

# From Prolepsis to Hyperraising

Susi Wurmbrand

In collaboration with Iva Kovač and Magdalena Lohninger

University of Vienna, October 2021

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## 1 Introduction

**1.** The object of study

- (1) a. \*Nova seems (that) likes salad.  
b. I believe of Nova that (\*she) likes salad.

- Case, agreement, and A-movement dependencies (Raising-to-Subject/Object) spanning across finite clause boundaries—known as: Hyperraising, Long-distance agreement (LDA)
- Prolepsis
- Moving away from English(-like languages), the distinction between the two configurations is not always easy to draw.
- Diagnostics often cannot be compared directly.

**2.** The empirical domain  $\mathfrak{A}$

- (2) Domain  $\mathfrak{A}$ : configurations in which a matrix A-element (argument (position), Case assigner, agreement head) is in an obligatory dependency (Agree, movement, binding, predication) with an element (operator, argument (position), obligatorily bound pronoun, gap) in an embedded finite clause.
- Hyperraising et al., *and* Prolepsis, since the pronoun dependency is obligatory (in principle also control, but we set that aside in this talk).
  - Not: *wh*-movement, pure topicalization, relativization, since the matrix element is in an  $A'$ -dependency (unless it is fed by a prior  $\mathfrak{A}$ -dependency).
  - Not: variable binding (from A-positions), since it is not obligatory (vs. Prolepsis); *Every bird is convinced that her owner is lazy*.
  - Note:  $\mathfrak{A}$  configurations themselves are not obligatory, in fact, they appear to always be optional (cf. *I believe that Nova likes salad*). But in these configurations, some  $\mathfrak{A}$ -dependency is obligatory.

**3.** Characterizing properties

- Productivity
- Island sensitivity
- A-Minimality
- Semantic restrictions

**4.** Main conclusions

- In contrast to previous approaches, we show that the distinction between Prolepsis and Hyperraising/LDA is not binary but a continuum.
- Different values of the characterizing properties yield 5 types of constructions.
- Theoretical implementation:
  - Different base-positions of DP- $\mathfrak{A}$ .
  - Properties of C, which may bundle certain properties.
  - Different probing mechanisms.

**5.** The empirical landscape of  $\mathfrak{A}$

$\mathfrak{A}$ configurations	①	②	③	④	⑤
Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
Restricted matrix predicates (c-/l-selection)	no	yes	yes	yes	yes
(Apparent) Improper move- ment/Agree violation	no	yes	yes	yes	yes
Island sensitivity	no	no	yes	yes	yes
Connectivity effects	no	no	yes	yes	yes
A-Minimality (highest A-DP)	no	no	no	yes	yes
Semantic restrictions of DP. $\mathfrak{A}$	yes	yes	yes	yes	no
Type of restrictions of DP. $\mathfrak{A}$	referential	topic	topic/MS	topic	none
Languages	Buryat English German Japanese Korean Madurese Mongolian Nez Perce Passamaquoddy Puyuma Romanian ...	BP	Japanese Korean Tsez Passamaquoddy Turkish	Romanian Turkish	BP Buryat Mongolian Nez Perce Zulu Uyghur

BP: Brazilian Portuguese

LDA: Long-distance agreement

MS/O: Major Subject/Object

SOR: Subject-to-Object Raising

RtO: Raising-to-Object

RtS: Raising-to-Subject

## 2 Prolepsis: ①

### 1. General description

- Configurations in which a DP in the matrix clause (often introduced by a preposition) **obligatorily** corresponds to a coreferent pronominal or variable in the embedded clause (in some cases, a pronoun may be missing if it can be understood implicitly).
- Proleptic DP: DP.ᵗ
- The bound element is not restricted to certain positions; can have any grammatical function.

(3) .... V DP.ᵗ [<sub>CP</sub> OP .... pronoun/gap ]

a. Nova knows *about Danny* that Leo would bring #(him) salad soon.

b. Sheryl thought *about/of Tim* that the police would never catch him.

[Davies 2005: 654, (34a)]

c. Danny knows *about Nova* that she likes salad.

d. Danny knows *about Nova* that her owner likes salad.

e. Danny knows *about Nova* that Leo adores her.

f. Danny knows *about Nova* that Leo gave her salad.

### 2. Properties of Prolepsis (Davies 2005, Horn 2008, Salzmann 2017)

- Prolepsis is productive.
  - It is possible in basically any context where a full propositional CP could occur (which, at least in German, can be associated with a verb, adjective or noun).
  - It is not restricted to specific matrix predicates (but there may be Case restrictions if DP.ᵗ receives structural ACC in a language).
  - DP.ᵗ is in the matrix clause, but does not receive a theta-role from the matrix verb; e.g., it is possible with verbs like *seem* in German (but see below for Nez Perce, where the DP.ᵗ appears to have argument status).

(4) *Jeder hat einen Traum, von dem es scheint, [ dass er nie in Erfüllung geht ]*.

everyone has a dream of which.DAT it seem.3SG [ that it never in fulfilment

go.3SG ]

‘Everyone has a dream of which it seems that it never becomes true.’

German

[Salzmann 2017: 5, (8d); corpus example]

- The DP.ᵗ/OP–pro(noun) dependency is unbounded and not sensitive to islands (see section 3.2 for further examples).

(5) a. I believe *about Richard* [that he and Linda are in trouble].

[Davies 2005: 659, (5ab)]

b. I believe *about Atin* that [the story that she captured the thief is untrue].

[Davies 2005: 659, (54b)]

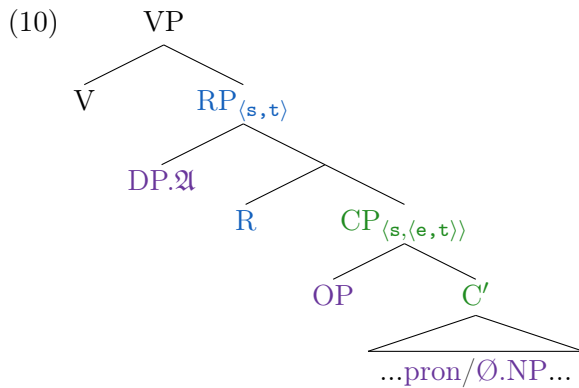
- The DP.2 shows semantic restrictions.
    - It must be referential, specific, or generic.
    - Opaque idioms are typically excluded (this property is gradient).
- (6) a. I know *of firemen* that *they* are available. only generic  
 b. Nova said *of a secretary* that she is looking for *him*. only specific
- (7) a. *Von Feuerwehrmännern weiß ich, dass sie verfügbar sind.*  
*of firemen.DAT know.1SG I that they available be.3SG*  
 ‘Of firemen, I know that they are available.’ German  
 (\*existential; OK generic) [Salzmann 2017: 15, (30b)]
- b. *Von einer neuen Sekretärin sagte Peter, dass er sie sucht.*  
*of a.DAT new secretary said.3SG Peter that he her seek.SUBJ.3SG*  
 ‘Of a new secretary, Peter said he was looking for her.’ German  
 ( $\exists > \text{seek}$ ; \*seek  $> \exists$ ) [Salzmann 2017: 15, (30c)]
- (8) a. *Mary hi-ckaaw-na ’etke pro hi-neki-se* [   
 Mary.NOM 3SUBJ-be.scared-TAM because 3SG 3SUBJ-think-TAM [   
*naaqc-pa-ma lepe’eyepu-pe-me hi-peeleeey-ne* ] .   
*one-from-PL.NOM twins-from-PL.NOM 3SUBJ-go.missing-TAM* ]   
 ‘Mary got scared because she thought one of the twins was missing.’ Nez Perce  
 Context: One twin is missing; Mary does not know which of the twins.   
[Deal 2018: 631, (22)]
- b. *Mary hi-ckaaw-na ’etke pro naaqc-pa-ma-na pee-nek-se* [   
 Mary.NOM 3SUBJ-be.scared-TAM because 3SG *one-from-PL-ACC* 3/3-think-IPFV [   
*pro hi-peeleeey-n-e* ] .   
 3SG 3SUBJ-go.missing-3P-REM.PST ]   
 ‘Mary got scared because she thought that one of them was missing.’ Nez Perce  
 # In a context where Mary does not know which specific twin is missing.   
[Deal 2018: 631, (24)]
- (9) a. #Kelsey believed *about the cat* that *it* would be out of the bag. [Davies 2005: 655, (41b)]  
 b. #John believes *of the shoe* that *it’s* on the other foot. [Takano 2003: 822, (81a)]  
 c. \*John believes *of advantage* that *it* was taken of the workers. [Takano 2003: 822, (82b)]  
 d. %*Die Rede, von der ich sagte, dass er sie geschwungen habe.*  
*the speech of which.DAT I said.1SG that he it swing.PTCP have.SBJV.3SG*  
 ‘The speech of which I said he gave it.’ [Salzmann 2017: 11, (26a)]

### 3. Accounts

- Salzmann (2017): DP.2 is the subject of a predicative CP; a propositional CP is turned into a predicate by a base-generated operator in Spec,CP.
- Essential dependency: predication between DP.2 and CP.
- Landau (2011): Semantic restrictions are the result of predication: only referential elements may saturate predicates (which excludes non-referential idiom parts as DP.2s).

