Dissecting Clause-Chaining Constructions

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1 Introduction

1.1 The phenomenon

Clause-Chains (a.k.a Topic Chains, Medial Clauses, etc.) are long series of verbs and verb phrases with incomplete marking (*medial clauses*) followed by one fully specified verb which provides the missing categories. Only the final verb form may occur freely. Medial verbs are dependent on an independent form.

(1)   ra fisi-pie   fahare-râ   yâpeʔ-yopa-pie   mafa-yeŋiʔ
        go arrive-SEQ.3PL.DS rise-SEQ.SS chase.away-3PL.DO-SEQ.3PL.DS stuff-3PL.POSS
        behe-râ   wise-pie   fiuʔ   ro=fâre-mbiŋ.
        throw.away-SEQ.SS flee-SEQ.3PL.DS illicitly take=all-3PL.REM:PAST
        'When they$_i$ (the foreigners) arrived, they$_j$ (the villagers) got up and chased them away.
        They$_i$ threw away their stuff and fleed. Then, they$_j$ stole their stuff.'
                        Kâte (Trans-New-Guinea); Pilhofer (1933) (as cited in Bickel (2011))

In many languages in Southeast Asia, Papua New Guinea and Australia but also in other parts of the world, clause-chaining constructions are the common means of describing sequences of simultaneous or sequential events (cf. (1)). However, they may also undertake the function of all kinds of dependent clauses: Complement clauses, adverbial and relative clauses.

(2)   Functions of clause-chains in Fore (Scott 1978) :
    a.   na-ʔkib-éʔ-ka-na   i-i-e
         eat-FUT-3.PL.SUBJ-REF-3.SG.SUBJ talk-3.SG.SUBJ-DECL
         'He talks about how they will eat.'   *Complement Clause*
    b.   a-ka-ʔkib-iʔ-pa   máe-ʔki-i-e
         3.SG.OBJ-see-FUT-3.SG.SUBJ-TOP get-FUT-3.SG.SUBJ-DECL
         'If he sees it, he will get (it).'   *Adverbial Conditional Clause*
    c.   a-egu-ʔt-ó-ti   w-a:n-ó
         3.SG.OBJ-hit-PAST-1.SG.SUBJ-ALL go-2.SG-SUBJ.Q
         'Are you going to where I hit him?'   *Headless Relative Clause*
    d.   mi-nt-i   ʔkuma:ʔ-ta-sa   kana-i-e
         be.at-REM.PAST-3.SG.SUBJ village-LOC-ABL come-3.SG.SUBJ-DECL
         'He came from the village in which he stayed'   *Headed Relative Clause*

However, in some languages, clause-chaining constructions are used only for a subset of these.

1.2 The puzzle

The immediate question that arises is whether clauses within a clause-chain are syntactically subordinate or coordinate. Both claims have been made in the theoretical literature (cf. section 3). And indeed the tradtional tests that distinguish subordinate and coordinate clauses achieve contradictory results (cf. section 2). With respect to some tests, these clauses are subordinate with respect to others, they are coordinate. How can this be derived?

1.3 The analysis in a nutshell

The seemingly contradictory properties of clause-chaining constructions can be derived if one makes the following assumptions:

- Clauses within a clause-chain are TPs headed by a defective T.

- These TPs are base-generated as subordinate clauses: Either as adjuncts to the vP or an NP or as complement clauses.

- Later in the derivation, they are moved to the specifier of a coordination phrase.

> ⇒ In a way, clauses within a clause-chain are indeed both: subordinate and coordinate. However, at different steps of the derivation.

Outline:
  - Section 2 discusses the syntactic properties of CCCs.
  - Section 3 briefly sketches previous approaches and their inadequacies.
  - Section 4 presents a new approach and shows how it derives the syntactic properties of CCs.
  - Section 5 shows how the analysis can be implemented recursively for multiple CCs.
  - Section 6 discusses an additional property of Amele, i.e. the scope paradox with CCCs.
  - Section 7 discusses some problems and concludes.

