



The Syntax and Prosody of Clausal Rerooting*

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1 Introduction

1.1 Point of Departure

➤ Many phenomena are generally restricted to the root clause – ex, subj/aux inversion in English.

- (1) a. What will_i John *t_i* say?
- b. I wonder what John will say.

➤ Sometimes, however, such phenomena are found in embedded clauses, too.

- (2) John said that never again would_i he *t_i* do that.

➤ Interestingly (1)b is a single intonational phrase, ι

➤ (2) forms two ι s.

- a. [ι I wonder what John will say.]
- b. [ι John said that][ι never again would he do that.]

➤ We attempt to capture these two observations under the same analysis – illustrate also with European Portuguese and Korean.

➤ Answer: root clause phenomena and ι are both triggered by the Speech Act Phrase (SaP)

➤ SaP typically found only in the matrix clause.

1.2 Main Questions:

➤ Under Match Theory (Selkirk 2009; 2011), what corresponds to the Intonational Phrase, ι ?

CP (Selkirk 2009)?

locus of illocution (Selkirk 2011)?

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head containing V or Aux (Hamlaoui & Szendrői 2017)?

➤How do we understand main clause phenomena that appear in embedded clauses?

Subject-aux inversion in English

Proclitics in European Portuguese

Participant-oriented psychological predicates in Korean

➤Under Match Theory $\iota = \text{CP}$ (must be re-evaluated)

1.3 Proposal

➤Root clause contains Speech Act phrases, SaP (Speas & Tenny 2003)

➤Proposal: $\iota = \text{SaP}$

➤Embedded clause typically lacks SaP → do not form separate ι

➤If SaP is present in an embedded clause → separate ι , related semantic effects

➤We give examples from English, European Portuguese and Korean to illustrate our claim.

1.4 Roadmap

section 2 – Background

section 3 – Phenomena

section 4 – Analysis

section 5 – Conclusions and outlook

2 Background

➤This section discusses (i) the Intonational Phrase, ι , and (ii) the Speech Act Phrase (SaP)

2.1 Defining the Intonational Phrase

➤In simple descriptions ι is defined as CP or as an *illocutionary clause* (Selkirk 2011)

➤Many instances of *comma intonation* → XP forms a separate ι

- (3) a. This book, John read yesterday.
b. [ι this book][ι John read yesterday]

➤List of items that form separate ι : non-restrictive relative clauses, topics, etc. (Nespor & Vogel 1986)

➤Hamlaoui and Szendrői (2015; 2017) propose that the highest projection of the verb or aux determines the $\iota \rightarrow$ topics are higher than this projection \rightarrow separate ι

➤Assume for English that past tense is in T and undergoes lowering (Lasnik 1981; Skinner 2009)

- (4) a. [CP [TP John T[-ed] read this book yesterday.]]
a'. [ι John read this book yesterday]
- b. [CP this book $_i$ [TP John T[-ed] read t_i yesterday.]]
b'. [ι this book][ι John read yesterday]

➤Problem:

- (5) O João não me viu [European Portuguese]
DET John NEG 1SG.ACC.CL see.3SG.PST
'John didn't see me.'

➤European Portuguese has V-to-T movement, like French (Raposo 1987; Pollock 1989; Barrie 2000).

➤The material to the left of the verb cannot all plausibly appear in TP

➤(5) constitutes a single $\iota \rightarrow$ clearly the position of the verb cannot determine ι , at least in European Portuguese.

➤Embedded clauses \rightarrow default case: one ι

- (6) a. Mary knows that John ate her apple.
b. Mary knows when John ate her apple.

➤both are a single ι

➤cannot simply map CP to ι

➤Also cannot map projection containing V or Aux to ι – would always expect one ι per clause, contrary to what we observe in (2)a. and (6).