- Takano (2003): DP.⌘ may be a *major object*, aboutness condition, speculates (p. 823) “matrix predicate selects a ‘theme-rheme relation,’ so that it selects a pair of a proposition and a theme of the proposition”.
- Yoon (2007): DP.⌘ in Korean is subject to a *major subject* requirement; similarly leads to specificity and referentiality restrictions, and excludes DP.⌘ as part of opaque idioms.

4. Our approach: follows the above insights, with minor modifications



⌘	Prolepsis ①	Properties
A	Restricted matrix predicates Complement of V	no RP
B	Island sensitivity Connectivity effects	no no (only via pronoun)
C	Origin of DP.⌘ above emb. C Movement within emb. CP DP.⌘ base position	yes no Spec,RP
D	A-Minimality (highest A-DP) Semantic restrictions of DP.⌘	no referential, specific, generic

A: R(elator)P(phrase) (RELATOR head; see den Dikken 2006, 2017)

- R relates its specifier and complement via predication.
- Spec,RP: A-position (prepositions are vacuous)
- Propositional complementation (Wurmbbrand and Lohninger 2019): No c-selection, only semantic requirement that V combines with a semantic proposition (typically a CP).
- Generally, verbs selecting a proposition can combine with RP (modulo possible language-specific restrictions).
- Both RP and a full CP without an operator are propositions—Prolepsis is always optional.

B: No movement from embedded clause

- DP.⌘ is base-generated between matrix and embedded clause.
- Operator is base-generated in embedded Spec,CP, which turns the CP into a predicate.
- Operator identifies with the pronoun/gap via an unselective (unbounded) binding-like relation.
- No movement within the embedded clause, hence no island-sensitivity.
- Connectivity: Prolepsis allows some (apparent) reconstruction effects. As shown in Salzmann 2017, these can be attributed to the presence of an underlying full NP structure of pronouns in Prolepsis (similar to the view of pronouns as definite descriptions in Elbourne 2001, Sauerland 2013). Distinguishing reconstruction effects that arise through the refined structure of pronouns from true reconstruction effects of DP.⌘ allows for a more consistent picture of this property.

C: No movement (this will become relevant later)

D: Semantic restrictions are imposed by R (the predication relation) and may be related to further movement in the matrix clause.

5. Possible further distinctions

- There is no uniformity across languages (for any  $\mathfrak{A}$  construction) regarding the position of DP. $\mathfrak{A}$  with respect the matrix verb.
  - In some languages it is obligatorily below the verb, in some above it, in others flexible.
  - In all languages, independently of the overt position, it appears to take scope over the matrix verb, which may, however, be related to the semantic restrictions (referential, specific interpretations).
  - Nothing in our account requires nor prohibits further overt or covert A-movement of DP. $\mathfrak{A}$ , which reflects the cross-linguistic options (e.g., the word order differences between Madurese and Puyuma; [Chen 2018](#)) and is orthogonal to the typology of  $\mathfrak{A}$ .
- Nez Perce
  - Nez Perce is the only language we found so far where Prolepsis is highly restricted.
  - CC $\mathfrak{A}$  “occurs with all and only verbs that license a matrix *res* object position within VP” ([Deal 2017](#): 8).
  - Possible only with *think* and *know* ([Deal 2018](#): 633), prohibited with all other verbs (e.g., *say/tell*) ([Deal 2017, 2018](#)).
  - [Deal \(2018\)](#): suggests that Prolepsis involves a true semantic matrix argument (which is different from other types of Prolepsis).
  - Since Nez Perce Prolepsis matches all other properties of Prolepsis, we still include it here and assume the same basic RP configuration.
  - However, in addition we (preliminarily) suggest, following [Deal \(2018\)](#), that DP. $\mathfrak{A}$  must move to a *res* argument position from Spec,RP in Nez Perce, which essentially derives Deal’s structure from the general Prolepsis structure with one short movement step.

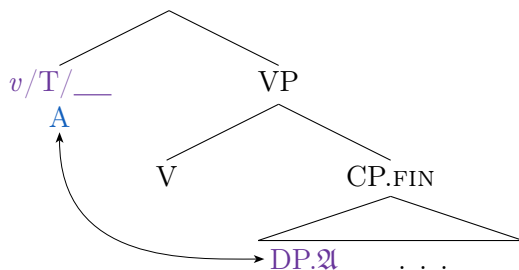
6. Summary

$\mathfrak{A}$		①	②	③	④	⑤
	Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A	Restricted matrix predicates (c-/l-selection)	no	yes	yes	yes	yes
	(Apparent) Improper move- ment/Agree violation	no	yes	yes	yes	yes
	Complement of V	RP	CP,R			
B	Island sensitivity	no	no	yes	yes	yes
	Connectivity effects	no	no	yes	yes	yes
C	Origin of DP. $\mathfrak{A}$ above emb. C	yes	yes	no		
	Movement within emb. CP	no	no	yes		
	DP. $\mathfrak{A}$ base position	Spec,RP	Spec,CP	Gap position		
C	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	Semantic restrictions of DP. $\mathfrak{A}$	yes	yes	yes	yes	no
	Type of restrictions of DP. $\mathfrak{A}$	referential	topic	topic/MS	topic	none

### 3 Cross-clausal $\mathfrak{A}$ -dependencies [CC $\mathfrak{A}$ ]: ②–⑤

- There are four types of  $\mathfrak{A}$ -constructions which, in contrast to Prolepsis, all involve a concrete A-dependency (Case dependency, agreement with a matrix head, or A-movement) that crosses a finite clause boundary (recall that in Prolepsis, DP. $\mathfrak{A}$  is base-generated above the embedded CP).
- The four types of CC $\mathfrak{A}$  share some properties (A), but they also differ in terms of locality (B, C) and the semantic properties of the DP. $\mathfrak{A}$  (D).