2 Syntactic Properties of Clause-Chaining Constructions:

2.1 Operator dependency:

Non-final (medial) verbs are marked for fewer categories than the final one. These often include person, relative tense (simultaneity vs. sequentiality) and switch-reference. All other categories such as absolute tense (sometimes also aspect, clause type and modal categories) are obtained from the final verb (cf. the future reading in (3)).

(3) kóbó   tl-ø-eb=ta   okok ken-omab-bio=be
     you.SG come-DS.SEQ-2.SG=MED work do.PERF-FUT-1PL=DECL
     'You'll come and we'll work'   *Mian:* Fedden (2007)

(4) kôt   [Hwajitxi=ra hwĩsôsôk to   nhy=nhy] [Ajuwelu=ra hrõn=ne mbra]
     HYP.FUT H=NOM   paper   with sit.DS   A=NOM   run.SS stay
     'H. could be writing and then A. could be running.'
                                           Kĩsêdjê (Je, Brazil), Rafael Nonato, p.c.

(5) tekekeʔe:k   šʔa:pa-ta ke-yaše-w
     in.that.bush hide-SR   1SG.O-watch-IMP
     'Hide in that bush and watch me'   Tonkawa, Hoijer (1949)

2.2 Extractability

Another general property of clause-chaining constructions is that one can extract elements from only one clause. This suggests a subordinate relation since extraction from one conjunct of a coordination is thought to violate the Coordinate Structure Constraint (Ross 1967).

(6) fofe-i-te   wame nen-tu-a-e
     come-3.PL-DS what 3.PL-give-3 see-3.SG=Q
     'They came and what did he give them?'   *Tauya:* McDonald (1990)

(7) Katah-oosh$_i$ John-at taloowa-na t$_i$ hilhah?
who-FOC:NOM John-NOM sing-DS t dance
'Who$_i$ did John$_j$ sing and t$_i$ dance?' (=Who danced while John was singing?')

Choctaw, Broadwell (1997:11)

(8) wâtâ=n ka ø-khajtu=nhy Canarana mã thẽ=n a-mã khu-py?
what=FACT 2 3.ABS-order=DS C. LOC go=SS 2.ACC-to 3.ACC-get
'What$_i$ is such that you ordered him, he went to Canarana and bought it$_i$ for you?'

Kĩsêdjê (Je, Brazil), Rafael Nonato (p.c.)

2.3 Extraposition

But unlike subordinate clauses, medial clauses have a fixed order with respect to the fully fledged verb. Subordinate clauses can usually appear to the left and the right of the matrix clause but medial clauses can only appear to the left.

(9) Amele (Roberts (1988))

   a. Ija ja hud-ig-en fi uqa sab man-igi-an
      1.SG fire open-1.SG-FUT if 3.SG food roast-3.SG-FUT
      'If I light the fire, she will cook the food.'
   b. Uqa sab man-igi-an ija ja hud-ig-en fi
      3.SG food roast-3.SG-FUT 1.SG fire open-1.SG-FUT if
      'She will cook the food if I light the fire.' *Adverbial Subordination*

(10) *Dana age qo-ig-a ho busale-ce-b
    man 3.SG hit-3.PL-TOD.P pig run.out-DS.3SG
    'The man killed it and the pig ran out.' *Clause-Chaining*

2.4 Embedding

Unlike subordinates and like coordinates, medial clauses cannot be embedded in the clause which contains the full fledged verb.

(11) Amele (Roberts (1988))

   a. Ho qo-qag-an nu dana ho-ig-a.
      pig hit-3.PL-FUT PURPOSE man 3.PL come-3.PL-TOD.P
   b. Dana age ho qo-qag-an nu ho-ig-a.
      man 3.PL pig hit-3.PL-FUT PURPOSE come-3.PL-TOD.P
      'The men came to kill the pig' *Adverbial Subordination*

(12) *Dana age ho busale-ce-b qo-ig-a
    man 3.PL pig run.out-DS.3SG hit-3PL-TOD.P
    'The pig ran out and the men killed it' *Clause-Chaining*

(13) *Dana age ho busale-i-a qa qo-ig-a
    man 3.PL pig run.out-3SG-TOD.P and hit-3PL-TOD.P
    'The pig ran out and the men killed it' *Coordination*

2.5 Cataphoric Pronouns

Just like coordinate clauses, clause-chains cannot contain a pronoun which bears the same index as a DP in the final clause. Subordinate clauses, however, can.

