat.' $\boxed{decided \gg only}$

id.   'The apple is the fruit such that Marie decided to eat only it.'

(44)   [Context: Beniit decided to buy a coat. Then he changed his mind and decided to buy only a shirt.]

Kamset naa teezi laadih ni bain desidir Beniit sien. $\boxed{decided \gg only}$

Kamset	naa	tee-**zi**	laadih	ni	ba-in	**desidir**	Beniit	∅-si-en.
shirt	COP	one-only	cloth.garment	REL	COMPL-do	decide	Beniit	IRR-buy-3H

semilit. '#The shirt is the only article of clothing that Beniit decided to buy.'

id.   'The shirt is the article of clothing such that Beniit decided to buy only it.'

The fact that a *-zi* 'only' in an RC-head can be interpreted below an RC-internal predicate seems to pose another challenge to our head-external analysis of TdVZ relatives, on which an RC-head never raises from within its relative clause. However, this property of *-zi* does not in fact **force** the conclusion that TdVZ relatives can be derived by head-raising after all. Whenever an instance of inverse scope is discovered (i.e., a situation in which A asymmetrically c-commands B in surface syntax, but is interpreted semantically as falling within the scope of B), there are in principle two broad kinds of analyses one can give for it (see Fox 1999, Fox & Nissenbaum 2004 for discussion):

(45)   a.   **Syntactic reconstruction:** Inverse scope is available because A, although it c-commands B on the surface, has moved from a position below B, and can be interpreted in this lower position at LF.

       b.   **Semantic reconstruction:** Inverse scope is available not because A has moved from below B, but because some element has a denotation whose effect is to place the denotation of A within the scope of B in the process of semantic composition.

A priori, these two approaches seem equally reasonable. But adopting a syntactic reconstruction analysis of low readings of *-zi* 'only'—which would require positing head-raising in TdVZ—would make it very difficult to understand the reciprocal binding and bound variable anaphora facts laid out in §3, which suggest that TdVZ relatives lack the head-raising derivation. This tells in favor of a semantic reconstruction analysis of low readings of *-zi*. Our proposal can be illustrated using the relativization structure in (42), repeated here:

(46)   *Dbedund* naa teezi pelikuh ni guni Mart bayee Felip.

D-bedund	naa	**tee-zi**	**pelikuh**	**ni**	**gu-ni**	**Mart**	**ba-yee**	**Felip**.
PL-hummingbird	COP	one-only	movie	REL	COMPL-say	Mart	COMPL-see	Felip

'*The Hummingbirds* is the only movie Mart said Felip saw.' $\boxed{said \gg only}$

On our analysis, the phrase boldfaced in (46) has the following syntactic structure:[11]

---

[11]We posit that *-zi* 'only' is generated as an adjunct to the NP head because it needs to be able to access the denotation of this head. If this analysis of the underlying syntax of *-zi* 'only' is correct, then the fact that the clitic is pronounced immediately after *te* 'one' in (42-44) must be due to a morphophonological clitic placement rule.