(11) ②-⑤ (to be revised below)



- (12) a. *Os meninos parecem [ que eles viajaram ontem ]*.  
 the boys seem.3PL [ that they traveled.3PL yesterday ]  
 ‘The boys seem to have traveled yesterday.’ [Martins and Nunes 2010: 145, (3b)]  
 Brazilian Portuguese High Topic: ②
- b. *Cheli-nun Yenghi-lul [ yenglihay-ss-ta-ko ] mitnun-ta*.  
 Cheli-TOP Yenghi-ACC [ smart-PST-DECL-COMP ] believe-DECL  
 ‘Cheli believes Yenghi to have been smart.’ [Yoon 2007: 616, (1b)]  
 Korean MS RtO: ③
- c. *eni-r [ uż-ā magalu b-āc’ru-ti ] b-iy-xo*.  
 mother-DAT [ boy-ERG bread.III.ABS III-eat-PST.PRT-NMLZ ] III-know-PRES  
 ‘The mother knows the boy ate the bread.’ [Polinsky and Potsdam 2001: 584, (1b)]  
 Tsez LDA: ③
- d. *L-am mirosit pe Victor [ că e fericit ]*.  
 him-have.1SG smelled DOM Victor [ that is.3SG happy ]  
 ‘I figured out that Victor is happy.’ [Alboiu and Hill 2016: 256, (1d)]  
 Romanian RtO: ④
- e. *Os meninos parecem [ que viajaram ontem ]*.  
 the boys seem.3PL [ that traveled.3PL yesterday ]  
 ‘The boys seem to have traveled yesterday.’ [Martins and Nunes 2010: 145, (3a)]  
 Brazilian Portuguese Hyperraising: ⑤
- f. *ngi-ya-m-funa uSipho [ (ukuthi) apheke iqanda ]*.  
 1SG-YA.1.O-want AUG.1.Sipho [ (that) 1.SBJ.cook AUG.5.egg ]  
 ‘I want Sipho to cook an egg.’ [Halpert and Zeller 2015: 476, (2)]  
 Zulu RtO: ⑤
- g. *uZinhle u-bonakala [ ukuthi u-zo-xova ujeqe ]*.  
 AUG.1Zinhle 1S-seem [ that 1S-FUT-make AUG.1steam.bread ]  
 ‘It seems that Zinhle will make steamed bread.’ [Halpert 2019: 124, (3b)]  
 Zulu Hyperraising: ⑤



- h. *'Aayat-onm hi-nees-nek-se [ watiisx mamay'ac hi-pa-paay-no' ]*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ 1.day.away children.NOM 3.SBJ-S.PL-arrive-FUT ]  
 'The woman thinks the children will arrive tomorrow.' [Deal 2017: 6, (13)]  
 Nez Perce RtO: ⑤

### 3.1 Distinction A: Productivity and basic structure of CC $\mathfrak{A}$

#### 1. Prolepsis ① vs. CC $\mathfrak{A}$ ②–⑤

$\mathfrak{A}$	①	②	③	④	⑤
Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A					
Restricted matrix predicates (c-/I-selection)	no	yes	yes	yes	yes
(Apparent) Improper move- ment/Agree violation	no	yes	yes	yes	yes
Complement of V	RP	CP,R			
B					
Island sensitivity	no	no	yes	yes	yes
Connectivity effects	no	no	yes	yes	yes
Origin of DP. $\mathfrak{A}$ above emb. C	yes	yes		no	
Movement within emb. CP	no	no		yes	
DP. $\mathfrak{A}$ base position	Spec,RP	Spec,CP		Gap position	
C					
A-Minimality (highest A-DP)	no	no	no	yes	yes
D					
Semantic restrictions of DP. $\mathfrak{A}$	yes	yes	yes	yes	no
Type of restrictions of DP. $\mathfrak{A}$	referential	topic	topic/MS	topic	none

#### 2. Restricted distribution

- The class of CC $\mathfrak{A}$  shows restrictions within CC $\mathfrak{A}$  languages and variation across languages.
- For instance, in many languages speech verbs like *say* are not compatible with CC $\mathfrak{A}$ . However, this is not generally the case—Buryat, Mongolian, Uyghur allow CC $\mathfrak{A}$  also in these contexts.
- Note: In many languages, the possibility of DP. $\mathfrak{A}$  to be interpreted as part of an embedded idiom is indicative of CC $\mathfrak{A}$  and contrasts with Prolepsis (see section 3.2).

- (13) a. *Dorj chang-aar [ Bat-iin nüd(-iig) oree deer-ee gar-san gej ]*  
 Dorj loud-INSTR [ Bat-GEN eye(-ACC) top on-REFL.POSS climb-PST COMP ]  
*khel-sen.*  
 say-PST  
 'Dorj said loudly that Bat was very surprised.'  
 (lit.: 'Dorj said loudly that Bat's eyes climbed on top of themselves.') Mongolian  
 [Fong 2018: 4, (11)]
- b. *Tursun [ toqquz qiz-ning tolghaq-ni teng kel-di ] di-di.*  
 Tursun [ nine girl-GEN labor-ACC together arrive-PAST.3 ] say-PAST.3  
 'Tursun said that times are hard.'  
 Uyghur  
 [Shklovsky and Sudo 2014: 388, (15b)]

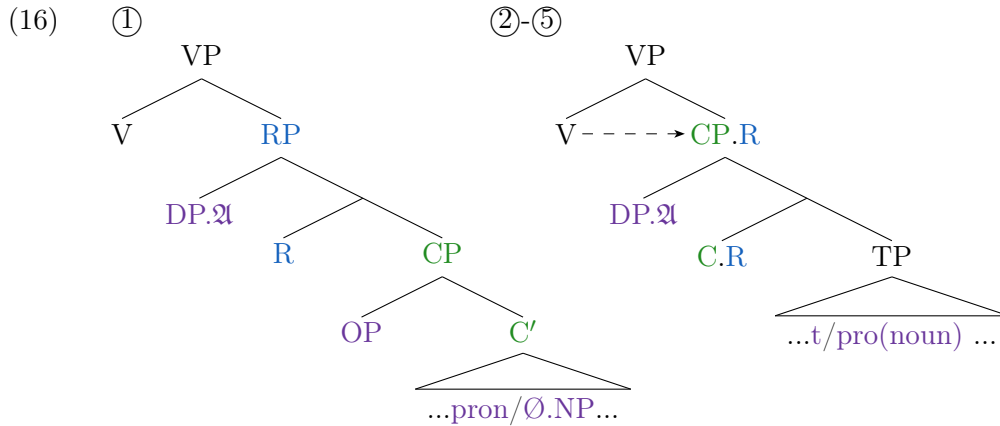
- (14) a. *'Aayat-onm mamay'as-na hi-nees-nek-se* [CP *watiisx pro/t*  
 woman-ERG children-ACC 3.SBJ-O.PL-think-IPFV [CP 1.day.away *pro/t*  
*hi-pa-paay-no'* ].  
 3.SBJ-S.PL-arrive-FUT ]  
 'The woman thinks that the children will arrive tomorrow.' Nez Perce  
 [Deal 2017: 4, (7)]
- b. *'Aayat-onm hi-nees-nek-se* [ *watiisx mamay'ac*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ 1.day.away children.NOM  
*hi-pa-paay-no'* ].  
 3.SBJ-S.PL-arrive-FUT ]  
 'The woman thinks the children will arrive tomorrow.' [Deal 2017: 6, (13)]
- c. *Angel-nim Harold-ne pee-Ø-ne* [ *pro hi-paaytoq-a* ].  
 Angel-ERG Harold-ACC 3/3-say-TAM [ 3SG 3SUBJ-return.home-TAM ]  
 Impossible reading: Angel said about Harold that he went home.  
 Possible reading: Angel told Harold that *pro* went home. [Deal 2018: 633, (30)]

- Cross-linguistic tendency: CC $\mathfrak{A}$  verbs involve verbs of knowledge, belief, and perception.
- Illustration Japanese ③ (for a summary of claims for other languages, see the Appendix):
  - The literature involves some conflicting claims, which may, at least in part, be due to the fact that Prolepsis and RtO are not always clearly distinguishable (see also Goto 2014).
  - Hoji (1991), Kobayashi and Maki (2001, 2002): DP. $\mathfrak{A}$  constructions are highly productive; can basically occur with any CP-complement; are not lexically selected.
  - Horn (2008), K. Shimamura, p.c.: There are restrictions, but the class is clearly larger than English ECM (in Horn's Appendix, 276 verbs are listed).
  - Once an RtO property is used, many verbs are not allowed anymore (note: the property of Case stacking is not accepted by everyone).