(14)   Amele (Papuan): Roberts (1988)

   a.   (*Uqa$_i$) bil-i-me-i   Fred$_i$ je-i-a.
        3.SG   sit-pred-3.SG-SS Fred   eat-3.SG-TOD.PAST
        *'He$_i$ sat and Fred$_i$ ate'   *Clause-Chaining*

   b.   (*Uqa$_i$) ho-i$_i$-a   qa Fred$_i$ sab qee je-l-ø.
        3.SG   come-3.SG-TOD.P but Fred food not eat-NEG.P-3.SG
        *'He$_i$ came but Fred$_i$ did not eat the food'   *Coordination*

   c.   (Uqa$_i$) sab j-igi$_i$-an   nu Fred$_i$ ho-i$_i$-a.
        3.SG   food eat-3.SG-FUT for Fred   come-3.SG-TOD.P
        'Fred came to eat food'   *Subordination*

2.6 Interim Summary

CCCs exhibit properties of coordinate and subordinate structures at the same time:

(15)   Summary of syntactic properties of clause-chaining constructions:

|	Subord	Coord
Operator dependency	√	
Wh-Extraction	√	
Cataphoric Pronouns		√
Embedding		√
Extraposition		√

Since most of these properties are usually assumed to follow automatically from the subordinate or coordinate status of clauses, it is not clear how a combination of these may be derived.

3 Previous analyses

Previous analyses of clause-chaining constructions treated them as either subordinate or coordinate structures and hence either the subordinative or the coordinative properties of this construction were neglected.

Finer (1984, 1985) and Broadwell (1997) analyze them as subordinated clauses implemented either as adjuncts (Finer) or as base-generated specifiers of a specifically designed TenseP (Broadwell). Apart from several technical problems, these approaches fall short of deriving the coordinative properties such as the ban on extraposition and embedding as well as the ban on cataphoric pronouns.

Keine (t.a.) and Nonato (2011) analyze clause-chaining constructions as coordinations of several vPs (or in Keine's case even VPs). The fact that the final verb receives different marking is attributed to the fact that the head-final T-head cliticizes to the final verb. Both approaches face problems when it comes to explaining asymmetries between the clauses that cannot be attributed to the relative order of clauses. And both approaches have no natural explanation why one may extract from one clause.
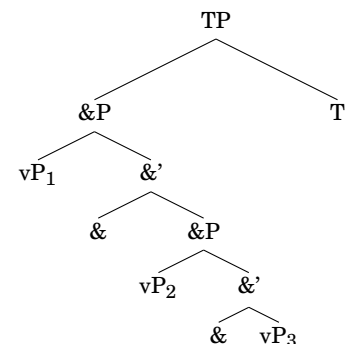
4 A derivational analysis of clause-chains

4.1 Background: What is the category of these clauses?

Hints:

- Medial verbs are always interpreted as having the same tense (in some languages also aspect, mood) as the final verb. The same also holds for clause type (illocutionary force)-features (cf. examples in (3)-(5)).

- In most languages, clause-chains are marked for relative tense, i.e. it is morphologically marked whether the event happened anterior or simultaniously to the anchor event marked by absolute tense.

- According to Rafael Nonato (p.c.), the compatibility with adverbs suggests that both, same subject- as well as different subject clauses are at least vPs.

> ⇒ Assumption: Medial clauses are TPs headed by a defective T-head which contains relative tense features but must receive absolute tense features from the final T-head.

4.2 The Proposal

Two Observations:

- Medial clauses may undertake all kinds of different functions of dependent clauses (cf. (2)). Hence, they must be base-generated in these positions, either as complement of V or as an adjunct to a noun phrase. If they do not function as a complement or relative clause, there are base-generated as an adjunct to the whole vP.

