An Itsy-Bitsy Puzzle: Asymmetric coordination in Khoekhoegowab

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Khoekhoegowab (Central Khoesan, Namibia, ~200,000 speakers) allows an unusual construction in which a object may be topicalized out of the first of two conjoined VPs.[1]

- (1) shows a Khoekhoe clause with two conjoined VPs: two distinct verbs and objects, but only one subject and only one tense.

- In (2), the object of the first verb has been topicalized; topicalizing the second object is impossible.

- This construction is surprising because it seems to violate the Coordinate Structure Constraint (Ross, 1967).

(1)   Dandagob ge   [amsa ‖nae] tsi   [ǂnaba ra   ǂna.]
        D.   DECL song sing AND   dance IMPV dance
        "Dandago is singing a song and dancing a dance."

(2)   a.   **Amsa**$_i$ =b   ge   Dandagoba [t_i ‖nae] tsi [ǂnaba ra   ǂna.]
             song   =3SM DECL D.   sing   and   dance IMPV dance
             "As for a song, Dandago is singing it and dancing a dance."
        b.   *ǂnaba$_i$ =b ge Dandagoba [amsa ‖nae] tsi [t_i ra ǂna]

This construction is also striking because it closely parallels a well-studied but poorly-understood construction in German, called the Subject Gap in Finite Clause (SGF):

(3)   **In den Wald**$_i$ [ging der Jäger t_i] und [fing   einen Hasen.]
        into the forest   went the hunter   and   caught a   rabbit
        "The hunter went into the forest and caught a rabbit."

The SGF construction is defined by the following properties:

- Two conjoined predicates share one subject, which nevertheless appears in the middle of the first conjunct.

- Some XP is fronted out of the first conjunct, in apparent violation of the Coordinate Structure Constraint.

- There is an asymmetry: Only the first conjunct is transparent for extraction.

While the SGF construction has been well-studied in German (Kathol, 1995; Höhle, 1990; Johnson, 2002; Schwarz, 1998) and Dutch (Heycock & Kroch, 1993), to the best of my knowledge it has never been found outside of the Germanic family.[2]

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[1] Khoekhoe data comes from original fieldwork carried out in Windhoek during the austral winter of 2017, supplemented by work in Connecticut this spring. Thanks to my wonderful consultants Gerdrut Hevita, Markus Kooper, Magdalena Isaak, Michelle Swartbooi, Nadia April, and Irene ‖Garoes for their generous help; any mistakes are my own.

[2] Bjorkman (2014) points out that the SGF, while not productive in English, exists in frozen form in the nursery rhyme 'The Itsy-Bitsy Spider': *Down$_i$ [came the rain t_i] and [washed the spider out]*.

Khoekhoe differs from German in a number of key morphosyntactic respects, which shed more light on this unusual construction.

- In particular, the Khoekhoe SGF rules out a number of possible analyses which either argue for hidden structure or for the CSC being outside the syntax proper.

- I will argue that Khoekhoe pushes us towards an analysis where the coordination involved in SGF constructions is fundamentally asymmetric: The extracted items were never actually in the first conjunct.

- However, this leaves a typological puzzle: Why is this asymmetric coordination not more widely available?

The rest of this talk will proceed as follows:

§1 reports the basic facts of the SGF construction cross-linguistically and makes the case that the Khoekhoe construction really is the same thing.

§2 reports some new facts from Khoekhoe that suggest that we cannot appeal to post-syntactic processes for escape from the CSC: Whatever is allowing the SGF construction is present in the narrow syntax.

§3 details an analysis that takes the asymmetry of the SGF seriously, proposing that the coordination happens before the first verb combines with its internal argument (but after the second verb does so). This makes a prediction about the nature of passivization in SGF sentences, which is borne out.

§4 concludes with some discussion of a deeper puzzle: Why do some langauges allow SGF while others don't?

1   The SGF, cross-linguistically

First, some background on Khoekhoe clause structure:

- Generally verb-final.

- In matrix clauses, second-position clause type clitics, e.g. *ge* 'declarative'.

- By default, the subject appears in first position — as in (4).

- However, any XP may be topicalized into this position, in which case the subject appears after the clause type clitic — as in (5).

(4)   Dandagob ge   ǁari   tarasa ǂkhanisa go   mā.
       D.   DECL yesterday woman   book   PAST give
       "Dandago gave the book to the woman yesterday."