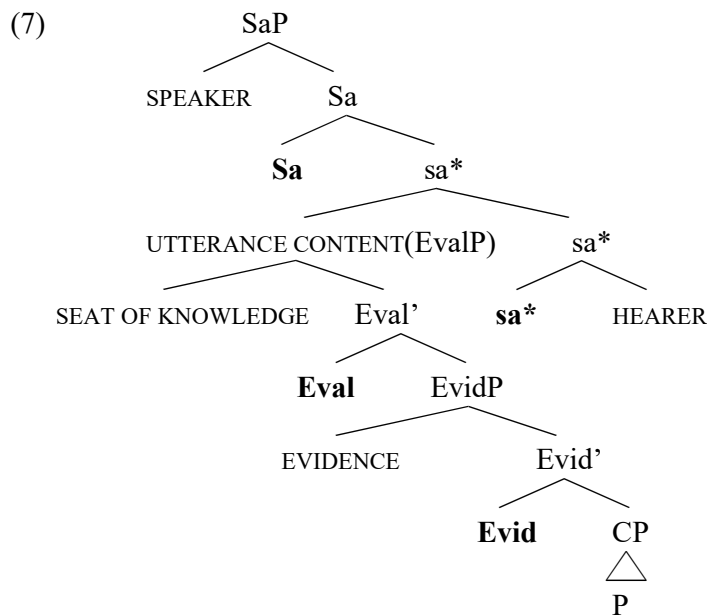
2.2 *Speech Act Phrases*

- Root clause contains high CP elements and Speech Act phrases (Speas & Tenny 2003; Haegeman & Hill 2013)
- Sometimes called the ‘far-left periphery’, the Speech Act domain is a formalization of the syntax-discourse interface
- The Speech Act Domain is comprised of the Speech Act Projection (Speech Act Phrase), and a Point of View Domain (Sentence Phrase) - (7) abbreviated as SaP layer
- Elements in the Speech Act Domain:

- P-roles: SPEAKER, HEARER and UTTERANCE CONTENT
 - Each are structural positions within the Speech Act head’s maximal projection

- Elements in the Point of View Domain:

- Evaluation head, SEAT OF KNOWLEDGE, Evidential head and EVIDENCE
 - Structurally configures the point of view of the grammaticized sentient entity



- (7) represents the Speech Act Domain and the Point of View Domain combined, specifically for the declarative sentence

3 Three Phenomena

➤ Three empirical issues: English, Korean, European Portuguese

3.1 *Embedded Subject/Aux Inversion*

➤ Subject-auxiliary inversion is normally restricted to the matrix clause in English.

- (8) a. Mary asked what John was reading.
b. *Mary asked what was John reading. [Standard English]

➤ For many speakers, however, subj-aux inversion is permitted in casual speech (Wood, McCoy & Martin 2015)

- (9) %Mary asked what was John reading. [Casual English]

➤ Furthermore, subj-aux inversion is obligatory with certain embedded focus phrases in both casual and standard English.

- (10) a. Mary said that never again would she read Skinner.
b. *Mary said that never again she would read Skinner.

➤ Problematic for the standard I-to-C analysis of subj-aux inversion (Williams 1974)

➤ C position is already filled with an overt complementizer.

➤ Thinking of subj-aux inversion as a root phenomenon, we propose the following:

that the embedded clause is built up and includes SaP,

which gives rise to root clause effects (subj/aux inversion),

including being prosodically marked as a separate Intonational Phrase.

➤ The remainder of the clause is then built up in the usual way.

➤ The lack of subj-aux inversion in Standard English in (8) is the result of a bare CP (in the sense of Rizzi 1997) structure found only in canonical embedded clauses.

➤ The bare CP does not attract the auxiliary.

3.2 Korean Experiencer Verbs

➤ Experiencer verbs in Korean are well known for person restrictions (C. Lee 1999; Park 2013).¹

- (11) a. *nay-ka/*Minswu-ka* *sakwa-ka* *coh-a-yo*
 1SG-NOM/*Minsoo-NOM apple-NOM good-INFRM-POL
 ‘I/*Minsoo like(s) apples.’
- b. ?*nay-ka/Minswu-ka* *sakwa-lul* *coh-a* *ha-ye-yo*
 1sg-NOM/Minsoo-NOM apple-ACC good-INF do-INFRM-POL
 (‘I/Minsoo likes apples.’)

➤ subject must be 1st person, (11)a

➤ unless the light verb *hata* is used, (11)b.