- (15) a. *Taroo-ni-dake(-ga) eigo-ga hanas-e-ru.*  
 Tari-DAT-only-NOM English-NOM speak-can-PRS  
 'Only Taro can speak English.' [K. Shimamura, p.c.]
- b. *Taroo-wa Hanako(?-ni)-dake-o* [ (*t*) *eigo-ga hanas-e-ru-to* ]  
 Taro-TOP Hanako(?-DAT)-only-ACC [ (*t*) English-NOM speak-can-PRS-COMP ]  
*omot-tei-ru.*  
 think-ASP-PRS  
 'Taro thinks that only Hanako can speak English.' [K. Shimamura, p.c.]
- c. *Taroo-wa Hanako(??-ni)-dake-o* [ (??*t*) *eigo-ga hanas-e-ru-to* ]  
 Taro-TOP Hanako(??-DAT)-only-ACC [ (??*t*) English-NOM speak-can-PRS-COMP ]  
 ] *it-tei-ru.*  
 ] say-ASP-PRS  
 'Taro says that only Hanako can speak English.' [K. Shimamura, p.c.]
- d. *Koji-wa Eri(\*-ni)-dake-o* [ (*\*t*) *eigo-ga hanas-e-ru-to* ]  
 Koji-TOP Eri(\*-DAT)-only-ACC [ (*\*t*) English-NOM speak-can-PRS-COMP ]  
*dantei-si-ta.*  
 conclude/assert-do-ASP-PST  
 'Koji concluded/asserted that only Eri can speak English.' [K. Shimamura, p.c.]

3. Our approach: bundled CP.R

- The configurations in ②-⑤ all involve a special CP—CP.R.
  - CP.R bundles the A-properties of the predicational RP with the A'-properties of a CP (similar to a bundled IP, bundling tense, agreement; cf. Bobaljik and Thráinsson 1998).
  - Bundled CP.Rs are not available in all languages—in English, for instance, RP and CP can only occur separately, which leads to the impossibility of ②-⑤.
  - In contrast to RP, which can occur fairly unrestricted, CP.R is syntactically selected—in languages that allow CP.R, not all verbs allow a CP.R complement.
- Since C.R combines the properties of R and C (such as Topic, Focus), it functions as a mixed A/A' element—a composite probe (van Urk 2015):
  - C/R combines semantically with a predicate—a complement with an open position.
  - An A-dependency exists if R establishes a predication relation between the argument in its specifier and its complement. Note: other XPs in Spec,RP do not qualify as A-elements.
  - The C part may impose additional A' flavors, such as a topic, MS interpretations.



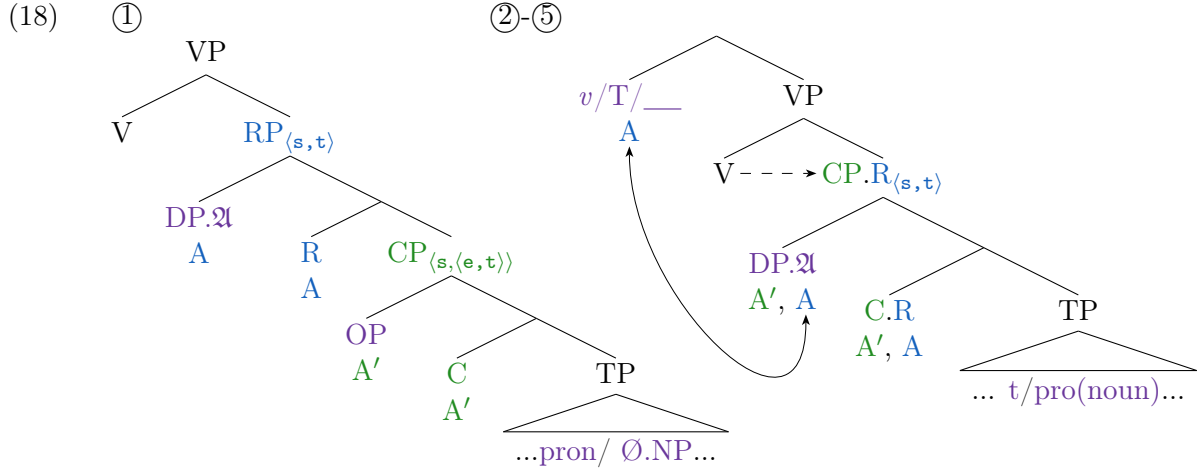
4. Improper things: rescued by CP.R

(17) *Improper A-after-A'*:

An A-dependency involving X cannot follow a pure A'-dependency with X.

- There cannot be Case, agreement, or thematic dependencies involving a DP, if that DP occupies a pure A'-position.
- Note: We neither endorse, derive, nor worry about a constraint such as (17).<sup>1</sup>
- We simply use it as an additional descriptive tool to diagnose the nature of syntactic positions (usual A vs. A' diagnostics are used as well).

<sup>1</sup>In Kobayashi 2020, it is argued that the restriction in (17) does not hold in Brazilian Portuguese, since so-called *interleaved movement* constructions may involve A-movement after (pure) A'-movement, as long as there is an additional A'-step after the A-step. We do not provide an account of these configurations here, but we speculate that the approach to separate probing which we develop below could be extended to these configurations: movement from a mixed A/A' position is only possible, if both properties are targeted, however, they may be targeted by different elements.



### 3.2 Distinction B: Movement

#### 1. Prolepsis ① & High Topic ② vs. Movement CCA ③-⑤

ᵏ		①	②	③	④	⑤
	Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A	Restricted matrix predicates (c-/I-selection)	no	yes	yes	yes	yes
	(Apparent) Improper move- ment/Agree violation	no	yes	yes	yes	yes
	Complement of V	RP			CP.R	
B	Island sensitivity	no	no	yes	yes	yes
	Connectivity effects	no	no	yes	yes	yes
	Origin of DP.ᵏ above emb. C	yes	yes		no	
	Movement within emb. CP	no	no		yes	
	DP.ᵏ base position	Spec,RP	Spec,CP		Gap position	
C	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	Semantic restrictions of DP.ᵏ	yes	yes	yes	yes	no
	Type of restrictions of DP.ᵏ	referential	topic	topic/MS	topic	none

#### 2. Island-sensitivity ⇒ Movement

- Constructions ① and ② do not show island sensitivity (in the lower part).
- Constructions ③-⑤ do show island sensitivity.

#### (19) Brazilian Portuguese High Topic ② vs. Hyperraising ⑤

- a. *Esses carros<sub>i</sub> parecem [ que [ as pessoas que compraram pro<sub>i</sub> ] se  
these cars<sub>i</sub> seem-3PL [ that [ the people who bought pro<sub>i</sub> ] REFL  
arrependeram ].  
repented ]*

‘It seems that people who bought these cars regretted it.

High Topic ②

[Martins and Nunes 2010: 155, fn. 11, (ib)]

- b. *A vaca parece [ que t foi pro brejo ]*.  
 the cow seems [ that t went to.the swamp ]  
 Idiomatic: ‘It seems that things went bad.’  
 Lit.: ‘It seems that the cow went to the swamp.’ Hyperraising ⑤  
 [Martins and Nunes 2010: 146, (6c)]
- c. \**A vaca parece [ que [ o fato de que foi pro brejo ] incomodou o*  
 the cow seems [ that [ the fact of that went to.the swamp ] disturbed the  
*Renato ]*.  
 Renato ]  
 Idiomatic: ‘It seems that the fact that things went bad disturbed Renato.’  
 Lit.: ‘It seems that the fact that the cow went to the swamp disturbed Renato.’  
 [R. Lacerda, p.c.]
- d. *Parece [ que [ o fato de que a vaca foi pro brejo ] incomodou o*  
 seems [ that [ the fact of that the cow went to.the swamp ] disturbed the  
*Renato ]*.  
 Renato ]  
 Idiomatic: ‘It seems that the fact that things went bad disturbed Renato.’  
 Lit.: ‘It seems that the fact that the cow went to the swamp disturbed Renato.’  
 [R. Lacerda, p.c.]

- See the Appendix, 5.2, for data from all types of constructions.

