Voice restructuring cross-linguistically—evidence for a synthesis model of complementation

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1 Introduction

Background

- Languages exhibit a variety of different semantic and morphosyntactic types of complementation.
- Despite the variation, dependencies between the meaning and the morphosyntactic coding of a complementation configuration can be widely observed.

(1) a. Byron forgot to water the plant. Implicative: non-finite
b. Laura forgot that she watered the plant. Factive: finite
c. *Laura forgot to have watered the plant. Factive: *non-finite

Synthesis (Wurmbrand and Lohninger 2019)

- Complement clauses are not selected (or only in a very limited way), but built freely.
- Restriction: The combination of matrix predicate and complement clause must be interpretable and the restrictions of parts must be met.
- Motivation: matrix predicate and embedded clause can affect each other.
- Example: Factive complements can, in principle, be finite or non-finite.

(2) a. I am glad that I am presenting at PSST. Factive
b. I am glad to be presenting at PSST. Factive

- But when the matrix verb alternates between a factive and implicative meaning, the form of the complement restricts the matrix meaning (as in (1)).

Voice restructuring

- A range of languages and constructions display an operation of long object A-movement [LOAM].
- LOAM: Promotion of an embedded argument to matrix subject (diagnosed by Case, agreement, language specific A-movement properties).

(3) DP.NOM Voice.PASS/PV.IMPL [Voice.DEFAULT/PASS/PV ~~DP.OBJ~~]

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This talk

- Four types of LOAM—a mini-typology of LOAM
- Ingredients of a unified account of LOAM

Main conclusions:

- Voice restructuring involves an obligatory argument-sharing dependency, which may be semantic in nature, but is nevertheless sensitive to the syntactic structure.
- The syntactic composition of a complement can restrict the matrix predicate.
- Matrix and embedded predicates affect each other, providing support for the *synthesis* model.

2 Four types of LOAM

2.1 Summary of properties and languages

		Voice restructuring		
Properties (when LOAM)	Raising	Voice Matching	Default Voice	Crossed Control
Embedded syntactic DP subject	no	no	no	no (only incorp.)
Matrix subject theta-role	no	yes	yes	yes
Matrix passive/PV	no	original	original	matched
Embedded passive/PV	possible	matched	no	original
Shared semantic subject	no	yes	yes	yes

Table 1: LOAM

- Terminology
  - All constructions involve LOAM, hence a type of raising, but we will distinguish four types of LOAM and reserve the term "Raising" as a label for one particular configuration (see 2.2).
  - The terms refer to configurations, not necessarily specific verbs (certain verbs may appear in more than one configuration).

- Shared property of LOAM: No Embedded syntactic DP subject:
  - There is no embedded **syntactic** subject DP (no overt DP in Spec,VoiceP, no PRO; see Wurmbrand 2001, Chen 2010, Wu 2013, Wurmbrand and Shimamura 2017, Berger 2019).
  - Result: embedded object cannot receive case and becomes case-dependent on the matrix.

- Raising: most (all?) languages
- Voice Matching: ?Chamorro, Isbukun Bunun, Tsou
- Default Voice: Acehnese, Amis, Croatian, Czech, European Portuguese, German, Italian, Japanese, Kannada, Mayrinax Atayal, Puyuma, Seediq, Serbian, Slovenian, Spanish, Takibakha Bunun

- Crossed Control: Balinese, Madurese, Sundanese (I. Paul, J. Vander Klok, p.c.); Indonesian, Javanese, Malagasy, Tagalog, Tongan, Tukang Besi, Samoan (Polinsky and Potsdam 2008)

2.2 Raising: non-thematic matrix predicate

- Properties:
  - Matrix predicate is non-thematic, i.e., unaccusative.
  - Matrix predicate cannot be passivized (1AEX: Perlmutter and Postal 1984).
  - Embedded passive is possible.

(4) a. *Nova seems that Danny left.
b. The cat seems to be out of the bag.
c. *The cake was seemed to eat/have been eaten.
d. The cake seems to have been eaten.

		Voice restructuring		
Properties (when LOAM)	Raising	Voice Matching	Default Voice	Crossed Control
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Shared semantic subject	no	yes	yes	yes

Table 2: LOAM

2.3 Voice restructuring: thematic matrix predicate

- The other three constructions involve thematic matrix verbs (e.g., the matrix verb imposes animacy restrictions).
- The main differences between the three Voice restructuring constructions lie in the distribution of Voice properties (Voice morphology, origin of the subject).