- Since surface-oriented tests like the fixed order of the clauses suggest that we are dealing with a coordination structure, we assume that these clauses are moved to the specifier of a coordination phrase which coordinates the medial clause with the matrix TP.

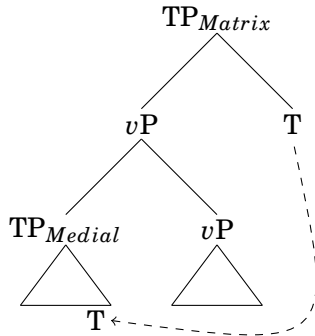(16) Movement of medial clauses to Spec&P via Spec$v$P
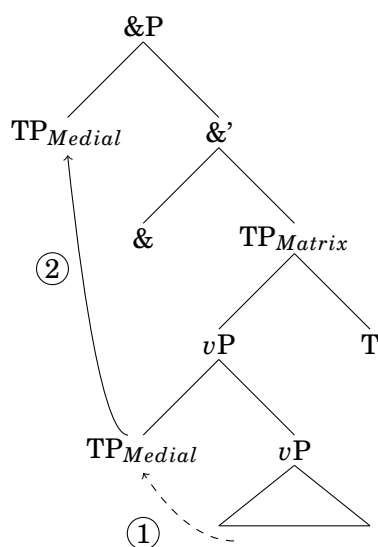
① Movement to Spec$v$P:
Applies only if TP$_{Medial}$ has not already been base-generated there.

② Movement to Spec&P:
Yields a coordinative surface structure

4.3 Deriving the syntactic properties of clause-chains:

1. **Operator Dependence:**
   Since vP is a phase, all medial clauses are in Spec$v$P at some point of the derivation. In that position, matrix T may value absolute tense features of the defective T-head via AGREE under c-command.

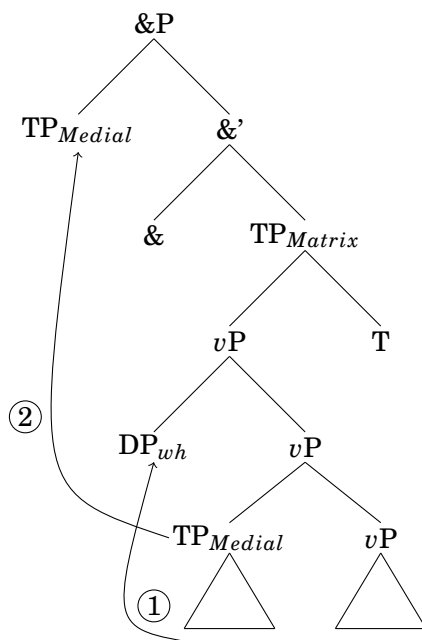   (17)　　AGREE relation which values tense features of T_{Medial}

```
                    TP_Matrix
                   /        \
                 vP           T
               /    \          ¦
         TP_Medial   vP        ¦
            /\       /\        ¦
           /  \     /  \       ¦
          T <-------------------
```

2. **Extraction and the non-violation of the CSC:**

   Coordinate Structure Constraint (CSC):
   Extraction out of a structure of the type: $[_{\&P}$ A $[_{\&'}$ & B] is forbidden (unless it affects the same element within both A and B).

   If we take the CSC to be a constraint on movement like above, the present theory allows that we may move out of the adjunct as long as it is still in its base position.

   (18)　　Extraction from a medial clause:

```
                &P
               /  \
        TP_Medial   &'
                   /  \
                  &    TP_Matrix
                      /     \
                    vP       T
                   /  \
             DP_wh      vP
                      /    \
                 TP_Medial   vP
                    /\       /\
```

   ① Movement of the wh-element out of the medial TP into the matrix clause.