(47)

```
                    DP
              ┌──────┴──────┐
              D            NumP
            Ø_the      ┌────┴────────┐
                   NumeralP          NP
                      te       ┌──────┴──────────┐
                     one      NP                 CP
                          ┌────┴────┐      ┌──────┴──────────┐
                         Num        NP    Op₁ ni guni Mart bayee Felip t₁
                        [SG]    ┌────┴───┐    that Mart said Felip saw
                               NP        AP
                            pelikuh     -zi
                             movie      only
```
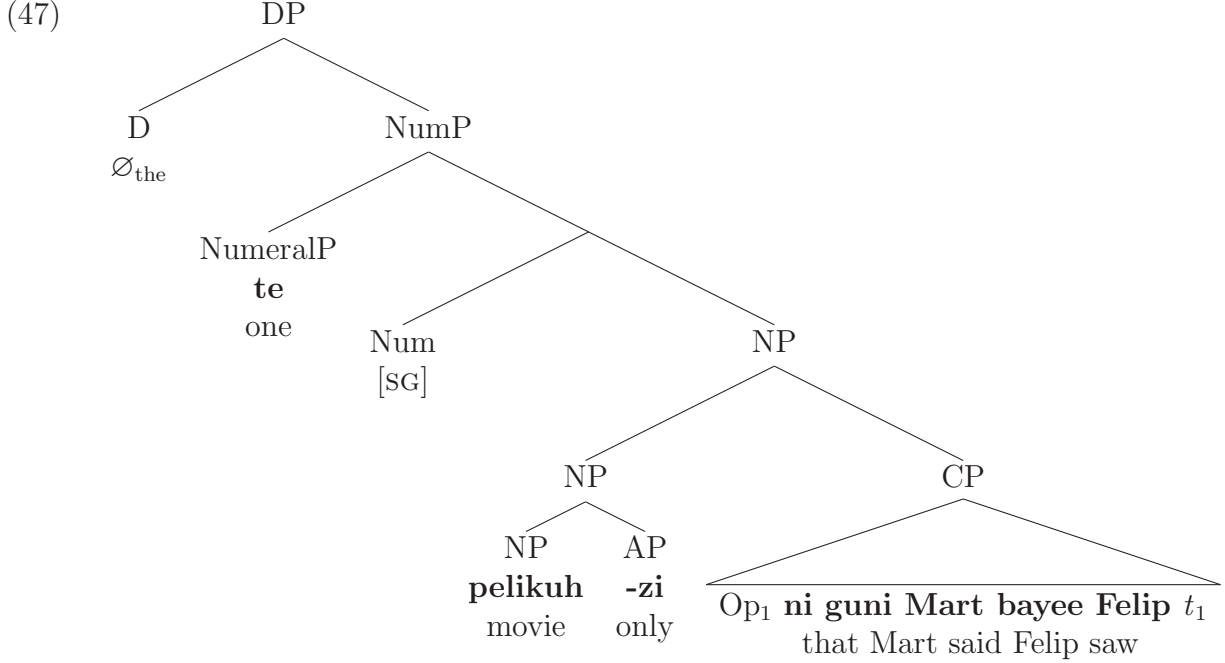
The denotation of *-zi* 'only' is the following:

(48) $\llbracket$ [$_{AP}$ **-zi**] $\rrbracket$ = $\lambda f_{e,st}$. $\lambda Q_{\langle\langle\langle e,st\rangle,st\rangle,st\rangle}$. λz . λw . $f(z)(w) = 1 = Q(\lambda g_{e,st}$. $\lambda w''$. $g(z)(w'')$ and $\neg\exists v$ [$v \neq z$ and $f(v)(w'') = g(v)(w'') = 1$])(w)

This yields the denotation in (49) for the underlying NP <u>pelikuh -zi **Op₁** ni Mart guni t_1 C Felip bayee t_1</u> 'only movie that Mart said Felip saw' (see the Appendix for details).

(49) $\llbracket$ [$_{NP}$ **pelikuh -zi Op₁ ni Mart guni t_1 C Felip bayee t_1**] $\rrbracket$ =
λz . λw . z is a movie in w and Mart said something in w and $\forall w'$: w' is compatible with what Mart said in w [Felip saw z in w' and $\neg\exists v$ [$v \neq z$ and v is a movie in w' and Felip saw v in w']]

Adopting this semantic reconstruction analysis allows us to understand the low readings of *-zi* 'only' we have seen without becoming unable to account for the reciprocal binding and bound variable anaphora facts presented in §3.

5   A Head-External Analysis of TdVZ Relatives

Having surveyed the empirical landscape, we can now proceed to our analysis of the structure and derivation of relative clauses in TdVZ. We do not yet have evidence bearing on whether TdVZ has only head-external relatives, only matching relatives, or both; but we contend that TdVZ relatives are never derived by head-raising. Here, we will implement our analysis using a traditional head-external derivation, with operator movement inside the relative clause.
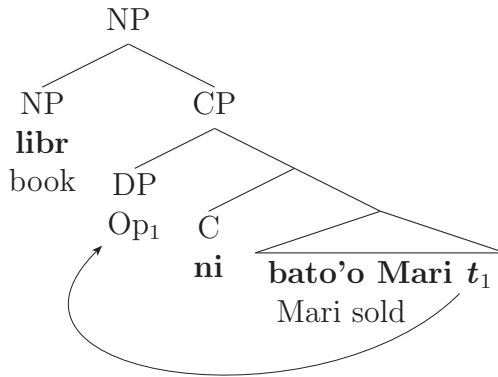
5.1   The Basics

On our analysis, the simple relativization structure in (50) has the derivation shown in (51).

(50) *Direct object relativization* (= (5))

libr ni bato'o Mari

libr ni   ba-to'o   Mari
book REL COMPL-sell Mari

'the book that Mari sold'

(51)

In this derivation, a null relative operator—a silent counterpart of relative pronouns such as English *which*—is base-generated in the "core" of the clause. It then internally merges with the C-projection *ni bato'o Mari t_1* 'that Mari sold t_1' (or, in more traditional terms, moves to [Spec,CP]). The resulting CP adjoins to the head NP, which is never inside the CP at any point in the derivation. The structure in (51) can be semantically interpreted by the composition principles familiar from Heim and Kratzer (1998)—most importantly Predicate Abstraction (for the CP) and Predicate Modification (for the higher NP).