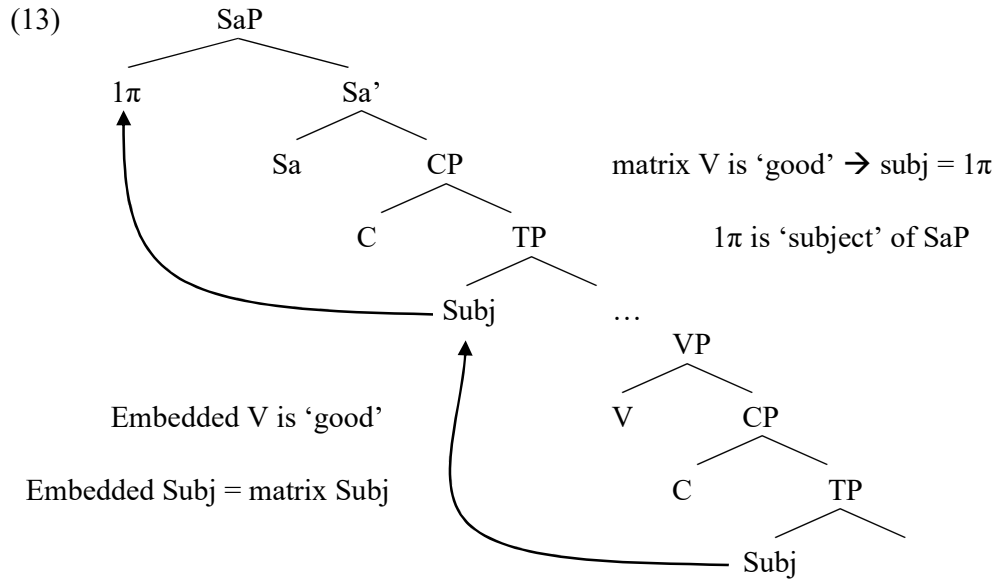
➤ In embedded clauses the subject of *cohta* is the matrix subject rather than the 1st person (Barrie & Kim 2014; Kim 2014; 2015).

- (12) a. *Minswu-nun* *sakwa-ka* *coh-ta-ko* *ha-ye-ss-ta*
 Minsoo-TOP apple-NOM good-DECL-COMP say-INFRM-PST-DECL
 ‘Minsoo¹ said that he¹ likes apples.’
- b. **Minswu-nun* *nay-ka* *sakwa-ka* *coh-ta-ko* *ha-ye-ss-ta*.
 Minsoo-TOP 1sg-NOM apple-NOM good-DECL-COMP say-INFRM-PST-DECL
 (‘Minsoo said that I like apples.’)

➤ Matrix clause – subject is 1st person – agrees with speaker in SaP (see Kim 2014; 2015 for details)

➤ Embedded clause – subject is identical with matrix subject

¹ Similar effects are found with so-called Jussives (Pak 2006; H. Lee 2012; Zanuttini, Pak & Portner 2012), and with the volitive *-keyss* (Koo & Lehmann 2010; Park 2013).



➤ Consider now the following data

- (14) a. *emma-nun nay-ka sakwa-ka coh-ta-ko ha-ye-ss-ta
 mom-TOP 1sg-NOM apple-NOM good-DECL-COMP say-INFRM-PST-DECL
 ('Mom said that I like apples.')
- b. emma-nun mwusun iywu-eyse-inci nay-ka sakwa-ka
 mom-TOP what reason-LOC-for 1SG-NOM apple-NOM
 coh-ta-ko ha-ye-ss-ta
 good-DECL-COMP say-INFRM-PST-DECL
 'Mom, for whatever reason, said that I like apples.'

➤ (14)a. violates generalization above → ungrammatical

➤ (14)b. possible → embedded SaP *reroots* the embedded clause

➤ subject of *cohta* is now the speaker (1st person) rather than the matrix subject

3.3 Embedded Portuguese Topics

➤ European Portuguese typically has enclitic object pronouns in the main clause.²

- (15) a. O pai deu-me este livro
 the father gave-me this book
 'Father gave me this book.'

² The hyphens in the Portuguese examples are purely orthographic.

- b. Este livro deu-**me** o pai
 this book gave-me the father
 ‘This book, father gave me.’

➤ Enclitic (in bold) is found in a neutral sentence and with a topic.

➤ Embedded clauses nearly always have proclitic object pronouns, again in bold.

➤ When an embedded topic is found, however, enclisis surfaces again.

- (16) a. A Maria disse que o pai **me** deu este livro.
 The Mary said that the father me gave this book
 ‘Mary said that father gave me this book.’