   ② Movement of the medial TP to Spec&P, now establishing the structure which the CSC applies to (but now it's too late)

   This solves the problem why we can move out of medial clauses. But we still need to assure that we can move out of the matrix clause as well. I assume that this is possible only if the first conjunct is the result of MOVE (i.e. internal MERGE). The tree in (19) illustrates why:

(19)   Movement out of the matrix clause:

&P

TP$_{Medial}$ &'

        DP$_{wh}$ &'

            &   TP$_{Matrix}$
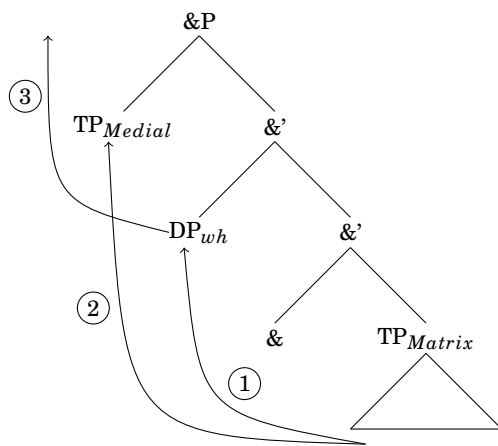
① = Movement of the wh-pronoun to Spec&P

② = Movement of TP$_{Medial}$ to Spec&P

③ = Further movement of wh-pronoun

⇒   None of these movement steps violates the CSC as formulated above

Side Note:
If one assumes the familiar "Merge over Move"-Principle (e.g. Chomsky (1995),(2000)), this assures that no extraction can take place if the first conjunct is the result of external Merge because in this case the order of the operations in ① and ② would have to be reversed. That would result in a violation of the CSC, which excludes the derivation in (19) for the usual cases of clausal coordination.

3. **Ban on Cataphoric Pronouns:**

    There is no theoretical explanation for why cataphoric pronouns are excluded from canonical coordination:

    (20)   *He$_j$ went to the bookstore and Sam$_j$ bought four novels.

    Usually the occurence of pronouns is banned only from clauses which have a possible binder within the same domain (*Sam$_j$ sees him$_j$). But in clausal coordination, they are also banned even though there is no c-commanding relationship involved.

    So if we assume that the principle which excludes the occurence of cataphoric pronouns in clausal coordination is a surface-oriented one (i.e. applies on a late or final state of the derivation), the exact same principle will exclude the occurence of cataphoric pronouns in clause-chaining constructions.

4. **Extraposition:**

    Since the specifier of the coordination phrase is obligatorily left of its complement, we derive the fixed order of clauses.

5. **Embedding:**

    Since clause-chaining languages do not show overt C-elements or movement to SpecCP (apart from wh-movement in some languages (cf. (6) vs. (7) and (8))), we find that medial clauses cannot be embedded in the matrix clause.

CP

&P   C
        |
        ∅

TP$_{Medial}$ &'

            TP$_{Matrix}$ &
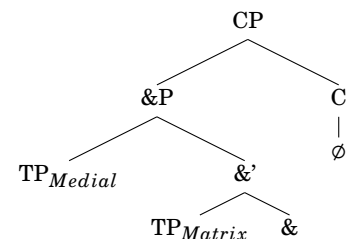
4.4 Further Evidence: Conditional Clauses in Amele

There is one type of clause in Amele which looks like a medial clause and does not exhibit coordinate properties, namely conditional clauses. Conditionals may be extraposed (cf. (21)) and embedded, however they have the same marking as typical medial clauses.
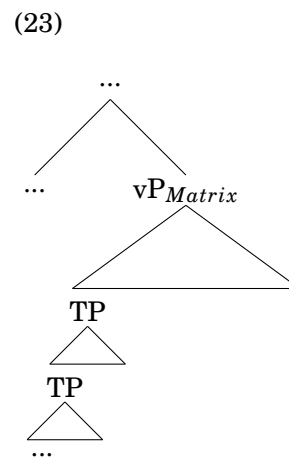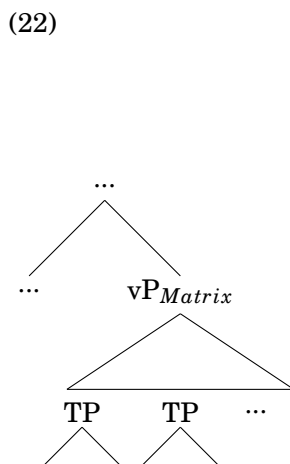
(21)   a.   Ho busale-ce-b   fi dana age qo-qag-an.
            pig run.out-DS.3 if man 3PL hit-3PL-FUT
            'If the pig runs out, the men will kill it'
       b.   Dana age qo-qag-an   ho busale-ce-b   fi
            man   3PL hit-3PL-FUT pig run.out-DS.3 if
            'The men will kill it if the pig runs out. '