Subject originates in the higher clause (Wurmbrand and Shimamura 2017)

(5) Voice Matching

a. *Iliskinun-ku bunbun-a tu baliv-un.*
want.[PV]-1.SG.ACC banana-that.NOM TU buy-[PV]
Lit. 'The bananas are wanted to be bought by me.'
'I wanted to buy the bananas.' Isbukun Bunun [Wu 2013: 40, (10b)]

b. *Pära tafan-ma-chägi ma-na'fanätuk ni lalahi siha.*
FUT 1.PL-[PASS]-try PL.[PASS]-hide OBL men PL
Lit. 'We will be tried to be hidden by the men.'
'The men will try to hide all of us.' ?Chamorro [Chung 2004: 204, (6a)]

- Other combinations are impossible.

(6) Default Voice

a. *As casas foram abacadas de construir em 1950.*
the houses were finished to build in 1950
'They finished to build the houses in 1950.' Europ. Portuguese [Cinque 2002: 5, (7a)]

b. *naqaru-un* {*i t-um-uting*} *ni yumin* {*i t-um-uting*} *ku bawaq*
finish-[PV] {LNK beat-[AV]-beat} GEN Yumin {LNK beat-[AV]-beat} NOM pig
'Yumin finished beating/killing the pigs.' Mayrinax Atayal [Chen 2010: 5/19, (8a)/(38c)]

c. **naqaru-un i tuting-un ni yumin ku bawaq*
finish-[PV] LNK beat-[PV] GEN Yumin NOM pig
'Yumin finished beating/killing the pigs.' Mayrinax Atayal [Chen 2010: 11, (25b)]

- In many languages, the default form is the (active) infinitive.
- In Mayrinax Atayal, it is AV. As shown in Chen (2010), this AV marking does not trigger any of the usual properties:
  - Only SUBJECTS—the argument marked as the privileged argument—may extract; to extract an object, the verb needs to be marked PV; in restructuring, AV) is obligatory and extraction of objects is still possible.
  - The language has no ACC clitics; in simple clauses, object clitics are only possible when they are SUBJECTS/NOM; this is only possible when the verb occurs in PV; in restructuring, clitics are possible despite the AV form of the verb.

		Voice restructuring		
Properties (when LOAM)	Raising	Voice Matching	Default Voice	Crossed Control
Embedded syntactic DP subject	no	no	no	no (only incorp.)
Matrix subject theta-role	no	yes	yes	yes
Matrix passive/PV	no	original	original	matched
Embedded passive/PV	possible	matched	no	original
Shared semantic subject	no	yes	yes	yes

Table 3: LOAM

Subject originates in lower clause

(7) Crossed Control = CC (Regular control = RC) Indonesian

a. *Anak mau* [*kamu ø-peluk.*]
child want [2.SG PV-hug]
RC: 'The child wants to be hugged by you.'
CC: 'You want to hug the child.' [Berger 2019: 62, (9)]

b. *Kucing-nya coba* [*di-cium oleh Esti.*]
cat-3.SG try [PASS-kiss by Esti]
RC: 'Her cat tried to be kissed by Esti.'
CC: 'Esti tried to kiss her cat.' [Sato and Kitada 2012: (27)]

c. *Kucing-nya coba* [*men-cium Esti.*]
cat-3.SG try [AV-kiss Esti]
RC: 'Her cat tried to be kissed by Esti.'
CC: *'Esti tried to kiss her cat.' [Sato and Kitada 2012: (28)]

3 Voice restructuring mechanisms

3.1 Basic account

VP complementation (Wurmbrand 2001, Polinsky and Potsdam 2008)

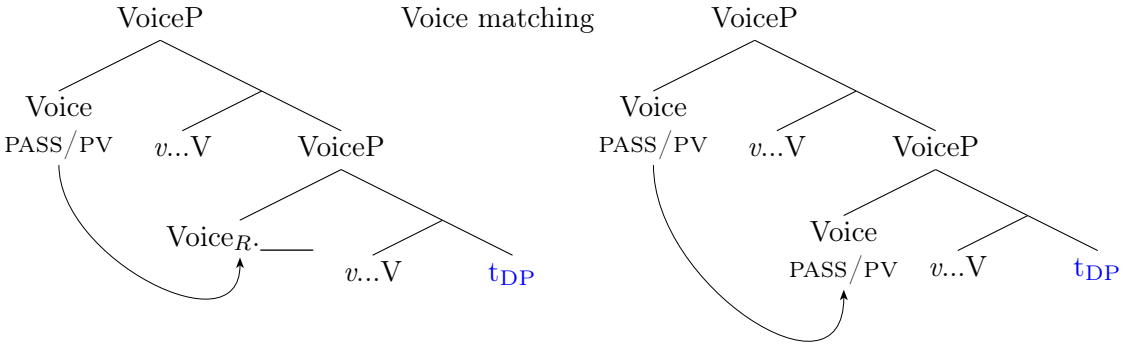
(8) a. V.PASS/PV *try/manage/want* [$_{VP}$ V DP.OBJ] LOAM possible (but see below)
b. [$_{VoiceP}$ DP/PRO Voice.AGENT V DP.OBJ.ACC] LOAM impossible