(5)   ǂkhanisa =b   ge   Dandagoba ǁari   tarasa go   mā.
       book   =3SM DECL D.   yesterday woman   PAST give
       "As for the book, Dandago gave it to the woman yesterday."

Descriptively, I'll call the first position the *prefield* and the positions between the clitic and the verb the *middlefield*.

1.1   The SGF itself

Recall that the SGF involves topicalizing the argument of the first verb into the prefield, stranding the subject in the middlefield:

(6) Amsa$_i$ =b   ge   Dandagoba t_i ‖nae tsi ǂnaba ra   ǂna.
     song   =3SM DECL D.   sing and dance IMPV dance
   "As for a song, Dandago is singing it and dancing a dance."   (= (2-a))

In both Khoekhoe and German, the extraction possibilities are asymmetric: only the first object can be extracted this way.

(7) *ǂnaba$_i$ =b   ge   Dandagoba amsa ‖nae tsi t_i ra   ǂna.
     dance   =3SM DECL D.   song sing and   IMPV dance
     Intended: "As for the dance, Dandago sang a song and danced it."

(8) *Den Hund$_i$ hat einer   ihn gefüttert und hat t_i geschlagen.
     the dog   has someone it fed   and has   hit
     Intended: "Someone has both fed the dog and hit it."

Furthermore, the subject gap in the second conjunct is obligatory:

(9) *arina =b   ge   Dandagoba |namsa tsi   Khoedagesa |hôana a   !khuisa.
     dogs =3SM DECL D.   love   and K.   cats STAT.PRES hate
     Intended: "As for dogs, D. loves them and K. hates cats."

This fact — that SGF constructions seem to license only one subject — strongly implies that the coordination takes place below the level at which the subject is merged. This is schematized in (10).

(10)
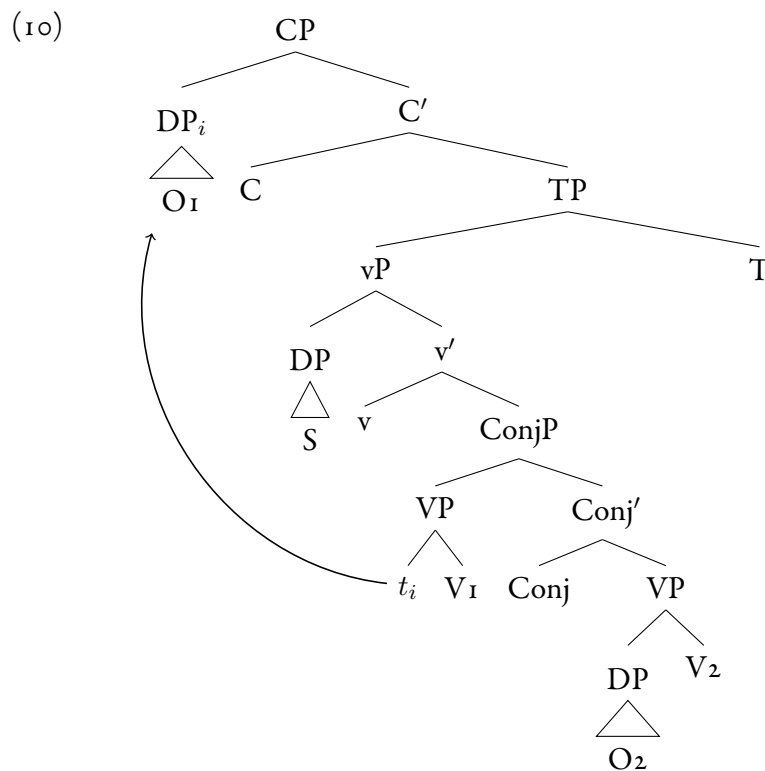
Some prior analyses (e.g. Schwarz 1998) of the SGF have argued that the conjuncts are in fact much bigger than this:

- In particular, if both conjuncts are CPs (with the subject of the second clause being somehow elided), then the topicalization never in fact leaves the first conjunct.

- There are a variety of empirical arguments for and against this in Germanic.

However, such an analysis is very hard to maintain in Khoekhoe:

- In Khoekhoe SGF constructions, only one clause-type marker appears.

- In fact, only one tense marker appears!

(11)   Amsa =b   ge   Dandagoba ‖nae tsi ǂnaba ǂna   tama.
         song =3SM DECL   D.   sing and dance dance NEG.NF
         "As for the song, Dandago didn't sing it and dance the dance."