5.2 A Puzzle: Apparent RC-Internal "Stranding" of *Xten Sa'adan* 'of Each Other's'

With this much established, we can now proceed to consider a TdVZ-internal puzzle: why is it that the PP *xten sa'adan* 'of each other's' seems to be able to be "stranded" inside a relative clause? This possibility is shown in (17a-b) ((17a) is repeated below).

(52) *Apparent RC-internal "stranding" of the PP xten sa'adan 'of each other's'*

Nga'a naa dkamion ni bayee Els kun Beniit xten sa'adan nai.
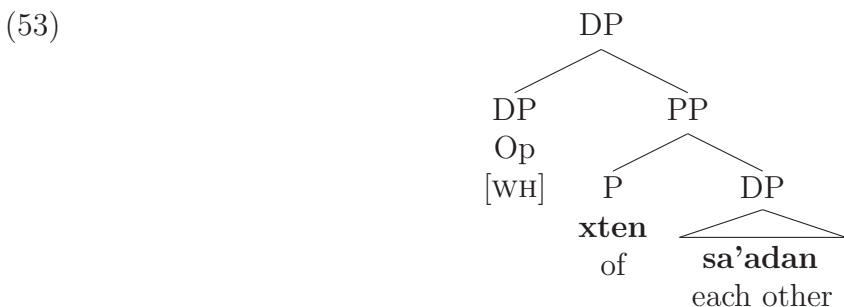
Nga'a naa d-kamion [CP ni   ba-yee   Els kun Beniit **xten sa'a-d-an**
blue   COP PL-car   REL COMPL-see Els with Beniit of   SA'A-PL-3H
nai].
yesterday

'The cars of each other's that Els and Beniit saw yesterday are blue.'

Intuitively, *xten sa'adan* 'of each other's' in (52) seems to be modifying the NP head *kamion* 'car'. This apparent "split constituency" would be relatively straightforward to understand if the NP head could raise out of the relative clause, stranding the PP inside the relative clause. But we have argued that in fact the NP head **never** raises out of the relative clause in TdVZ. What, then, should we make of *xten sa'adan*–stranding?

We propose that, in sentences like (52), *xten sa'adan* 'of each other's' is an adjunct not to the NP head (which is never inside the relative clause at any point) but rather to its "proxy" inside the relative clause, the null operator, as shown in (53).[12]

(53)

```
                        DP
                    ____|____
                   /         \
                  DP          PP
                  Op        ___|___
                 [WH]      /       \
                          P         DP
                        xten      ____
                         of      sa'adan
                              each other
```

In the derivation of (52), the DP in (53) is merged as the direct object of the verb *bayee* 'saw', and further structure building produces the following subtree:

(54)

```
              _____|_____
             /                                \
            C                                   \
           ni                                    \
      ⎡ uWH  ⎤          _____
      ⎢ EPP  ⎥         bayee Els kun Beniit [DP Op xten sa'adan] nai
      ⎣ that ⎦         Els and Beniit saw [DP Op of each other's] yesterday
```
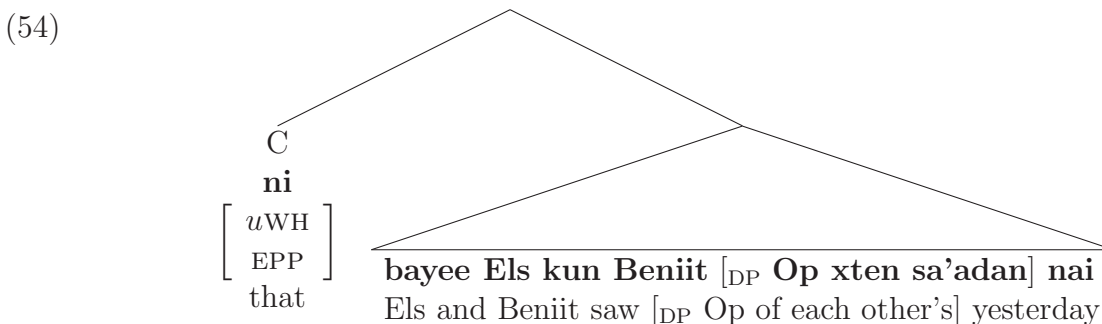
The relative complementizer *ni* inherently bears an unvalued WH-feature. It therefore probes its c-command domain for a goal bearing a valued WH-feature, finds one, and enters into an Agree relation with it (Chomsky 2000, 2001), thereby valuing its own [uWH] feature. *Ni* also inherently bears an EPP feature, which is satisfied by internally merging the goal of Agree with the root of the tree (i.e., moving it to [Spec,CP]).