> ⇒ This may be nicely derived if one assumes that conditional clauses in Amele must not be moved to Spec&P for some reason. Hence, they remain in Spec*v*P, which I argue to be the base-position of medial clauses (in Amele).

Observation: These data are also a major problem for the analyses by Keine (t.a) and Nonato (2011) who both assume that switch-reference marking is *"just rich coordination morphology"* (Nonato 2012)

5 Recursive implementation

- Since clause-chains often appear in large sequences of clauses, any theory must account for dependency relations between the respective clauses.

- The present approach in principle offers two possibilities to implement clause-chains in a recursive manner:

    - Either every medial clause is base-generated as an adjunct to the matrix clause and moved to the specifier of several stacked &Ps. (cf. the simplified tree in (22) and the concrete version in (24))

    - Or every medial clause is base-generated as an adjunct to the immediately following clause, regardless of whether it is another medial clause or the matrix clause. (cf. the simplified tree in (23) or the concrete version in (25))
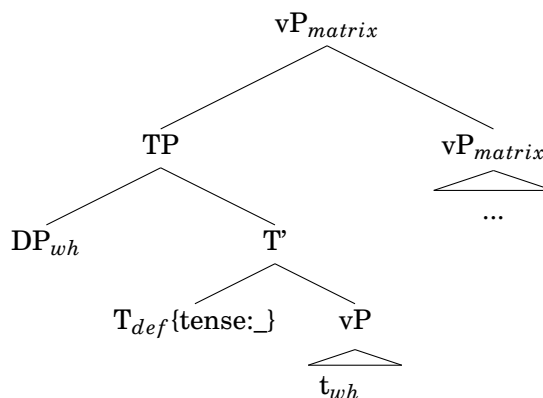
(22)

(23)

(24) (25)

&P

TP$_{Medial}$ &'

&   &P

TP$_{Medial}$ &'

&   TP$_{Matrix}$

vP   T

TP$_{Medial}$ vP

TP$_{Medial}$ vP

△

&P

&P   &'

&   TP$_{Matrix}$

vP   T

&P   vP

△

TP$_{Medial}$ &P

&   TP$_{Medial}$

vP   T

TP$_{Medial}$ vP

△

- In most cases, dependency facts signalled by switch-reference marking (cf. SR-marking in (1)) and scopal implications (e.g. for negativity in Amele, cf. section below) show that each clause is dependent on the immediately following one. This suggests the structure in (25).

- However, in principle, nothing precludes the version in (24) so one expects to find languages which show a different behaviour.

Observation: Maricopa (Yuman) (Gordon 1983) even seems to exhibit both techniques:

(26) a. 'ayuu   ny-rav-m ny-wik-m '-wikpat-k
          something 1-hurt-DS 1-help-DS 1-help-again-ASP
          'I helped him because he helped me when I was sick'   ≅ (24)

      b. 'ayuu   ny-rav-k   ny-wik-m '-wikpat-k
          something 1-hurt-SS 1-help-DS 1-help-again-ASP
          'When I was sick, I helped him because he helped me'   ≅ (25)

In (26-a), the first clause is subordinate to the second clause which itself is subordinate to the third (matrix) clause as can be seen from the fact that both clauses exhibit DS-marking which means that the respective marked clauses are the immediately following ones. In (26-b), the first and the second clause are both immediately subordinate to the matrix clause as can be seen from the fact that the first clause is marked for SS.