- Simple VP complementation approaches are insufficient.
- Reasons:
  - Embedded morphology: The differences between Default Voice, Voice Matching, and Crossed Control are difficult to model.
  - Subject interpretation (section 3.2)
  - Unaccusativity puzzle (section 4.1)

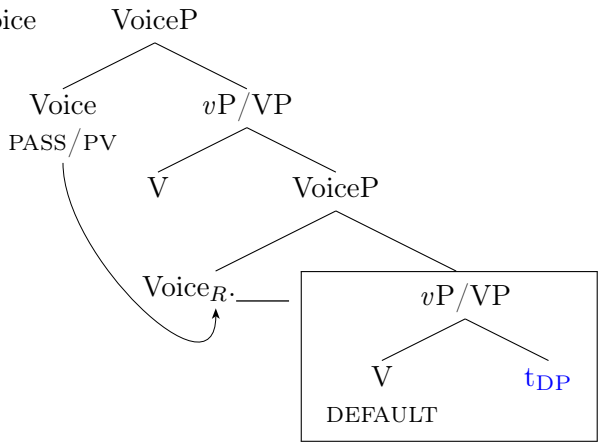
Voice restructuring (Wurmbrand and Shimamura 2017, Berger 2019)

- Mechanisms and configurations:
  - LOAM (possibly also other restructuring effects) involves a Voice dependency.
  - The dependency can go in either direction (depending on the language).
  - Either the matrix or the embedded Voice is underspecified (notated as Voice$_R$____) and acquires features from the other Voice.
  - Difference between Default Voice and Voice Matching: essentially a morphological difference how/when shared Voice is spelled out.

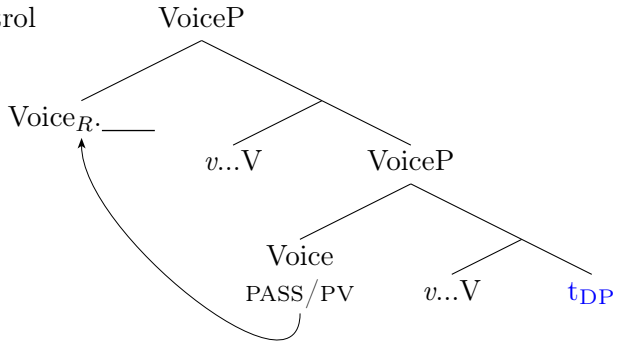
(9)



(10) Default Voice



(11) Crossed control



Distribution of (im)possible verb marking combinations [with Ileana Paul, Lisa Travis, Jozina vander Klok; see Davies 2014, Kurniawan 2013, Natarina 2018]

	V1	**V2**	**Agent high**	**Agent low**
A.	bare	PV	n/a	Indonesian, Balinese, Sundanese, Madurese
B.	bare	PASS	n/a	Indonesian, Balinese
C.	PASS	PASS	?Chamorro	Indonesian
D.	PV	PV	Isbukun Bunun	Sundanese, Madurese
E.	PASS	default	German, Japanese...	n/a
F.	PV	default AV	Mayrinax Atayal	n/a
G.	PASS	PV	??	*
H.	default AV	PASS/PV	n/a	*

Table 4: Distribution of LOAM

3.2 Subject interpretation

- In addition to the morphological properties, the presence of Voice in restructuring is motivated on interpretational grounds.
- Although there is no syntactic subject, the embedded predicate is obligatorily interpreted with a subject—obligatory argument sharing relation between the matrix and embedded predicates.