- These facts seem to push us towards taking seriously the structure in (10).

- But if we do, we need some other explanation for why topicalization is allowed to violate the Coordinate Structure Constraint (CSC).

2   ESCAPING THE CSC

Prior analyses of the SGF which use VP-coordination structures include Kathol (1995); Johnson (2002); Heycock & Kroch (1993).

- Any such analysis needs a way for the moved item to avoid the CSC.

- In general, prior analyses escape the CSC by appealing to post-syntactic processes.

- I'll discuss two representative small-conjuncts analyses, one which appeals to LF and one to PF.

- I'll show that Khoekhoe provides new facts which rule out either of these escape hatches — however we escape the CSC, it must happen in the syntax itself.

2.1   Escape at LF

One road that a small-conjuncts solution can take is to allow escape from the CSC at LF:[3]

- Perhaps the CSC is not a constraint on syntactic processes but on LF representations, as proposed in Fox (2000).

- As long as the syntactic movement is 'undone' via reconstruction at LF, no CSC violation obtains.

- In this model, we predict that the moved item in SGF clauses will always be interpreted **below the subject:** [4]

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[3] This solution is not represented in pure form in the literature; the version I'm presenting is an amalgamation of Johnson (2002); Fox (2000); Lin (2001).

[4] This analysis doesn't account for the asymmetry between the first and second objects.

(12)
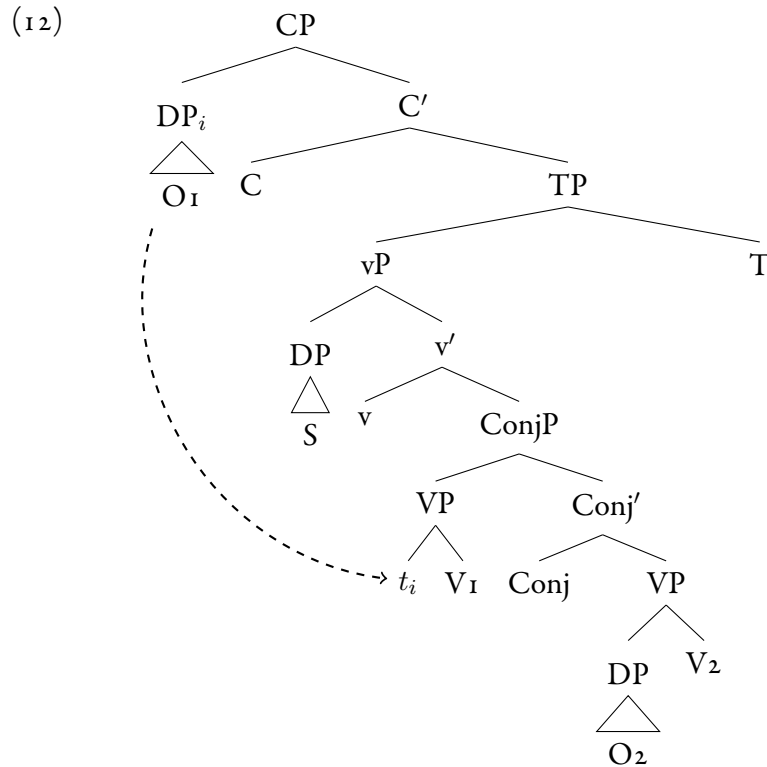
We can use Condition C to test this prediction.

(13) ǁîb ge   [Dandagob di |hôasa |namsa] tsi [ti ariba a   !khuisa.]
       He DECL D.   POSS cat   love   and my dog STAT.PRES hate
       "He$_i$ loves Dandago's$_{j/*i}$ cat and hates my dog."

(14) Dandagob di |hôasa =b   ge   [(ǁîba) t |namsa] tsi [ti arina a   !khuisa.]
       D.   POSS cat   =3SM DECL (he) love   and my dog STAT.PRES hate
       "As for Dandago's$_{j/i}$ cat, he$_i$ loves it and hates my dog."

The prediction is **not borne out**:

- (13) is a control with the subject initial, showing that there is a Condition C disjoint-reference effect between the subject 'he' and the possessor 'Dandago'.

- (14) is the same sentence in SGF order, and there is no longer a disjoint reference effect!

- That is: Topicalization in Khoekhoe ameliorates Condition C effects[5], even in SGF contexts.[6]

In sum: We might have been able to escape the CSC via reconstruction at LF, but in fact reconstruction does not occur.