However, there is a problem. What exactly is the goal that *ni* finds and agrees with in a derivation like the one snapshotted in (54)? If it is the null operator, then we apparently have exactly what we want:

---

[12]One might consider the alternative possibility that *xten sa'adan* 'of each other's' in sentences like (52) is an adjunct to some verbal or clausal projection (e.g., VP or *v*P), perhaps with an interpretation like 'in such a way as for each to affect the other'. But two types of evidence tell against such an analysis. First, *xten sa'adan* cannot be coordinated with clear verbal modifiers ((1)). Secondly, *xten sa'adan* cannot follow a pronominal direct object. This is unsurprising if it is an adnominal modifier, but would be unexpected if it were an adjunct to a clausal projection.

(1) *Gule'en kun zhape'en kua'a dguzhar nageelihte chikru xten sa'adan.

    *Gule'en kun zhape'en ku-a'a   d-guzhar **na-geelih-te chikru xten sa'a-d-an**.
    boy   and girl   COMPL-take PL-spoon ADJ-fast-EMPH and   of   SA'A-PL-3H
    lit. '*The boys and the girls took the spoons really fast and of each other's.'

    [Equally unacceptable with the boldfaced conjuncts reversed. Either conjunct *alone* is fine in this linear position.]

(55)   [CP Op_i ni_[u̶W̶H̶, E̶P̶P̶] [bayee Els kun Beniit [DP t_i xten sa'adan]   nai]]
       Op_i REL   saw   Els and Beniit   t_i of   each.other yesterday

But if [PP *xten sa'adan*] 'of each other's' is **adjoined** to the null operator ((53)), the WH-feature on the lower segment of the DP will project to its higher segment ((56)), on the standard assumption that all the segments of a single category have identical featural content.

(56)

DP
[WH]
├─ DP
│ Op
│ [WH]
└─ PP
   ├─ P
   │ **xten**
   │ of
   └─ DP
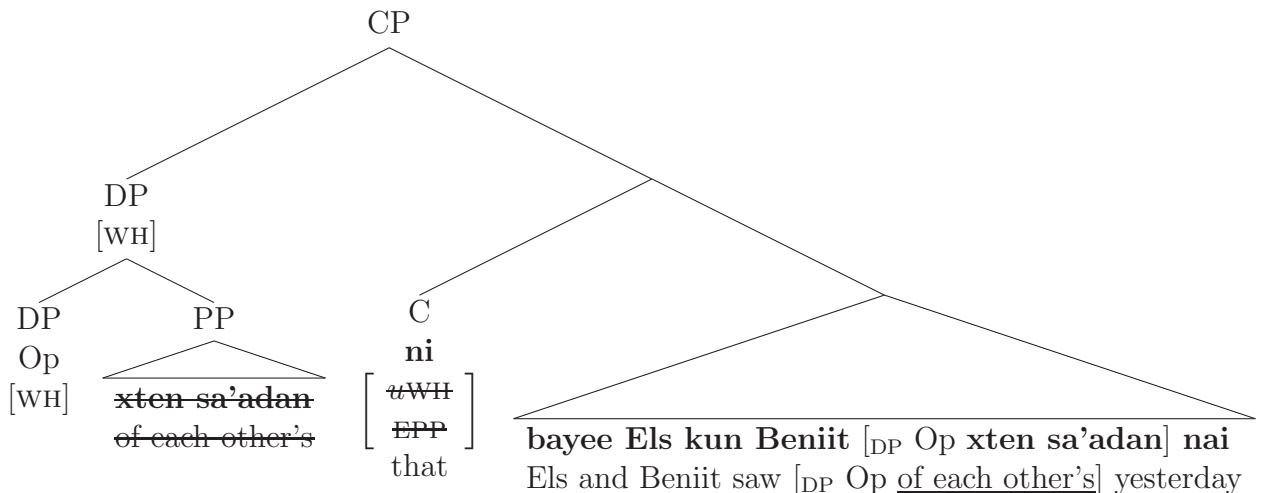   **sa'adan**
      each other
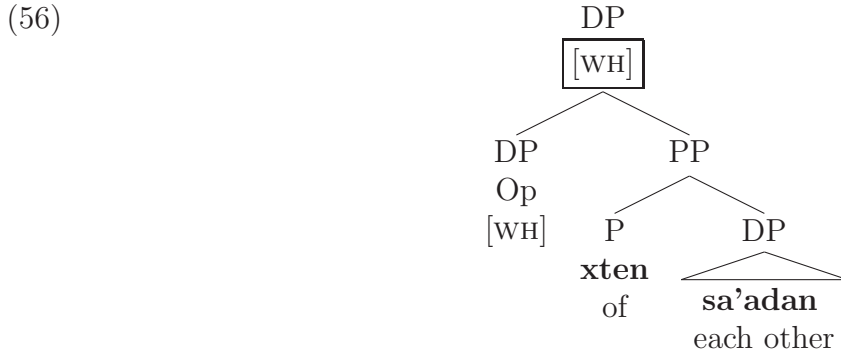
Therefore, the Agree search conducted by the complementizer *ni* in a derivation like (55) should find the **maximal** DP in (56), and this entire constituent should be attracted to [Spec,CP]—or, at the very least, this should be possible. Why, then, is *xten sa'adan* pronounced in its base position in sentences like (52)?