(12) Default Voice (long passive in German)

a. *Der Wagen und der Traktor wurden zu reparieren versucht.*
the.NOM car and the.NOM tractor were.PL to repair tried.
Lit. 'The car and the tractor were tried to repair.'
'They tried to repair the car and the tractor.'

b. tryer=repairer: Implicit matrix agent (IMPL) corresponds to understood embedded agent (u.SUBJECT).

c. DP.NOM IMPL Voice.PASS [u.SUBJECT V(oice).DEFAULT ~~DP.OBJ~~]

(13) Voice Matching (Isbukun Bunun) = (5a)

a. *Iliskinun-ku bunbun-a tu baliv-un.*
want.PV-1.SG.ACC banana-that.NOM TU buy-PV
'I wanted to buy the bananas.' [Wu 2013: 40, (10b)]

b. wanter=buyer: Implicit matrix agent (IMPL) corresponds to understood embedded agent (u.SUBJECT), embedded and matrix Voice have matching values.

c. DP.NOM IMPL Voice.PV [u.SUBJECT Voice.PV ~~DP.OBJ~~]

(14) Crossed Control in Indonesian

a. *rumah itu mau/ingin di-hancurkan oleh mereka*
house that want PASS-destroy by 3.PL
'They want to destroy that house.' [Polinsky and Potsdam 2008: 1630, (52a)]

b. #*kota ini mau/ingin di-hancurkan oleh api*
town this want PASS-destroy by fire
#'Fire wants to destroy this town.' [Polinsky and Potsdam 2008: 1625, (29b)]

c. destroyer=wanter: Understood matrix experiencer (u.SUBJECT) corresponds to implicit embedded agent (IMPL).

d. DP.NOM u.SUBJECT Voice.PASS/BARE [IMPL Voice.PASS ~~DP.OBJ~~]

		Voice restructuring		
Properties (when LOAM)	Raising	Voice Matching	Default Voice	Crossed Control
Embedded syntactic DP subject	no	no	no	no (only incorp.)
Matrix subject theta-role	no	yes	yes	yes
Matrix passive/PV	no	original	original	matched
Embedded passive/PV	possible	matched	no	original
Shared semantic subject	no	yes	yes	yes

Table 5: LOAM

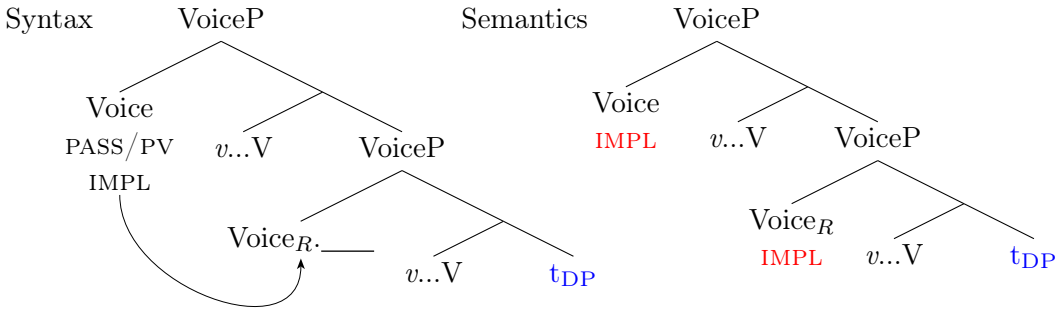
Further evidence for an embedded semantic subject will be provided in section 4.1.

3.3 Voice dependency and argument-sharing

- Voice restructuring involves the (literal) sharing of an argument (only one syntactic argument is underlyingly present, but it is 'distributed' over two predicates).

- We follow approaches in which the implicit argument in passive is syntactically represented as features on Voice (Legate 2010, 2012); see (15).
- Since passive/PV Voice carries the features of an agent argument, this information is transmitted as part of the Voice sharing in Voice restructuring (the specifics of the mapping between agent (phi) features and the semantic interpretation still need to be developed).

(15)



(16)
a. DP.NOM IMPL Voice.PASS/PV.IMPL [u.SUBJECT V(oice).DEFAULT ~~DP.OBJ~~] = DV
b. DP.NOM IMPL Voice.PASS/PV.IMPL [u.SUBJECT Voice.PASS/PV ~~DP.OBJ~~] = VM
c. DP.NOM u.SUBJECT Voice.BARE/PASS/PV [IMPL Voice.PASS/PV.IMPL ~~DP.OBJ~~]= CC

(17) DP.NOM: A–movement (Wurmbrand 2001, Polinsky and Potsdam 2008, Chen 2010, Berger 2019, Kroeger and Frazier 2020, Wu 2013)

(18) Matrix Voice — emb. Voice: Voice dependency (Wurmbrand and Shimamura 2017)

(19) IMPL — u.SUBJECT: lexical/semantic (Chierchia 1983, 1984a,b, Wurmbrand 2001, 2002, Polinsky and Potsdam 2008, Grano 2015); clause union, incorporation (Aissen and Perlmutter 1976, 1983, Sato and Kitada 2012, Kroeger and Frazier 2020); Voice dependency (Wurmbrand and Shimamura 2017)

But that is still not enough...