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[5]This is true even in non-SGF contexts — *Dandagob di |hôasab ge (ǁîba) a |namsa* "As for Dandago's cat, he hates it." also allows coreference. This is perhaps surprising?

[6]Tentatively, the same seems to be true for German: One speaker reports that *in Johns Haus ist er gegangen und hat ein Buch genommen.* "Into John's house did he go and a take a book." allows coreference between *John* and the subject.

2.2   *Escape at PF*

Kathol (1995) proposes an analysis in which the fronted object in SGF sentences escapes the CSC at PF:

- He proposes a wholesale reorganization of our understanding of the linearization algorithm.

- In particular, he proposes that the algorithm places topic-marked XPs leftmost.

- In this system, the fronted item has never actually moved — it just appears in a different linear position.

- This analysis cannot explain all the Khoekhoe facts.

The evidence for this claim comes not from SGF sentences themselves, but from the properties of WH questions.

- Khoekhoe allows WH items to remain *in situ*.

- In coordination, WH items can create questions from inside the first conjunct, but not the second.

- This parallels the asymmetry we see in the SGF.

(15)   Dandagoba (kha)   tae-e |namsa tsi |hôana a   !khuisa?
        D.   INTER what love   and cats   STAT.PRES hate
        "What does Dandago love while hating cats?"

(16)   *Dandagoba (kha) |hôana |namsa tsi   tae-e a   !khuisa?
        D.   INTER cats   love   and what STAT.PRES hate
        Intended: "What does Dandago love cats and also hate?"

This seems to rule out any solution in the vein of Kathol (1995):

- The fact that a WH-word in the second conjunct *cannot* create a question tells us that the CSC is still active.

- But the WH-word in the first conjunct *can* create a question — depending on your theory of WH-*in situ* either by agreeing with a higher head in the syntax or by covertly moving at LF.

- Regardless, no PF reordering will capture these facts.

In addition to ruling out PF mechanisms for escaping the CSC, these facts suggest that the asymmetry of SGF sentences is central to the mystery:
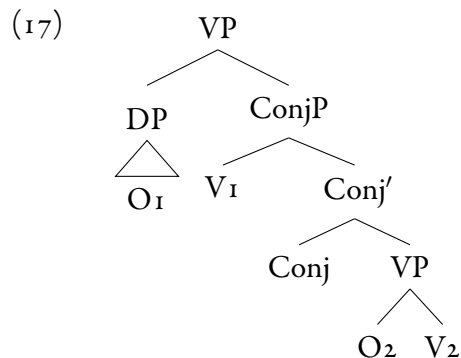
- This asymmetry affects more than just the SGF: Leftmost-conjuncts are transparent, other conjuncts are opaque.

- Whatever the source of this asymmetry, it seems to be present in the narrow syntax.

3   An Analysis

Khoekhoe seems to tell us at least two new things about the SGF construction that Germanic morphosyntax obscures:

1. The conjuncts in SGF sentences *must* be small.

2. The asymmetry between the conjuncts must be present in the narrow syntax — the first conjunct is permeable for more than just topicalization.

The simplest possible analysis which captures these two facts results in an atypical syntax:

(17)

$$
\begin{array}{c}
\text{VP} \\
\diagup\quad\diagdown \\
\text{DP}\qquad\text{ConjP} \\
\end{array}
$$

```
            VP
          /    \
        DP      ConjP
        /\      /    \
       O1      V1    Conj'
                     /   \
                  Conj    VP
                          / \
                        O2   V2
```

- This analysis takes seriously the idea that the coordination is asymmetric by coordinating two unlike objects, a phrase and a head.

- The second conjunct VP combines not with the whole first VP, but just with the first verb, creating a complex predicate.

- This way, O1 simply isn't inside the conjunct, and therefore is available for topicalization, wh-question formation, etc.

- Semantically, this perhaps isn't so strange: VP and V1 and both predicates of events and could be joined by Event Identification (Kratzer, 1996).

Some support for this analysis comes from passivization.

- If this structure is correct, then the two verbs should not be independently passivizable.