A clue comes from the fact that, apparently, overt material can **never** be pronounced in the specifier of the relative complementizer *ni*. We can explain this fact by making the following two independently motivated assumptions:

(57)   a. TdVZ has a **Doubly-Filled Comp Filter**.
       b. TdVZ has no silent relative complementizer.

These properties of TdVZ make it impossible to spell out the WH-DP [DP Op *xten sa'adan*] in [Spec,CP], forcing an unconventional spellout option: pronunciation of the lower copy of *xten sa'adan*, shown in (58).

(58)   *Low pronunciation of PP adjoined to Op*

CP
├─ DP
│ [WH]
│ ├─ DP
│ │ Op
│ │ [WH]
│ └─ PP
│   ~~xten sa'adan~~
│   ~~of each other's~~
└─
   ├─ C
   │ **ni**
   │ [u̶W̶H̶]
   │ [E̶P̶P̶]
   │ that
   └─ **bayee Els kun Beniit** [DP **Op xten sa'adan**] **nai**
      Els and Beniit saw [DP Op of each other's] yesterday

238

This analysis of *xten sa'adan* 'of each other's'–stranding makes at least two predictions. The first of these is the following:

(59) *Prediction A*
      TdVZ relative clauses should not allow pied-piping of an overt preposition to [Spec,CP].

This prediction is borne out. In (60a), the nominal phrase *te bangu* serves as the object of the preposition *lo* 'on'. When this nominal is relativized out, *lo* 'on' can appear in situ with a resumptive pronoun ((60b)), or it can fail to be realized overtly ((60c)), but it cannot be pied-piped to the left periphery of the relative clause ((60d)).

(60) a. Sofie zuban lo te bangu.
         Sofie zub-an   **lo** te bangu.
         Sofie is.sitting-3H on a chair
         'Sofie is sitting on a chair.'

      b. bangu ni zub Sofie la'aguen
         bangu **ni**   zub   Sofie **la'agu-en**
         chair   REL is.sitting Sofie on/face-3INAN
         semilit. 'the chair that Sofie is sitting on it'
         id.   'the chair that Sofie is sitting on'

      c. bangu ni zub Sofie
         bangu **ni**   zub   Sofie
         chair   REL is.sitting Sofie
         semilit. 'the chair that Sofie is sitting'
         id.   'the chair that Sofie is sitting on'

      d. bangu ⟨***lo⟩ ni   ⟨***lo**⟩ zub   Sofie
         chair   ⟨*on⟩ REL ⟨*on⟩ is.sitting Sofie
         'the chair that Sofie is sitting on'

A second prediction of our analysis of *xten sa'adan* 'of each other's'–stranding is the following:

(61) *Prediction B*
      Locative and temporal relatives should not begin with a sequence "X *ni*," with X an overt locative or temporal (*wh-*)adverbial.

This prediction too is correct. The locative and temporal relativizers *kud* 'where' and *chi* 'when' cannot cooccur with the relative complementizer *ni*, as shown in (62) and (63), respectively.

(62) Rizhulaaza ye'e ⟨*ni⟩ kud ⟨*ni⟩ guzi Mart yexih.
      Ri-zhulaaz-a   ye'e   ⟨***ni**⟩ <u>kud</u>   ⟨***ni**⟩ gu-zi   Mart yexih.
      HAB-like-1.SG market ⟨*REL⟩ where ⟨*REL⟩ COMPL-buy Mart avocado
      'I like the market where Mart bought avocados.'