### 3. Connectivity

- Effects that tie the actual DP.ℳ to a lower position.
- Connectivity effects vary greatly across languages.
- “Yes”: *at least some* effect has been found (but see the caveat about apparent reconstruction effects in Prolepsis, due to the refined structure pronouns).
- Among the effects are (see the Appendix, 5.4, for more data)
  - Case of DP.ℳ determined in a position below C (Nez Perce, Japanese, Korean, Tsez)
  - Tracking a lower trace position via *Proper Binding Condition* violation effects (Buryat, Japanese, Korean, Mongolian, Passamaquoddy, Romanian)
  - Idiomatic construals of DP.ℳ with lower predicate (Buryat, Brazilian Portuguese, Mongolian, Uyghur, Zulu)
  - Binding (Buryat, Passamaquoddy, Romanian, Zulu)
  - NPI licensing by embedded negation (Brazilian Portuguese, Japanese, Korean, Mongolian, Passamaquoddy, Uyghur)

(20) Korean Prolepsis ① vs. RtO ③: PBC violation; Case connectivity/stacking

- a. *Na-nun yeki-pwuthe-lul<sub>i</sub> [ t<sub>i</sub> nay ttang-ila-ko ] mitnun<sub>ta</sub>*.  
 I-TOP here-from-ACC<sub>i</sub> [ t<sub>i</sub> my land-COP-COMP ] believe  
 ‘I believe my land begins from here.’ [Yoon 2007: 647, (52b)]
- b. \**[ t<sub>i</sub> nay ttang-ila-ko ]<sub>j</sub> yeki-pwuthe-lul<sub>i</sub> na-nun t<sub>j</sub> mitnun<sub>ta</sub>*.  
 [ t<sub>i</sub> my land-COP-COMP ]<sub>j</sub> here-from-ACC<sub>i</sub> I-TOP t<sub>j</sub> believe  
 ‘I believe my land begins from here.’ [Yoon 2007: 647, (52a)]

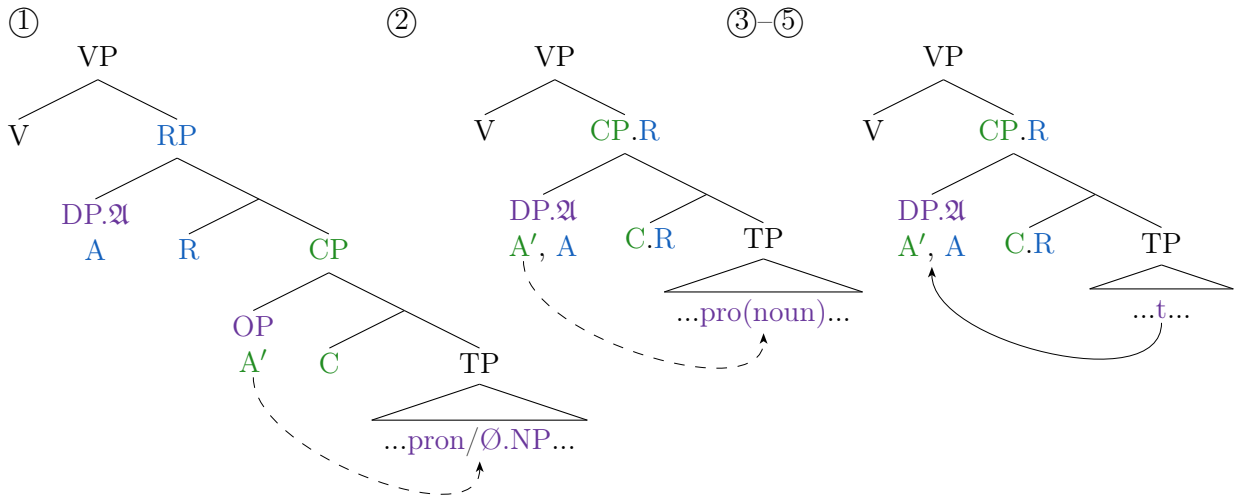
- c. ?[ *Ku-uy apeci-ka puuca-yessta-ko* ] *na-nun Cheli-lul kiekhanta.*  
 [ *he-GEN father-NOM rich-was-COMP* ] I-TOP *Cheli-ACC* remember  
 ‘I remember Cheli’s father as (being) rich.’ [Yoon 2007: 648, fn. 30, (i)]

(21) Nez Perce Hyperraising ⑤: Case connectivity

- a. *Taamsas-nim hi-nees-nek-se* [ *mamay’as-nim poo-payata-six*  
 Taamsas-ERG 3.SBJ-O.PL-think-IPFV [ *children-ERG* 3/3-help-IPFV.S.PL  
*Angel-ne* ].  
 Angel-ACC ]  
 ‘Taamsas thinks the children are helping Angel.’ [Deal 2017: 5, (11)]
- b. *’Aayat-onm hi-nees-nek-se* [ *watiisx mamay’ac*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ 1.day.away *children.NOM*  
*hi-pa-paay-no’* ].  
 3.SBJ-S.PL-arrive-FUT ]  
 ‘The woman thinks the children will arrive tomorrow.’ [Deal 2017: 6, (13)]
- c. *’Aayat-onm hi-nees-nek-se* [ *watiisx mamay’as-na Angel-nim*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ 1.day.away *children-ACC* Angel-ERG  
*hi-naas-wapayata-ya* ].  
 3.SBJ-O.PL-help-PERF ]  
 ‘The woman thinks Angel helped the children yesterday.’ [Deal 2017: 6, (16)]

4. Our approach: Unselective binding vs. movement

- ① DP.ᵩ is base-generated outside the CP; OP-pronoun dependency is unbounded unselective binding (not subject to islands).
- ② DP.ᵩ is base-generated in CP.R (as a topic—see next section); from there it can enter A-dependencies with the matrix clause; the dependency between the topic and the gap/pronoun position is again unbounded.
- ③–⑤ DP.ᵩ is base-generated in the gap position and undergoes movement to Spec,CP.R; movement is subject to island restrictions and connectivity effects can arise (see also Lohninger To appear).



### 3.3 Distinctions C and D (Illustration)

1. Prolepsis ①, High Topic ②, MS RtO/LDA ③ vs. Hyper-ECM ④ vs. Hyperraising ⑤

Ǻ		①	②	③	④	⑤
	Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A	Restricted matrix predicates (c-/l-selection)	no	yes	yes	yes	yes
	(Apparent) Improper movement/Agree violation	no	yes	yes	yes	yes
	Complement of V	RP	CP,R			
B	Island sensitivity	no	no	yes	yes	yes
	Connectivity effects	no	no	yes	yes	yes
	Origin of DP.Ǻ above emb. C	yes	yes	no		
	Movement within emb. CP	no	no	yes		
	DP.Ǻ base position	Spec,RP	Spec,CP	Gap position		
C	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	Semantic restrictions of DP.Ǻ	yes	yes	yes	yes	no
	Type of restrictions of DP.Ǻ	referential	topic	topic/MS	topic	none

2. A-Minimality (distinction C)

- A-Minimality: only the closest DP in an A-position (highest in the embedded clause) can feed into CCǺ.
- Among the CCǺ movement languages, only ④ and ⑤ are subject to an A-Minimality restriction.
- ③ can show (apparent) violations of A-locality in the step that feeds into CCǺ (not the step that associates DP.Ǻ with the relevant head or position in the matrix clause).

(22) No A-Minimality

- a. *eni-r* [ *už-ā magalu b-āc'ru-ti* ] *b-iy-xo*.  
 mother-DAT [ boy-ERG bread.III.ABS III-eat-PST.PRT-NMLZ ] III-know-PRES  
 'The mother knows the boy ate the bread.' Tsez LDA ③  
 [Polinsky and Potsdam 2001: 584, (1b)]
- b. *Na-nun Pwukhansan-ul* [ *mwul-i manhi nanta-ko* ] *sayngkakhanta*.  
 I-TOP Mt. Pwukhan-ACC [ water-NOM a.lot flow-COMP ] think  
 'I believe that there are a lot of springs flowing from Mt. Pwukhan.'  
 Korean MS RtO ③  
 [Yoon 2007: 618, (4c)]
- c. *Esses professores parecem* [ *que a Maria gosta deles* ].  
 these teachers seem.3PL [ that the Maria likes of.them ]  
 'It seems that Maria likes these teachers.'  
 Brazilian Portuguese ②  
 [Martins and Nunes 2010: 152, (21)]

- A-Minimality: DP<sub>ℳ</sub> must be the closest DP in an A-position, but prior A-movement (e.g., A-scrambling) can feed into CC<sub>ℳ</sub>.