- Only the first object should be available for promotion to subject.
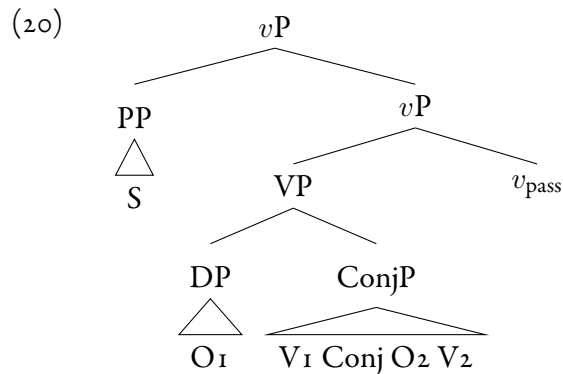
This is in fact what we see:

(18)   a.   !khanis ge   ‖ama -he   tsi   penna go   ‖amaxu -he
            book   DECL buy -PASS AND pen   PAST sell   -PASS
            "The book was bought and (someone) sold the pen."

       b.   *penni ge !khanisa ‖ama -he tsi go ‖amaxu -he

(19)   !khanis ge   (Dandagob xa) ‖ama -he   tsi   (*Dandagob xa) penna go   ‖amaxu -he
       book   DECL by D.   buy -PASS AND *by D.   pen   PAST sell   -PASS
       "The book was bought by Dandago and he sold the pen."

- (18) shows that O1 may be passivized and O2 may not.

- The passive morpheme *-he* obligatorily shows up on **both** verbs — even the one that fails to have its object promoted!

- (19) shows another telling fact: By-phrases may only appear in the first conjunct, not the second.

These facts are compatible with the analysis sketched above, if a single v_{pass} is morphologically doubled onto each verb:

(20)

```
                        vP
               ┌────────┴────────┐
              PP                 vP
              △          ┌───────┴──────┐
              S         VP            v_pass
                   ┌─────┴─────┐
                  DP         ConjP
                  △        ┌───┴────┐
                  O1      V1 Conj O2 V2
```

4   Conclusion: Typological implications

Khoekhoe is the first non-Germanic language found with the SGF construction.

- Because Khoekhoe differs from Germanic in a number of crucial respects, it lets us probe the nature of this construction in a different way.

- The result is that we must take seriously the idea that SGF involves truly asymmetric coordination in the narrow syntax.

Regardless of whether this is the right analysis, I think there is a much deeper question at play:

- **Why do Germanic and Khoekhoe have this construction when other languages do not?**

- The analysis sketched here does nothing to answer this: Why don't all languages allow this kind of asymmetric coordination?

We might go looking for other properties that Khoekhoe & Germanic share. For example: German is underlyingly verb-final (ignoring V2); so is Khoekhoe.

- **Hypothesis 1:** Perhaps the availability of SGF tracks verb-finality?

- **Not true:** Hindi-Urdu is verb-final and allows scrambling for information-structure, but does not allow SGF extraction.[7]

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[7]Thanks to Jyoti Iyer and Sakshi Bhatia for the Hindi-Urdu data.

(21) a.   Raam kuttoN-ko pasand kartaa hai   aur billiyoN-se nafrat kartaa hai
            R.   dogs-DAT liking do   PRES and cats-COM hatred do   PRES
            "Raam likes dogs and hates cats."
      b.   *kuttoN-ko Raam pasand kartaa hai   aur billiyoN-se nafrat kartaa hai
            dogs-DAT R.   liking do   PRES and cats-COM hatred do   PRES
            Intended: "As for dogs, Raam likes them and hates cats."

Another hypothesis: While Khoekhoe doesn't have V2 word order, it does have 2nd position clitics.

- **Hypothesis 1:** Perhaps the availability of SGF tracks 2nd-position phenomena?

- **Not true:** Kashmiri has V2 word order with free topicalization into the prefield (Manetta, 2006) but does not allow SGF extraction.[8]

(22) a.   Mohan chu film vuch-aan ta   chu su boz-aan.
            M.   AUX film see-PART and AUX it hear-PART
            "Mohan is seeing the film and hearing it."
      b.   *Film chu Mohan vuch-aan ta   chu su boz-aan.
            Film AUX M.   see-PART and AUX it hear-PART
            Intended: "As for the film, Mohan is seeing it and hearing it."

This rules out the obvious parallels between Germanic and Khoekhoe.

- Perhaps there's a more interesting parallel that will explain this connection.

- I'm always looking for SGF-like constructions in other languages — if you know of one, please let me know!

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[8] Thanks to Professors Emily Manetta and Omkar Koul for the Kashmiri data.

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