(63) zhman ⟨*ni⟩ chi ⟨*ni⟩ bazub Juan te yu'u

   zhman ⟨*__ni__⟩ <u>chi</u>   ⟨*__ni__⟩ ba-zub   Juan te yu'u
   week   ⟨*REL⟩ when ⟨*REL⟩ COMPL-build Juan a house
   'the week when Juan built a house'

On our analysis, *kud* 'where' and *chi* 'when' cannot be in the highest [Spec,CP] in the relative clauses they introduce. If they were, they would have to be cooccurring with a null relative complementizer, but we have argued that TdVZ has no such lexical item ((57b)). Therefore, we analyze *kud* 'where' and *chi* 'when' as relative complementizers in their own right, occupying the C position rather than [Spec,CP].

6   Conclusion

We have argued that relative clauses in Teotitlán del Valle Zapotec do not have a head-raising derivation available to them. The evidence for this non-head-raising analysis comes from the failure of reciprocals and would-be bound variables in RC-heads to display binding connectivity. The non-connectivity effects observed would be unexpected if RC-heads could raise from inside their relative clauses in TdVZ.

In TdVZ, a reciprocal in an RC-head cannot take as its antecedent an RC-internal nominal phrase, even though TdVZ reciprocals reconstruct for binding under Ā-movement generally. On our analysis, this is because the head of a TdVZ relative clause is never inside the relative clause at any stage of the derivation.

Analogously, a would-be bound variable inside a TdVZ RC-head cannot be interpreted as bound by an RC-internal quantifier. This too is explained if the head is not RC-internal at any point (on the reasonable assumption that the quantifier cannot covertly QR out of the relative clause and bind the would-be bound variable in its surface position).

Two strands of evidence initially seemed to suggest that TdVZ relatives could be formed by head-raising after all. If this conclusion were forced, then it would be very difficult to understand the binding non-connectivity effects just discussed. However, the conclusion that TdVZ allows head-raising is not forced: the evidence that appears to suggest this (which involves idiom chunk relativization and "low" readings of RC-head modifiers) turns out on closer examination to be fully compatible with a non-head-raising analysis.

Finally, the curious phenomenon of "stranding" of *xten sa'adan* 'of each other's' inside certain relative clauses comes about when this PP is adjoined to the null relative operator. The resulting adjunction structure, a WH-DP, is attracted to [Spec,CP] but spelled out in its base position owing to the Doubly-Filled Comp Filter, which can be shown on independent grounds to be active in TdVZ.

The facts of TdVZ relativization, then, provide strong support for the conclusion that externally headed relative clauses are a cross-linguistically heterogeneous category. Garden-variety relative clauses in Teotitlán del Valle Zapotec and English look quite similar on the surface, but have very different derivational histories.

Works Cited

ÅFARLI, TOR A. 1994. A promotion analysis of restrictive relative clauses. *The Linguistic Review*, 11, pp. 87–100.

BHATT, RAJESH. 2002. The Raising Analysis of Relative Clauses: Evidence from Adjectival Modification. *Natural Language Semantics* 10:43–90.

BIANCHI, VALENTINA. 1999. *Consequences of Antisymmetry: Headed Relative Clauses.* Mouton de Gruyter.

BRAME, MICHAEL K. 1968. A New Analysis of the Relative Clause: Evidence for an Interpretive Theory. Unpublished manuscript, MIT.

CHOMSKY, NOAM. 1965. *Aspects of the Theory of Syntax.* Cambridge, MA: MIT Press.

CHOMSKY, NOAM. 1973. Conditions on transformations. In Anderson, Stephen R. & Paul Kiparsky (eds.), *A Festschrift for Morris Halle*, pp. 232–296. New York: Holt, Rinehart, and Winston.

CHOMSKY, NOAM. 1977. On *wh*-movement. In Culicover, Peter, Thomas Wasow, & Adrian Akmajian (eds.), *Formal Syntax*, pp. 71–132. New York: Academic Press.

CHOMSKY, NOAM. 1981. *Lectures on Government and Binding: The Pisa Lectures.* 7th edition (1993). Berlin: Mouton de Gruyter.

CHOMSKY, NOAM. 1986. *Knowledge of Language: Its Nature, Origins, and Use.* New York, NY: Praeger Publishers.

CHOMSKY, NOAM. 2000. Minimalist Inquiries: The Framework. In Roger Martin, David Michaels, & Juan Uriagereka (eds.), *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik*, pp. 89–153. Cambridge, MA: MIT Press.

CHOMSKY, NOAM. 2001. Derivation by Phase. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, pp. 1–52. Cambridge, MA: MIT Press.