(23) Romanian RtO ④

- a. *L-am auzit pe Gelu [ c-a invitat-o pe Mioara ].*  
 him-have.1SG heard DOM Gelu [ that-has invited-her DOM Mioara ]  
 ‘I heard Gelu (say) that he invited Mioara.’ [Alboiu and Hill 2016: 268, (30b)]
- b. \**Am auzit-o pe Mioara [ c-a invitat Gelu ].*  
 have.1SG heard-her DOM Mioara [ that-has invited Gelu ]  
 Int.: ‘I heard Gelu (say) that he invited Mioara.’  
 [Alboiu and Hill 2016: 268, (30c)]

(24) Nez Perce RtO ⑤

- a. *'Aayat-onm hi-nees-nek-se [ watiisx mamay'as-na Angel-nim*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ 1.day.away children-ACC Angel-ERG  
*hi-naas-wapayata-ya ].*  
 3.SBJ-O.PL-help-PERF ]  
 ‘The woman thinks Angel helped the children yesterday.’ [Deal 2017: 6, (16)]
- b. \**Taamsas-nim hi-nees-nek-se [ Angel-nim hi-naas-wapayata-ya*  
 Taamsas-ERG 3.SBJ-O.PL-think-IPFV [ Angel-ERG 3.SBJ-O.PL-help-PERF  
*mamay'as-na ].*  
 children-ACC ]  
 ‘Taamsas thinks Angel helped the children.’ [Deal 2017: 6, (17)]

(25) Mongolian RtO ⑤

- a. *Odgerel [ Dulmaa-d shine baishin(\*-g) baigaa gej ] khel-sen.*  
 Odgerel [ Dulmaa-DAT new house(\*-ACC) COP.PRES COMP ] say-PST  
 ‘Odgerel said that Dulmaa has a new house.’ [Fong 2018: 8, (32a)]
- b. *Odgerel [ shine baishin(-g) Dulmaa-d t baigaa gej ] khel-sen.*  
 Odgerel [ new house(-ACC) Dulmaa-DAT t COP.PRES COMP ] say-PST  
 ‘Odgerel said that Dulmaa has a new house.’ [Fong 2018: 8, (32b)]

(26) Buryat RtO ⑤

- a. *badmә namзjә sajән-ijә zurә-xә gnamзžә xnamзl-namз*  
 Badma 1SG.ACC Sajana-ACC draw-FUT COMP say-PS  
 ‘Badma said that I will draw Sajana.’ [Bondarenko 2017a: 9, (38)]
- b. \**bi sajән-ar badmә xar-a gзžә мзdә-gd-з-b*  
 1SG Sajana-INSTR Badma see-PST COMP know-PASS-PST-1SG  
 Expected: ‘Sajana found out that Badma saw me.’  
 (Lit. ‘I was known by Sajana that Badma saw (me).’) [Bondarenko 2017a: 12, (44)]



**3.** Semantic restrictions (distinction D)

- In several languages, the DP.ᵂ must be a topic.

(27) Brazilian Portuguese High Topic ② vs. Hyperraising ⑤

- a. *A vaca parece [ que (\*ela) foi pro brejo ]*.  
 the cow seems [ that (\*it) went to.the swamp ]  
 Idiomatic: ‘It seems that things went bad.’ [Martins and Nunes 2010: 150, (13)]
- b. *Algum aluno parecia [ que (\*ele) ia viajar ]*.  
 some student seemed [ that (\*he) went travel ]  
 ‘It seemed that some student was going to travel.’  
 [Martins and Nunes 2010: 150, (14)]

(28) Tsez LDA ③

- a. *Topic Condition on Long-distance agreement*  
 LDA occurs when the referent of the embedded absolutive NP is the (primary) topic of the embedded clause. [Polinsky and Potsdam 2001: 610, (58)]
- b. *eni-r [ uḷ-ā magalu-(go)n b-āc’ru-ti ]*  
 mother-DAT [ boy-ERG bread.III.ABS-TOP III-eat-PST.PRT-NMLZ ]  
*b-iy-xo / \*r-iy-xo.*  
 III-know-PRES / \*IV-know-PRES  
 ‘The mother knows the boy ate the bread.’  
 [Polinsky and Potsdam 2001: 610, (57a,b)]
- c. *\*eni-r [ t’ek-kin y-igu yāt-ru-ti ] y-iy-xo.*  
 mother-DAT [ book.II.ABS-FOC II-good be-PST.PRT.NMLX ] II-know-PRES  
 ‘The mother knows that the BOOK is good.’  
 [Polinsky and Potsdam 2001: 611, (61b)]

(29) Romanian RtO ④

- a. *Am mirosit [ că (cineva) ne minte (cineva) ]*.  
 have.1 smelled [ that (someone) us lies (someone) ]  
 ‘I/we suspected that someone was lying to us.’ [Alboiu and Hill 2016: 276, (45)]
- b. *Am mirosit (\*pe cineva) [ că ne minte ]*.  
 have.1 smelled (\*DOM someone) [ that 1PL.DAT lies ]  
 Int.: ‘I/we suspected that someone was lying to us.’  
 [Alboiu and Hill 2016: 276, (46)]

- Korean (Yoon 2007): DP.ᵂ must be a *major subject* (not necessarily the grammatical subject); most salient argument; subject of a categorical judgment; characteristic property.

(30) Major Subject (Korean, Yoon 2007: 626, (19))

- a. Preference for generic/habitual versus episodic interpretation of Sentential Predicate
- b. Preference for the lexical predicate within the Sentential Predicate to be an individual-level predicate
- c. Preference for the Major Subject to be more salient than Grammatical Subject

- (31) Korean Major Prolepsis ① / RtO ③
- a. *Cheli-nun wonswungi-?\*?lul/ka banana-lul cikum meknunta-ko*  
 Cheli-TOP monkey-ACC/NOM banana-ACC now eat-COMP  
*sayngkakhanta.*  
 thinks  
 ‘Cheli considers a/the monkey to be eating a banana right now.’  
 [Yoon 2007: 630, (26a)]
- b. *Cheli-nun wonswungi-lul/ka banana-lul cal meknunta-ko sayngkakhanta.*  
 Cheli-TOP monkey-ACC/NOM banana-ACC well eat-COMP thinks  
 ‘Cheli thinks monkeys love to eat banana.’  
 [Yoon 2007: 630, (26b)]
- (32) Japanese Prolepsis ① / RtO ③
- a. *Ooku-no nihonzin-wa [ dareka-ga rosiago-ga dekiru to ] omou.*  
 Many-COP Japanese-TOP [ someone-NOM Russian-NOM be.able COMP ] think  
 ‘Lots of Japanese think that (there is) someone (who) can speak Russian.’  
 [Horn 2008: 232, (37a); based on Kitano 1990: 23-24, (74)]
- b. *Ooku-no nihonzin-wa dareka-o [ rosiago-ga dekiru to ] omou.*  
 Many-COP Japanese-TOP someone-ACC [ Russian-NOM be.able COMP ] think  
 ‘Lots of Japanese think that someone specific can speak Russian.’  
 [Horn 2008: 232, (37b); based on Kitano 1990: 23-24, (74)]

### 3.4 Account of distinctions C and D

1. Distinctions C and D yield a three-way split.

②		①	②	③	④	⑤
	Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A	Restricted matrix predicates (c-/I-selection)	no	yes	yes	yes	yes
	(Apparent) Improper move- ment/Agree violation	no	yes	yes	yes	yes
	Complement of V	RP			CP,R	
B	Island sensitivity	no	no	yes	yes	yes
	Connectivity effects	no	no	yes	yes	yes
	Origin of DP.② above emb. C	yes	yes		no	
	Movement within emb. CP	no	no		yes	
	DP.② base position	Spec,RP	Spec,CP		Gap position	
C	A-Minimality (highest A-DP)	no	no	no	yes	yes
	Conjunctive A/A' probing		N/A	yes		no
	Separate A/A' probing		N/A	no		yes
D	Semantic restrictions of DP.②	yes	yes	yes	yes	no
	Type of restrictions of DP.②	referential	topic	topic/MS	topic	none
	Dependent probing		N/A		yes	no