6 Problems:

6.1 Violation of the CED

The analysis above successfully avoids a violation of the Coordinate Structure Constraint by assuming that the respective extraction takes place before there is a coordination structure and as long as the medial clause is an adjunct. Here we are jumping right out of the frying pan into the fire. Extraction from an adjunct is usually constrained by the Condition on Extraction Domain which blocks movement out of an XP unless this XP is merged as a complement.

(27)

$$
\begin{array}{c}
\text{vP}_{matrix} \\
\diagup \qquad \diagdown \\
\text{TP} \qquad\qquad \text{vP}_{matrix} \\
\diagup\ \diagdown \qquad\qquad \triangle \\
\text{DP}_{wh} \qquad \text{T'} \qquad\quad \ldots \\
\qquad \diagup\ \diagdown \\
\text{T}_{def}\{\text{tense:\_}\} \quad \text{vP} \\
\qquad\qquad \triangle \\
\qquad\qquad \text{t}_{wh}
\end{array}
$$

Two possible solutions to this problem:

- Either one argues that the Condition on Extraction Domain does not hold in clause-chaining languages at all (a similar claim has already been made in Lasnik & Saito (1992), Takahashi (1994), Rackowski & Richards (2005) on Japanese and Stepanov (2007) for a number of languages; for further examples and discussion see Müller (2010))

- Or one argues why a violation of the CED is avoided in the case of extraction from clause-chains; maybe due to
  - a TP headed by a defective T has a different status than other adjuncts which are usually CPs or vPs.
  - a still active T_{medial} which has not yet received its tense feature.

6.2 Movement to Spec&P ?

Movement to the specifier of a coordination phrase has not (at least not to my knowledge) been proposed in the literature. However, syntactically there are no reasons to block this kind of movement. On the contrary, if coordination structure is indeed an asymmetric binary structure as Munn (1993) and others have argued, this might even be what we would expect from a syntactic point of view.

The question is whether the semantic component can handle this kind of asymmetric coordination where X is coordinated with a part of X. It might be a problem that one of the two conjuncts contains a trace and the other one does not because usually there is a constraint that coordination conjoins elements of the same sort (Law of the Coordination of Likes (LCL), Chomsky (1957), Williams (1978)) and the same semantic type.

One possible solution is to manipulate the semantic type of the coordinative head. Maybe the &-head could impose other restrictions on its arguments. A second possibility might be that movement of adjuncts may leave no trace at all.

7 The scope paradox with clause-chains in Amele

Another piece of evidence that we are dealing with a movement operation which shifts the scopal relations comes from Amele:

- On one hand, we have seen that all verbs within a clause-chain receive its tense features from the final one. This suggests that the final verb or at least the T-head of the final verb has scope over all verbs within a clause-chain.

  (28)   Assignment of Absolute Tense

  $$\text{TP}_{Medial} \dots \text{TP}_{Medial} \dots \text{TP}_{Medial} \dots \text{TP}_{Matrix}$$
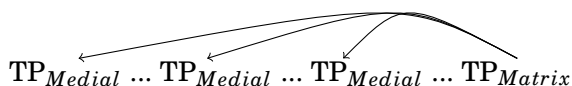
- On the other hand, as for negation it seems that each clause within a clause-chain has scope over all following clauses including the final full-fledged one because if one clause within a clause-chain contains a negation, all following clauses must be negated as well.
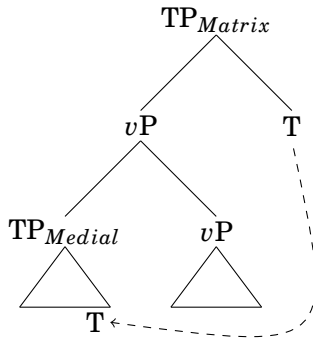
  (29)   Negativity Requirement

  $$\text{TP}_{Medial} \dots \text{TP}_{Medial} \dots \text{TP}_{Medial} \dots \text{TP}_{Matrix}$$
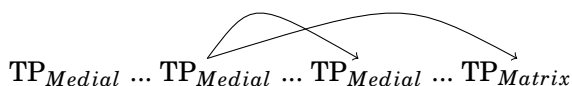
The negativity requirement is shown in (30). If the final verb contains a negation, they preceding clause-chain may be either positive (30-a) or negative (30-b) but if the clause-chain is negative, the final verb must be too (30-c).