- b. A Maria disse que este livro deu-**me** o pai
 the Mary said that this book gave-me the father
 ‘Mary said that, this book, father gave me.’

➤ Enclisis in EP sometimes analyzed as V to C movement (Barrie 2000)

➤ V to C movement blocked in embedded clauses (overt C)

➤ same effects with intonation:

(16)a is one \uparrow

(16)b is two \uparrow s

4 Analysis

➤ This section provides the analysis for the facts presented above

4.1 Standard Wh-Movement

➤ Matrix questions are related to the relationship between the speaker and the hearer.

➤ It is a Call on the Addressee to answer a question (Searle 1969; Haegeman & Hill 2013; Heim et al. 2014).

➤ Call on Addressee – How the speaker wishes the addressee to deal with the utterance (respond to it, give clarification, expect agreement, etc.)

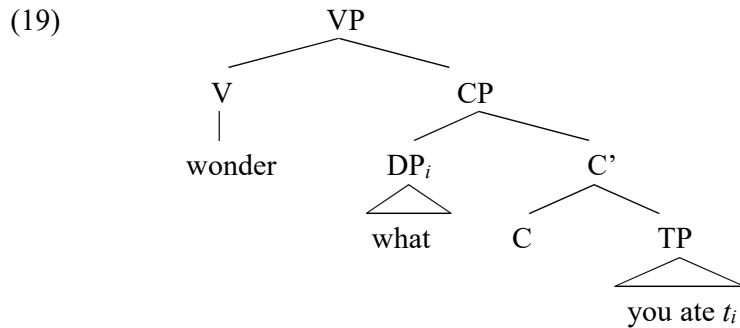
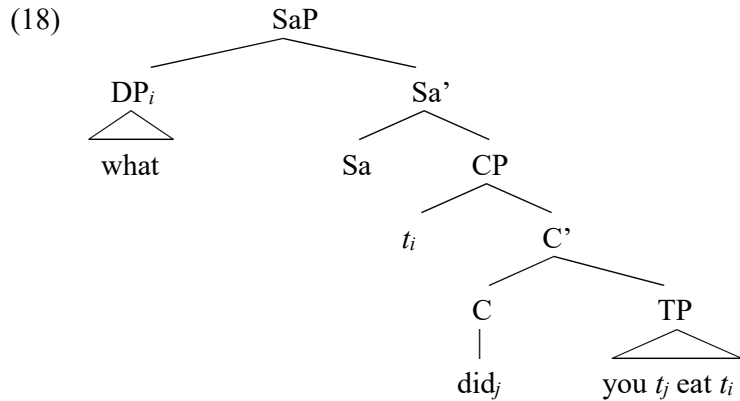
➤ Embedded questions do not have this property. – not a Call on Addressee (except maybe pragmatically)

➤ Thus, matrix wh-phrase interacts with SaP layer

Proposal: Subject/Aux Inversion takes place with an affective operator (question, emphatic phrase, etc.) AND a SaP.

➤ Tentative structures:

- (17) a. What did you eat?
 b. I wonder what you ate.



➤ Doubly-filled Comp Filter? (Chomsky & Lasnik 1977)

4.2 Embedded Emphatic Phrases

➤ Embedded emphatic phrase requires subject/aux inversion

- (20) a. Mary said that never again would she eat anchovies.
 b. *Mary said that never again she would eat anchovies

➤ excursus on meaning of emphatic phrases

- (21) a. Mary will never eat anchovies again.
 b. Never again will Mary eat anchovies.

➤ (21)a. is neutral

➤(21)b. is a Call on Addressee indicating that the proposition is important or urgent in some way.

➤Recall: embedded questions are not a Call on Addressee.

➤Embedded emphatic phrase is a Call on Addressee - (20)a. still conveys to the addressee a sense of importance or urgency.

➤embedded SaP needed

(22) ...said that [_{SaP} never again_i [_{CP} would_j [_{TP} she *t_j* ... *t_i*]

➤embedded SaP triggers subject/aux inversion

4.3 *Embedded Wh-Questions*

➤In casual speech in English subject/aux inversion is sometimes found in embedded content questions.

(23) I wonder what did he do.

➤Further research is necessary into the properties of embedded subject/aux inversion in embedded *wh*-questions.