- Our main proposal is that this reflects three ways of how *probing* is established.
  - ③: conjunctive
  - ④: separate, dependent
  - ⑤: separate, independent

**2.** Hierarchy of C.R-probes

③ *Conjunctive satisfaction* [A'+A]

⇒ One single probe with both properties; conjunctive probing can only target a goal that carries both matching features. (Scott 2021, Deal 2015, 2020)

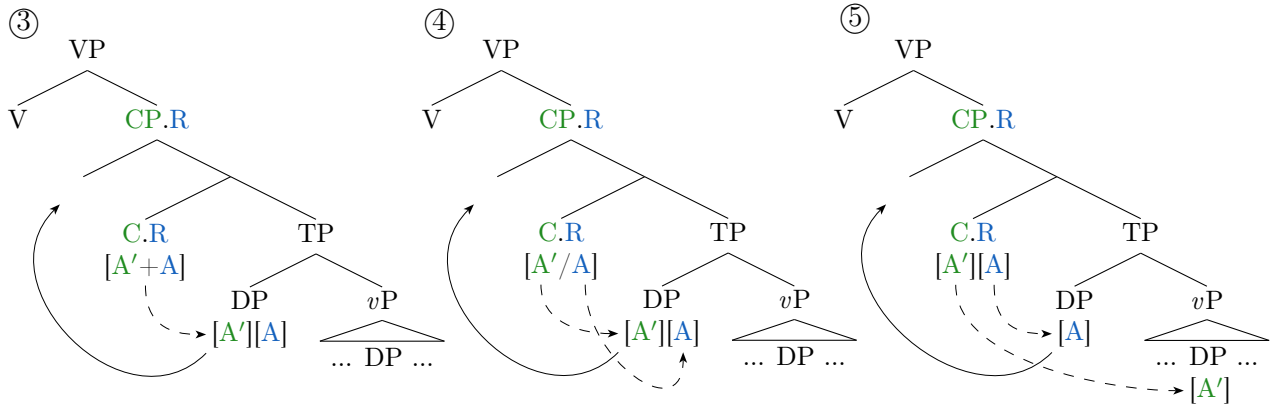
④ *Dependent satisfaction* [A'/A]

⇒ One single probe with two separately probing segments; one segment alone cannot trigger movement or agreement but it can block further agreement with a completely fitting goal. (Coon et al. 2021, Coon and Keine 2020, Deal 2015, 2020)

⑤ *Independent satisfaction* [A']|[A]

⇒ Two separate probes; they can probe separately and trigger movement and agreement independently of each other. (Bossi and Diercks 2019)

**3.** Conjunctive, dependent, independent probing



**4.** A-Minimality

③ *Conjunctive satisfaction* [A'+A]: no A-Minimality

– The composite probe has to find a goal which satisfies both its A- and its A'-features: the highest DP that satisfies the entire probe is moved, regardless of whether there is a higher element with only a subset of the features.

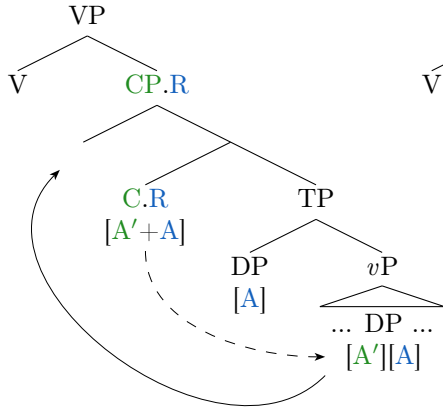
④ *Dependent satisfaction* [A'/A]: A-Minimality

– Both probe segments have to find the same element in order for CC $\mathfrak{A}$  to be possible (otherwise: *feature gluttony*). The A-segment of the probe always finds the highest DP carrying A-features. If that DP also has the required A'-features, it moves; otherwise, it blocks further probing.

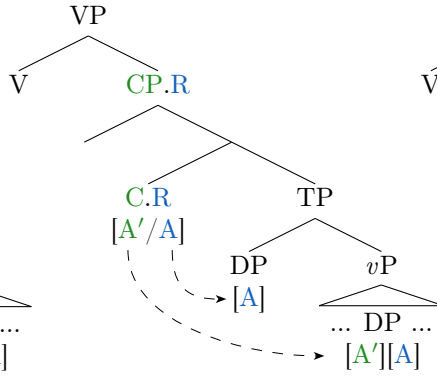
⑤ *Independent satisfaction* [A']|[A]: A-Minimality

– The probes probe separately. The A-probe finds the highest element carrying A-features, which is moved regardless of whether it also has A'-features.

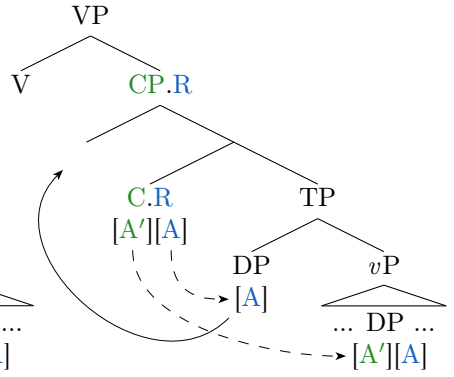
③ OK



④ \*A-Minimality



⑤ Highest A must move



5. Semantic restrictions

③ *Conjunctive satisfaction* [A'+A]: semantic restrictions

- The probe can successfully target only an element which has both the suitable A-features and the suitable A'-features.

④ *Dependent satisfaction* [A'/A]: semantic restrictions

- The probe segments need to target the same element in order for movement to happen. This element has to have both the suitable A-features and the suitable A'-features.

⑤ *Independent satisfaction* [A']|A]: no semantic restrictions

- The two probes can target different elements, and the element which is targeted by the A-probe gets moved, regardless of whether it has the corresponding A'-features or not.

6. The optionality of  $\mathfrak{A}$  configurations

- Successful probing leads to a CC $\mathfrak{A}$  configuration.
- Failed probing does not crash the derivation but results in a non-CC $\mathfrak{A}$  configuration (cf. Preminger 2009, 2014).

③ *Conjunctive satisfaction* [A'+A]:

- ✓ If the probe succeeds, the targeted element is moved to Spec,CP.R → CC $\mathfrak{A}$ .
- ✗ If the probe fails, no element is moved to Spec,CP.R → no CC $\mathfrak{A}$ .

④ *Dependent satisfaction* [A'/A]:

- ✓ If both segments of the probe succeed and iff they target the same element, this element is moved to Spec,CP.R → CC $\mathfrak{A}$ .
- ✗ If the two segments find different elements, a *feature gluttony* situation arises (Coon and Keine 2020) and no element can be moved to Spec,CP.R → no CC $\mathfrak{A}$  (also if one segment fails to find a suitable goal).

⑤ *Independent satisfaction* [A']/[A]:

- ✓ If the A-probe successfully targets an element (the closest), independently of what the A'-probe does, this element is moved to Spec,CP.R → CC $\mathfrak{A}$ . If the A'-probe fails, it can be ignored.
- ✗ If the A-probe fails but the A' probe succeeds, the element targeted by the latter can only be A'-moved, blocking further A-relations → no CC $\mathfrak{A}$ .
- ✗ If both the A- and the A'-probe fail, no element is moved to Spec,CP.R → no CC $\mathfrak{A}$ .

## 4 Summary, conclusion, extensions

1. What is doing the main work?

- Distinction A (Restrictive distribution)
  - No: RP and (propositional) CP are in free variation.
  - Yes: CP.R is lexically restricted (by verbs and languages).
- Distinction B (Movement):
  - No: Base-position of DP. $\mathfrak{A}$  is above embedded C; no movement in embedded clause.
  - Yes: Base-position of DP. $\mathfrak{A}$  is below embedded C; movement in embedded clause.
- Distinction C (A-Minimality):
  - No: No movement, or movement as a result of conjunctive probing.
  - Yes: Movement as a result of separate (dependent or independent) probing.
- Distinction D (Semantic restrictions):
  - Yes: No movement, or movement as a result of non-independent probing.
  - No: Independent probing (A' can be ignored if it finds no suitable goal).