FOX, DANNY. 1999. Reconstruction, Binding Theory, and the Interpretation of Chains. *Linguistic Inquiry*, Vol. 30, No. 2, pp. 157–196.

FOX, DANNY and JON NISSENBAUM. 2004. Condition A and Scope Reconstruction. *Linguistic Inquiry*, Vol. 35, No. 3, pp. 475–485.

GUTIÉRREZ LORENZO, AMBROCIO. 2014. *Construcciones de Verbos Seriales en el Zapoteco de Teotitlán del Valle.* Masters thesis, Centro de Investigaciones y Estudios Superiores en Antropología Social.

HEIM, IRENE and ANGELIKA KRATZER. 1998. *Semantics in Generative Grammar.* Blackwell Publishing.

HEYCOCK, CAROLINE. 2005. On the interaction of adjectival modifiers and relative clauses. *Natural Language Semantics* 13:359–382.

KAYNE, RICHARD S. 1994. *The Antisymmetry of Syntax.* Cambridge, MA: MIT Press.

KRATZER, ANGELIKA. 1996. Severing the External Argument from its Verb. In Rooryck, J. & Laurie Zaring (eds.) *Phrase Structure and the Lexicon. Studies in Natural Language and Linguistic Theory*, Vol. 33, pp. 109–137.

LEES, ROBERT B. 1960. *The Grammar of English Nominalizations.* The Hague: Mouton.

LEES, ROBERT B. 1961. The Constituent Structure of Noun Phrases. *American Speech* 36, pp. 159–168.

LILLEHAUGEN, BROOK DANIELLE, JANET CHÁVEZ SANTIAGO, AMBROCIO GUTIÉRREZ, BIBIANA GUTIÉRREZ, NICK KALIVODA, ALEX MANNIX, TERESA MARTÍNEZ

Chavez with Troi Carleton, Helen Felker, and Rachel Elizabeth Weissler. 2015. *Teotitlán del Valle Zapotec Talking Dictionary*, version 1.0. Living Tongues Institute for Endangered Languages. http://www.talkingdictionary.org/teotitlan

Moulton, Keir. 2013. What covaries in backward variable binding. In Keine, Stefan & Shayne Sloggett (eds.), *Proceedings of the Forty-Second Annual Meeting of the North East Linguistics Society*, Vol. 2, pp. 55–68. Amherst, MA.

Nee, Julia. 2012. *Spanish/Zapotec code-switching and the theory of ellipsis.* B.A. thesis, University of Chicago.

Sauerland, Uli. 1998. *The Meaning of Chains.* Ph.D. thesis, MIT.

Sauerland, Uli. 2003. Unpronounced heads in relative clauses. In K. Schwabe & S. Winkler (eds.), *The Interfaces: Deriving and Interpreting Omitted Structures*, pp. 205–226. Amsterdam, John Benjamins.

Schachter, Paul. 1973. Focus and Relativization. *Language*, Vol. 49, No. 1, pp. 19–46.

Appendix: A Sketch of Our Semantic Reconstruction Analysis of Low Readings of *-zi* 'Only'