➤preliminary observations:

➤Do not work well with self-reflection

(24) ?I wonder what should I eat for lunch [said to self]

➤suggests Speaker/Addressee interaction is necessary

➤suggests an embedded SaP is present

➤another tentative suggestion: Speaker builds sentence from bottom up

➤When CP is formed, speaker “inadvertently” merges SaP rather than matrix verb

➤Embedded subject/aux inversion is typically judged ungrammatical and is difficult to elicit.

➤May be due to prosody (see below) or to the fact that these are accidentally created.

➤Korean: embedded SaP – embedded subject of *good* coreferential with 1π

- (25) a. Minswu-nun sakwa-ka coh-ta-ko ha-ye-ss-ta
 Minsoo-TOP apple-NOM good-DECL-COMP say-INFRM-PST-DECL
 ‘Minsoo¹ said that he¹ likes apples.’
- b. emma-nun mwusun iywu-eyse-inci nay-ka sakwa-ka
 mom-TOP what reason-LOC-for 1SG-NOM apple-NOM
 coh-ta-ko ha-ye-ss-ta
 good-DECL-COMP say-INFRM-PST-DECL
 ‘Mom, for whatever reason, said that I like apples.’
- (26) a. [SaP [CP [TP Subj¹ ... [VP [CP [TP Subj¹ [VP apple good]]]]]]]
- b. [SaP [CP [TP Subj ... [VP [SaP 1 π ¹ [CP [TP Subj¹ [VP apple good]]]]]]]]]

➤ European Portuguese:

➤ Again – topichood relates to an understanding between the speaker and the addressee

➤ Embedded topic → embedded SaP

- (27) a. A Maria disse que o pai **me** deu este livro.
 The Mary said that the father me gave this book
 ‘Mary said that father gave me this book.’
- b. A Maria disse que este livro deu-**me** o pai
 the Mary said that this book gave-me the father
 ‘Mary said that, this book, father gave me.’

➤ reanalyze *que* (complementizer) as very high Force (akin to Korean *ko*)

➤ as above, embedded SaP, verb can raise to C → enclisis in (27)b.

4.4 Interim Summary

➤ Embedded subject/aux inversion occurs with embedded emphatic phrases and sometimes in causal speech with embedded *wh*-phrases.

➤ In both cases, there is reasonably strong evidence to Speaker/Addressee interaction.

➤ This suggests an embedded SaP is found

➤ We have correlated the presence of SaP with subject/aux inversion, leaving the precise implementation to future research.

➤ Topic (embedded or otherwise) draws attention to previous entity between speaker and addressee

➤ Embedded topic requires an SaP to negotiate how the proposition is related to the speaker's

Call on Addressee

➤ Significant pause and pitch reset before embedded topic → new ι

➤ Both the Korean and the Portuguese data strongly suggest that an embedded SaP reroots the clause based on semantic and prosodic facts.

4.5 Interaction with Prosody

➤ Intonational phrase (ι) – top of prosodic hierarchy (Nespor & Vogel 1986; Selkirk 1986; 2011)

(28) Intonational phrase > phonological phrase > phonological word; $\iota > \varphi > \omega$

➤ Match Theory: ι corresponds to clause; φ corresponds to XP (Selkirk 2009; 2011)