4 Synthesis in Voice restructuring

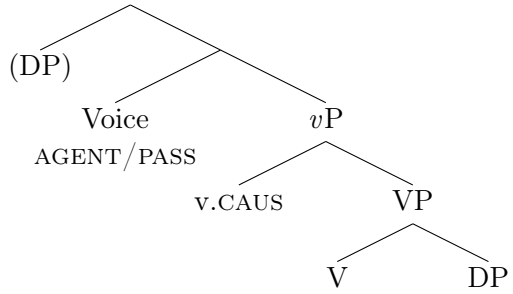
4.1 The unaccusativity puzzle

Causative–inchoative alternation

(20)
a. *Nova versenkt den Frachter.*
Nova sinks the.ACC freighter.
'Nova is sinking the freighter.' Causative
b. *Der Frachter versinkt.*
The.NOM freighter sinks.
'The freighter is sinking.' Inchoative
c. *Der Frachter wurde versenkt / *versunken.*
The.NOM freighter was sunk.CAUS / *sunk.INCH.
'The freighter was sunk.' Passive causative; *Passive inchoative

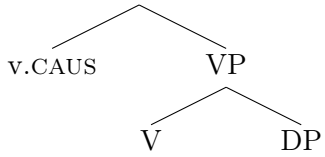
- Causative: VoiceP; Inchoative: vP
- Passive: requires a VoiceP; raising, unaccusatives can thus not be passivized.

(21) Causative



versenken

Inchoative



versinken

Back to LOAM

- Raising and Voice restructuring show the opposite distribution regarding causatives/inchoatives:
  - Default Voice configurations with LOAM cannot embed inchoatives (or other unaccusatives).
  - Raising configurations with LOAM cannot embed causatives.

(22) Voice restructuring

a. *Der Frachter wurde zu versenken / *versinken versucht.*
The.NOM freighter was to sink.CAUS / *sink.INCH tried.
'People tried to sink the freighter.' [Pitteroff 2014: 235, (31a)]

b. *Mado-ga {sim-e / *sim-ar-i} -tuzuke-rare-tei-ta.*
window-NOM {close-CAUS / *close-INCH-EV} -continue-PASS-PROG-PAST
'They kept the window closed.' [Wurmbrand and Shimamura 2017: 185, (11b)]

c. *was tried/continued* [Voice$_R$.___ V DP.OBJ] Causative: VoiceP

d. **was tried/continued* [V DP.OBJ] *Inchoative: vP/VP

(23) Raising

a. *Der Frachter scheint zu *versenken / versinken.*
The.NOM freighter seems to *sink.CAUS / sunk.INCH
'The freighter seems to be sinking.'
Possible (irrelevant) Non-LOAM interpretation for versenken:
Subject raising with dropped object: 'The freighter seems to be sinking something.'

b. **seemed* [Voice$_R$.___ V DP.OBJ] *Causative: VoiceP

c. *seemed* [V DP.OBJ] Inchoative: vP/VP

(24) Raising (embedded passive)

a. *Der Frachter scheint versenkt / *versunken zu werden.*
The.NOM freighter seems sink.CAUS / sunk.INCH to become
'The freighter seems to be sinking/to be sunk.'

b. *seemed* [Voice.PASS.IMPL V DP.OBJ] Causative: VoiceP

c. *passive of inchoative *Inchoative: vP/VP

- Raising and Voice restructuring thus show (almost) complementary distribution:
  - Voice restructuring LOAM requires an embedded VoiceP (Causative, *Inchoative), which has to be underspecified. Question: Why is the inchoative version impossible?
  - Raising does not allow an underspecified VoiceP (Inchoative, *Causative), but allows a passive VoiceP. Question: Why is the causative version impossible?
  - If VoiceP indicates that there is a semantic subject, the generalization is that Voice restructuring requires an embedded subject, whereas Raising only allows one in passive.

		Voice restructuring		
Properties (when LOAM)	Raising	Voice Matching	Default Voice	Crossed Control
Embedded syntactic DP subject	no	no	no	no (only incorp.)
Matrix subject theta-role	no	yes	yes	yes
Matrix passive/PV	no	original	original	matched
Embedded passive/PV	possible	matched	no	original
Shared semantic subject	no	yes	yes	yes

Table 6: LOAM

4.2 Synthesis

- Restrictions from both, matrix and embedded predicates, have to be satisfied.
- Choices in one clause affect the properties of the other clause: depending on the composition of the complement, the matrix verb will be either Raising or Voice restructuring.