(30)   a. Ho busale-ce-b   dana age qee   qo-l-oin.
            pig run.out-DS-3SG man 3PL NEG hit-NEG.PAST-3PL
            'The pig ran out and the men did not kill it.'
        b. Ho qee   busale-ce-b   dana age qo-l-oin.
            pig NEG run.out-DS-3SG man 3PL hit-NEG.PAST-3PL
            'The pig did not run out and the men did not kill it.'
        c. *Ho qee   busale-ce-b   dana age qo-ig-a.
            pig NEG run.out-DS-3SG man 3PL hit-3PL-TOD.P
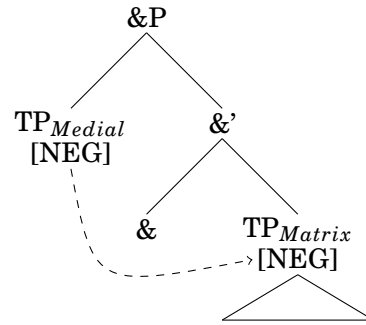   'The pig did not run out and the men killed it.'

The present approach offers the possibility to capture this apparent contradiction. The intuition is easy: As long as the medial clause is in its base position, the matrix TP c-commands it and every element inside it. Hence, it may assign absolute tense via a normal AGREE relation.

The reverse scope order is established when the medial clause moves to Spec&P. Now the medial clause, being the first conjunct, c-commands the matrix TP. Since only the root node of the medial TP c-commands the second conjunct, we must assume that the TP is marked for polarity in Amele (e.g. with a feature NEG in its feature matrix). If we assume further that a NEG feature compares itself to the polarity feature of the second conjunct, we can derive the negativity implication in Amele as well.

(31)   AGREE relation of the tense feature   (32)   AGREE relation of the NEG feature.

$$TP_{Matrix}$$

$$vP \quad\quad T$$

$$TP_{Medial} \quad vP$$

$$T$$

$$\&P$$

$$TP_{Medial} \quad \&'$$
$$[NEG]$$

$$\& \quad TP_{Matrix}$$
$$[NEG]$$

Side Note:

The derivation of the negativity requirement in Amele must make several stipulative assumptions (e.g. the fact that a positive POS feature for example does not introduce such an AGREE relation.) and I do not want to claim that this is the best of all possible analyses. I just wanted to show that under this new approach to clause-chains, it seems at least possible to account for the complicated scopal relations because this approach is the only one that is based on a movement operation which allows to shift the scopal relations of a clause.

8 Conclusion

8.1 Further issues

- According to Dooley (2010) , a major criterion to identify clause-chaining constructions is the difference between backgrounded and foregrounded clauses. According to Dooley, CCCs cannot be adverbial subordinate clauses because medial clauses are not presupposed, they are part of the sequence of events.

⇒ This is in line with the present theory if one assumes that the foreground⇔background distinction is determined on the basis of the surface structure not of the underlying structure.

- There is quite some variation amongst clause-chaining languages as to which categories may be expressed independently in every medial clause and which categories are obtained from the matrix predicate. It is yet to be determined whether this variation can be explained within the present theory or whether additional assumptions must be made.

- Other constructions in the world's languages such as converb clauses seem to show certain similarities with clause-chaining constructions. It is to be seen whether these constructions share the same abstract mechanisms.

8.2 Summary

- Clause-chaining constructions show mixed behaviour with respect to their status as subordinate or coordinate clauses.

- I argued that this mixed behaviour can be derived if one assumes that clause-chains undergo a movement operation which turns a subordinate clause into a coordinate clause.

- This derives all syntactic properties of clause-chaining constructions: The subordinate properties are due to operations at an early step of the derivation and the coordinative properties are due to late operations or filters which apply to the surface.

- The present approach also derives the empirical variation when more than one medial clause is involved as well as it offers a possibility to resolve the scope paradox in Amele.

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