(64)   *Structure of the postcopular nominal in (42) (irrelevant projections omitted)*
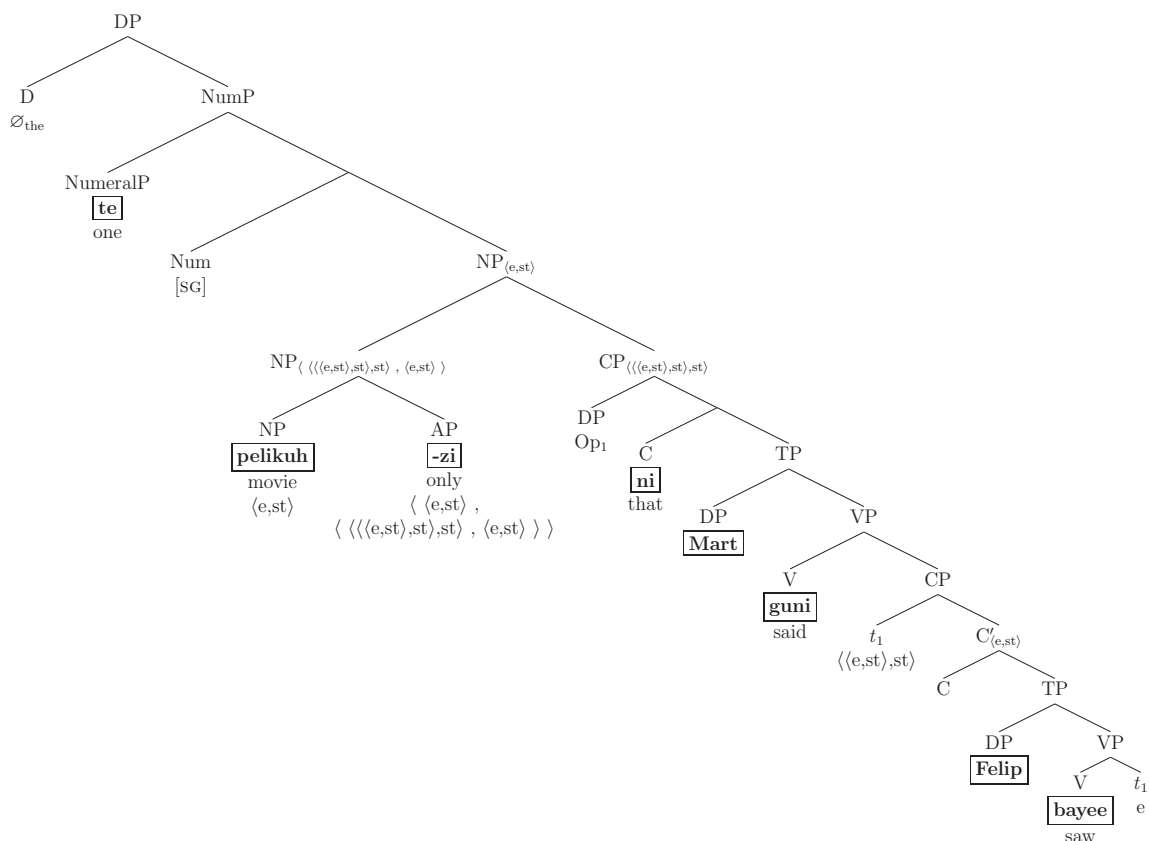
A sketch of the semantic composition yielding the denotation of the maximal NP in (64)

(65) *Workspace 1*

    a. $[\![\ [_{C'}$ **C Felip bayee** $t_1]\ ]\!] = \lambda x\ .\ \lambda w\ .$ Felip saw x in w

    b. $[\![\ [\textbf{guni}]\ ]\!] = \lambda p_{st}\ .\ \lambda x\ .\ \lambda w\ .$ x said something in w and $\forall w'$: w′ is compatible with what x said in w $[p(w') = 1]$

    c. $[\![\ [_{CP}\ \textbf{Op}_1\ \textbf{ni Mart guni}\ t_1\ \textbf{C Felip bayee}\ t_1]\ ]\!] = \lambda P_{\langle\langle e,st\rangle,st\rangle}\ .\ \lambda w\ .$ Mart said something in w and $\forall w'$: w′ is compatible with what Mart said in w $[P(\lambda x\ .\ \lambda w\ .$ Felip saw x in w)$(w') = 1]$

(66) *Workspace 2*

    a. $[\![\ [_{NP}\ \textbf{pelikuh}]\ ]\!] = \lambda y\ .\ \lambda w\ .$ y is a movie in w

    b. $[\![\ [_{AP}\ \textbf{-zi}]\ ]\!] = \lambda f_{e,st}\ .\ \lambda Q_{\langle\langle\langle e,st\rangle,st\rangle,st\rangle}\ .\ \lambda z\ .\ \lambda w\ .\ f(z)(w) = 1 = Q(\lambda g_{e,st}\ .\ \lambda w''\ .\ g(z)(w'')$ and $\neg\exists v\ [v \neq z$ and $f(v)(w'') = g(v)(w'') = 1])(w)$

    c. $[\![\ [_{NP}\ \textbf{pelikuh -zi}]\ ]\!] =$
    $\lambda Q_{\langle\langle\langle e,st\rangle,st\rangle,st\rangle}\ .\ \lambda z\ .\ \lambda w\ .$ z is a movie in w and $1 = Q(\lambda g_{e,st}\ .\ \lambda w''\ .\ g(z)(w'')$ and $\neg\exists v\ [v \neq z$ and v is a movie in w″ and $g(v)(w'') = 1])(w)$

    d. $[\![\ [_{NP}\ \textbf{pelikuh -zi Op}_1\ \textbf{ni Mart guni}\ t_1\ \textbf{C Felip bayee}\ t_1]\ ]\!] =$
    $\lambda z\ .\ \lambda w\ .$ z is a movie in w and Mart said something in w and $\forall w'$: w′ is compatible with what Mart said in w [Felip saw z in w′ and $\neg\exists v\ [v \neq z$ and v is a movie in w′ and Felip saw v in w′]]