	Underspecified Voice_{R}.___ (caus)	Fully valued complement (inch, caus, pass)
Voice Restructuring	✓	* (restrictions from above)
Raising	* (restrictions from below)	✓

- Illustration of the pattern again: matrix *begin*, which can be either Raising or Voice restructuring.

(25) a. *Der Baum wurde zu fällen / *fallen begonnen.*
The.NOM tree was to fall.CAUS / *fall.INCH begun
'People began to cut down the tree.' [Pitteroff 2014: 236, (31b)]
Voice restructuring

b. *Der Baum beginnt zu *fällen / fallen*
The.NOM tree begins to *fall.CAUS / fall.INCH
'The tree is beginning to fall.' Raising

c. *Der Baum beginnt gefällt / *gefallen zu werden*
The.NOM tree begins fall.CAUS.PCPT / fall.INCH.PCPT to become
'The tree is beginning to fall.' Raising

- When matrix verb is passive, it cannot be Raising (unaccusatives do not passivize), but must be Voice restructuring.
- When the surface subject is not animate, non-passive *begin* is non-thematic, hence Raising.

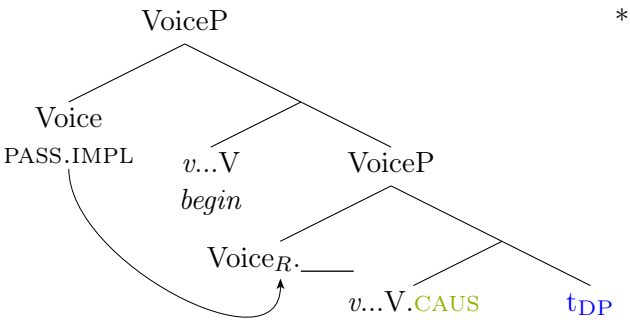
4.2.1 Causatives: restrictions from below

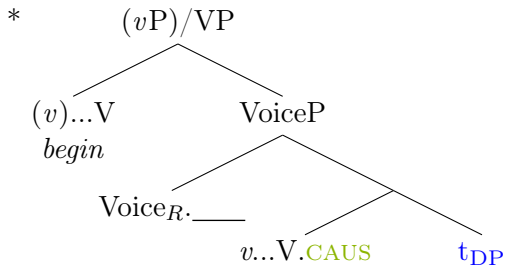
(25a) Der Baum wurde zu fällen / *fallen begonnen.
The.NOM tree was to fall.CAUS / *fall.INCH begun
'People began to cut down the tree.' [Pitteroff 2014: 236, (31b)]

(25b) *Der Baum beginnt zu *fällen / fallen*
The.NOM tree begins to *fall.CAUS / fall.INCH
'The tree is beginning to fall.' Raising

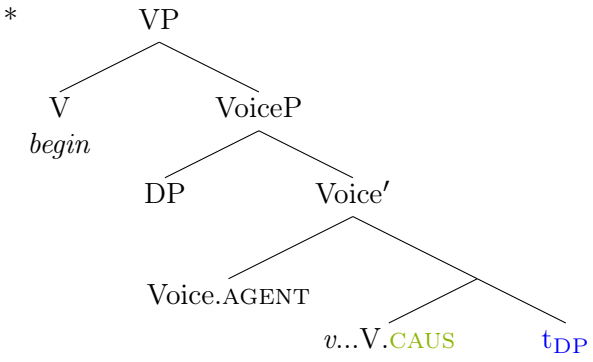
- Voice restructuring
  - Matrix Voice.PASS encodes the implicit matrix agent.
  - Embedded Voice$_R$.___ needs to be licensed, which can be done by the matrix passive Voice.
  - Argument-sharing as a result of Voice-sharing.
- Raising
  - Matrix verb is Raising (*the tree* cannot be the thematic subject of *begin*).
  - There is no matrix Voice (Raising=unaccusative).
  - Embedded Voice$_R$.___ cannot be licensed.
  - A full VoiceP would be possible in principle, but this would then exclude LOAM (only the subject could raise).

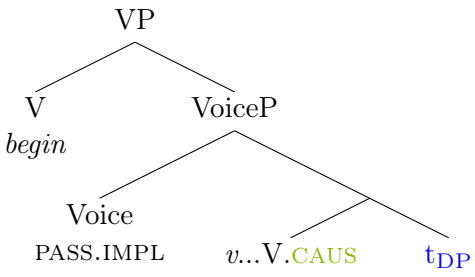
(26) Voice restructuring: (22), (25a) Raising: (23), (25b); * underspecified Voice





(27) Raising: (23), (25b); * full VoiceP & LOAM Raising: (25c); embedded passive





(25c) *Der Baum beginnt gefällt / *gefallen zu werden*
The.NOM tree begins fall.CAUS.PCPT / fall.INCH.PCPT to become
'The tree is beginning to fall.' Raising

- Raising
  - Embedded passive: Voice is a fully specified, but no DP is merged.
  - Passive Voice does not need to be licensed and does not block LOAM.