➤ Why only the root clause corresponds to a clause is somewhat of a mystery

➤ proposal: ι corresponds to SaP – usually not found in embedded clauses

➤ embedded emphatic phrase: definite break and start of new ι

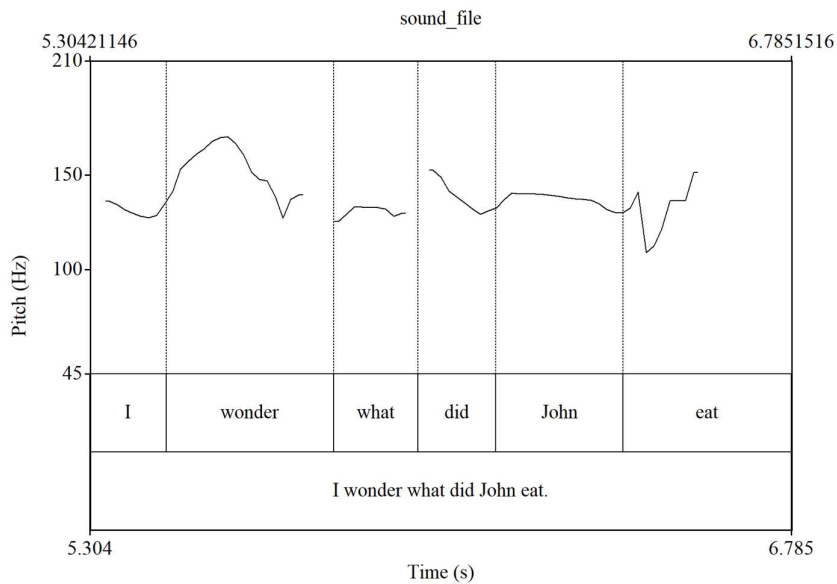
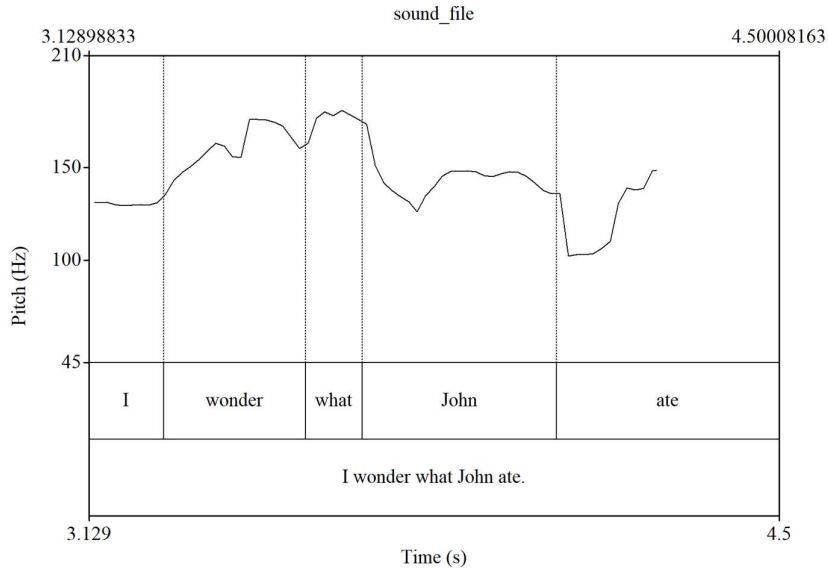
(29)
$$\begin{array}{ccc} L\% & H\text{-----} & H & & L\% \\ \text{John said that never again would he go on an airplane.} & & & & \end{array}$$

➤ Prosody of embedded *wh* harder to test – must use recorded real-life examples

➤ Nevertheless, a slight low boundary tone can be perceived with embedded subject/aux inversion, but not with standard non-inversion

(30) a.
$$\begin{array}{ccc} & H^*\text{-----} & L\% \\ \text{I wonder what John ate.} & & \end{array}$$

b.
$$\begin{array}{ccc} & L\% & L\% \\ \text{I wonder what did John eat.} & & \end{array}$$



- (31) a. A Maria disse que o pai **me** deu este livro.
 The Mary said that the father me gave this book
 'Mary said that father gave me this book.'
- b. A Maria disse que este livro deu-**me** o pai
 the Mary said that this book gave-me the father
 'Mary said that, this book, father gave me.'

➤ Boundary tones indicate right edge of ι (pitch tracks required)

➤ More detailed prosodic analysis is required for embedded *wh*-phrases

➤ embedded emphatic phrases – more commonly accepted as starting a new ι

5 Conclusions

➤ Subject-aux inversion in English is generally restricted to the matrix clause

➤ We discussed two instances where embedded subject-aux inversion is found

Embedded emphatic phrases (obligatory)

Embedded wh-questions (optional, only in causal speech)

➤ We discussed various lines of evidence tying these two environments together:

Embedded element (emphatic phrase/wh-phrase) is related to the relationship between the speaker and addressee.

Embedded clause constitutes a new ι

➤ We proposed that these facts can be explained by **rerooting** the clause by allowing an embedded SaP

➤ Gives rise to speaker-addressee relations

➤ We proposed that ι in Match Theory corresponds to a SaP rather than to a ‘clause’

➤ Test prosody in mult Clausal constructions in other languages.

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