4.2.2 Inchoatives: Restrictions from above

(25) a. *Der Baum wurde zu fällen / *fallen begonnen.*
The.NOM tree was to fall.CAUS / *fall.INCH begun
'People began to cut down the tree.' [Pitteroff 2014: 236, (31b)]

b. *Der Baum beginnt zu *fällen / fallen*
The.NOM tree begins to *fall.CAUS / fall.INCH
'The tree is beginning to fall.' Raising

c. *Der Baum beginnt gefällt / *gefallen zu werden*
The.NOM tree begins fall.CAUS.PCPT / fall.INCH.PCPT to become
'The tree is beginning to fall.' Raising

- (25c): The inchoative version is excluded due to the lack of Voice—unaccusatives cannot passivize.
- Main puzzle: Why can a Voice restructuring complement not be an inchoative Voice-less *v*P/VP, whereas it can (must) be in Raising?
- Structurally, nothing would be going wrong: LOAM would be possible in (25a), as it is in (25b).
- Something requires an embedded Voice$_R$.___ in Voice Restructuring.
- This cannot be a c-selectional restriction of *begin*, since the smaller structure is possible in Raising.

(28) Voice restructuring: (22), (25a) Raising: (23), (25b)

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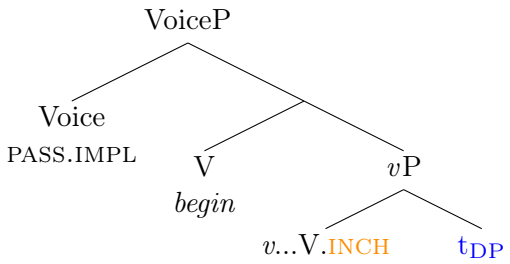
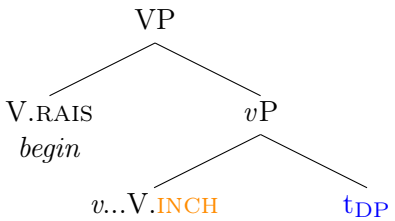


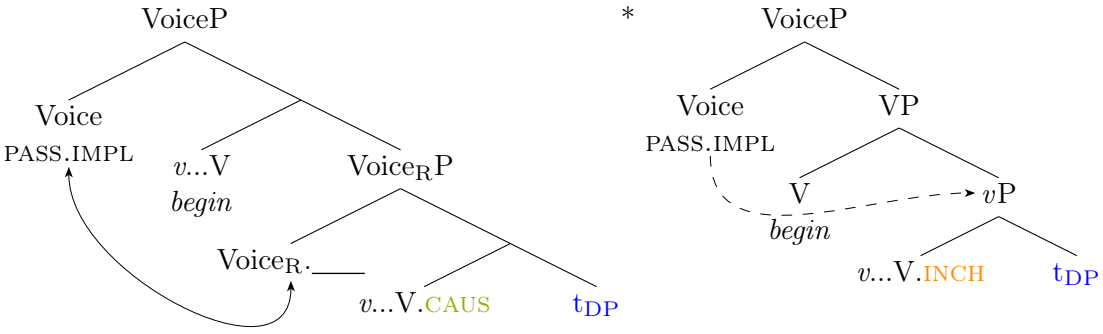


Restrictions from above (preliminary)

- Voice restructuring predicates do not just license lower Voice, they need to obligatorily do so, and "give" their Voice features to an embedded element (to establish argument-sharing).
- A Voice restructuring predicate (in contrast to a Raising predicate) needs to look down for an argument to share.

- Raising verbs have no arguments, hence are free to combine with any type of complement (that meets the restrictions from below).
- In this sense, the type of complement restricts the type of matrix predicate.

(29) Voice restructuring: (22), (25a)



Against pure selection, and pure semantic control

- *begin* in German can combine with any type of complement:
  - *v*P/VP: triggers LOAM with a matrix Raising verb.
  - Underspecified Voice$_R$.____: triggers LOAM with a matrix Voice restructuring verb.
  - Voice.PASS: triggers LOAM with a matrix Raising verb.
  - Full VoiceP with an overt DP subject: triggers subject raising, but no LOAM.
  - Full VoiceP with PRO: triggers some size restructuring effects, but no LOAM.
  - Full CP: no restructuring effects.
- To solve the unaccusativity puzzle, a selectional restriction (e.g., *begin* must select VoiceP) is not motivated.
- Indeed, "selection" appears to go in the other direction—the composition of the embedded complement restricts the matrix predicate.
- A pure semantic approach to the required argument-sharing from above also does not seem to be sufficient either: Why couldn't there be an argument "added" in (29) (i.e., the inchoative turned into a causative) in the semantics?
- Instead: the syntax (whether there is a VoiceP or not) restricts the semantics, and the argument-sharing requirement is sensitive to the syntax.

5 Summary and Conclusion

Generalizations:

- In Voice restructuring LOAM, the complement must contain an unsaturated argument position that can be associated with the matrix "controller".
- In Raising LOAM, the complement cannot contain any unsaturated argument positions or unvalued Voice features.

(30) A mini-typology of LOAM:

a.	Voice.PASS/PV *try, want* [Voice$_R$.___ V DP.OBJ]	Default Voice, Voice Matching
b.	Voice$_R$.___ *try, want* [Voice.PASS/PV V DP.OBJ]	Crossed Control
c.	*seem, begin* [(Voice.PASS/PV) V DP.OBJ]	Raising
d.	[DP/PRO Voice.AGENT V DP.OBJ.ACC]	LOAM impossible

Some open questions

- Empirical: Distribution of Voice in other types of Voice restructuring
- Formalization of the argument-sharing mechanism

Main things to take away

- Synthesis in complementation is also visible in Voice restructuring.
- A unified account to Voice restructuring is possible if two mechanisms are involved: a Voice dependency (which can go in either direction), and an argument-sharing mechanism which may be semantic, but it still needs to see the syntax.

6 Appendix—How many constructions?

- The classification is not always straightforward.
- One difficulty lies in the origin of the Voice properties and the subject (interpretation). Since the values and interpretation are shared, it is not always possible to tell where they originate.

Matrix	Embedded	Construction
original passive/PV	dependent Voice: default	Default Voice
original passive/PV	dependent Voice: passive/PV	Voice Matching
dependent voice: bare	original passive/PV	Crossed Control
dependent voice: passive/PV	original passive/PV	Crossed Control
original passive	original passive	Control (may not be possible)

Illustration

(31) *Perampok di-coba* [*di-tangkap oleh polisi*]
thief PASS-try [PASS-catch by police]
'The police tried to catch the thief.' [Berger 2019: 70, (34)]

a. **Crossed Control** (indicated):
Embedded passive original (police=embedded agent), matrix passive/subject are shared
'The police tried to catch the thief.'

b. **Voice Matching**:
Matrix passive original (police=matrix agent), embedded passive/subject are shared
'The police tried to catch the thief.'

c. **Double original passive**:
Lit. 'The thief was tried to be caught by the police.'
Two original implicit agents; if they are the same (some form of control):
'The police tried to catch the thief.'

d. **No 'regular' control**
Typically, the non-Crossed Control interpretation refers to configurations where the initial DP is interpreted as the matrix subject (here *the thief* as the tryer). But it is not clear how the initial DP could ever be the agent of *try*. For this, matrix passive would have to be vacuous and copied from the embedded Voice, without sharing of the lower agent. Thus in any account, it seems, the following is not predicted to be possible.
*'The thief tried to be caught by the police.'

- Another difficulty concerns the determination of syntactic values when the morphology is restricted. In Crossed Control, it is often/usually the case that the matrix verb is bare (does not show overt voice marking in any context). We will suggest that there is nevertheless voice matching in these contexts.

- Finally, a question is whether Crossed Control should be seen as a separate phenomenon.
- Kroeger and Frazier (2020) suggest a complex predicate (*Clause union*) approach, where the argument structures of the matrix and embedded predicates are merged, and passive applies to the entire unified argument structure. If morphology is not marked on the higher verb, as in (7), a Crossed Control interpretation could be seen as the result of the shared argument structure and the realization of passive only on the lower verb.
- Possible issues:
  - Presence of subject clitic in the lower predicate in (7a) indicates separate argument structures.
  - Overgeneration? E.g., how are G and H in Table 4 excluded?
  - See next section (Polinsky and Potsdam 2008) for arguments against complex syntactic V-V predicates in Crossed Control.
  - Restructuring involves at least VP complementation and separate events (see Wurmbrand 2001, 2007 for general issues for complex predicate formation).

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