$\mathfrak{A}$	①	②	③	④	⑤
Known as	Prolepsis	Hyperraising High Topic	MS/O, SOR LDA	Hyper-ECM	Hyperraising (RtO or RtS)
A					
Restricted matrix predicates (c-/I-selection)	no	yes	yes	yes	yes
(Apparent) Improper movement/Agree violation	no	yes	yes	yes	yes
Complement of V	RP	CP.R			
B					
Island sensitivity	no	no	yes	yes	yes
Connectivity effects	no	no	yes	yes	yes
Origin of DP. $\mathfrak{A}$ above emb. C	yes	yes	no		
Movement within emb. CP	no	no	yes		
DP. $\mathfrak{A}$ base position	Spec,RP	Spec,CP	Gap position		
C					
A-Minimality (highest A-DP)	no	no	no	yes	yes
Conjunctive A/A' probing	N/A		yes	no	
Separate A/A' probing	N/A		no	yes	
D					
Semantic restrictions of DP. $\mathfrak{A}$	yes	yes	yes	yes	no
Type of restrictions of DP. $\mathfrak{A}$	referential	topic	topic/MS	topic	none
Dependent probing	N/A			yes	no

2. Conclusions, implications

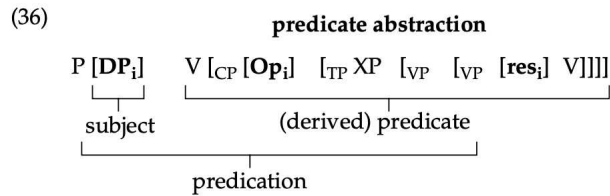
- There is variation, but it is systematic.
- Different approaches are right in many details, but the differences do not justify entirely different machineries to derive  $\mathfrak{A}$ -constructions.
- Prolepsis and  $CC\mathfrak{A}$  are more similar than is often thought—unifying factor: R
- In many languages more than one configuration may be available, and teasing apart the properties is not always easy/possible.
- Following our four distinctions will “clean up” inconsistencies and allow further testing and comparison across languages.

$\mathfrak{A}$ configurations	①	②	③	④	⑤
Known as	Prolepsis maybe CR	Hyperraising High Topic maybe CR	MS/O, SOR LDA maybe CR	Hyper-ECM maybe CR	Hyperraising (RtO/RtS)
A Restricted matrix predicates (c-/l-selection)	no	yes	yes	yes	yes
(Apparent) Improper movement/Agree violation	no	yes	yes	yes	yes
Complement of $\bar{V}$	RP			CP,R	
B Island sensitivity	no	no	yes	yes	yes
Connectivity effects	no	no	yes	yes	yes
Origin of $DP.\mathfrak{A}$ above emb. C		yes		no	
Movement within emb. CP		no		yes	
$DP.\mathfrak{A}$ base position	Spec,RP	Spec,CP		Gap position	
C A-Minimality (highest A-DP)	no	no	no	yes	yes
Conjunctive A/A' probing		N/A	yes		no
Separate A/A' probing		N/A	no		yes
D Semantic restrictions of $DP.\mathfrak{A}$	yes	yes	yes	yes	no
Type of restrictions of $DP.\mathfrak{A}$	referential	topic	topic/MS	topic	none
Dependent probing		N/A		yes	no
Languages	Buryat English German Japanese Korean Madurese Mongolian Nez Perce Passamaquoddy Puyuma Romanian ...	BP	Japanese Korean Tsez Passamaquoddy Turkish	Romanian Turkish	BP Buryat Mongolian Nez Perce Zulu Uyghur

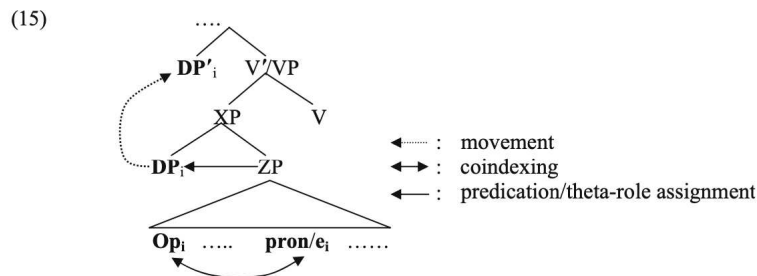
## 5 Appendix

### 5.1 Different terminology—similar ideas

(33) a. Prolepsis [Salzmann 2017: 17, (36)]



b. Korean SOR, Not Prolepsis [Yoon 2007: 17, (36)]

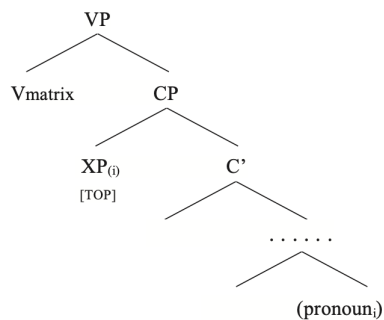


- DP'**: The surface/derived Object position of moved Major Subject
- DP**: Base position of the Major Subject
- ZP**: Sentential Predicate
- XP**: Sentential constituent containing a Major Subject and Sentential Predicate
- Pron/e**: Constituent within Sentential Predicate coindexed with Major Subject

- (i) Our approach assumes many of these components (e.g.,  $XP \sim RP$ ).
- (ii) But we separated two constructions.
  - Prolepsis ①: no embedded movement
  - RtO ③: embedded movement of MS to Spec,CP

c. Puyuma RtO, Not Prolepsis [Chen 2018: 19, (47)]

(47) The proposed structure of Puyuma RTO



- (i) We have classified this construction as Prolepsis ①, not High Topic ②.
- (ii) It shares all properties of Prolepsis.
- (iii) Double Pivot: RP is assigned matrix Pivot which  $DP_{\mathcal{A}}$  in Spec,RP inherits (like in Chen's account).
- (iv) Movement of  $DP_{\mathcal{A}}$  is language-specific (possible in Madurese, not in Puyuma)
- (v) Topic-like properties arise via R.

## 5.2 Productivity, restricted distribution of CC $\mathcal{A}$

- ② Brazilian Portuguese: Difficult to test since changing the matrix verb to a non-raising verb makes the construction hard to distinguish from matrix base-generated subject configurations.
- ③ Korean
  - “Verbs that govern SOR select embedded clauses construable as expressing a categorical judgment” (Yoon 2007: 630)
  - Used in the literature: *believe, think, consider/conclude, remember*
- ③ Tsez:
  - There are several factors, which make it difficult to test verb classes.
  - CP must be in absolutive position.
  - Agreement must be visible on the matrix verb, which is only the case for a subset of vowel-initial verbs which do not have an underlying laryngeal (M. Polinsky, p.c.).
  - Within the class of agreeing verbs, LDA is found with “verbs of perception, cognition and some factive predicates (M. Polinsky, p.c.).
- ④ Romanian:
  - RtO appears with “the entire class of Romanian verbs of knowledge that are compatible with inferential semantics” (Alboiu and Hill 2016: 257)
  - Used in the literature: *find out, suspect, guess, know*
  - Impossible: Hyperraising to subject (e.g., *happened*)
- ⑤ Brazilian Portuguese:
  - Hyperraising “is limited to a subset of unaccusative clause embedding predicates” (Kobayashi 2020: 12).
  - Used in the literature: *seem, turn out, be on the verge of* (Nunes 2008)
- ⑤ Buryat
  - Used in the literature: *say, know, decide, see, hear*
- ⑤ Mongolian:
  - Used in the literature: *say, think, know* (Von Heusinger et al. 2011, Fong 2018)
- ⑤ Zulu:
  - RtO: found with *want, expect*; prohibited with *ask* (Halpert and Zeller 2015)
  - Hyperraising: *seem, be necessary* (Halpert 2016)



### 5.3 Island sensitivity

- (34) Puyuma A' extraction vs. Prolepsis: ①
- a. \**imanay nu=k<in>aladram* [ *na ma-trangis i Isaw anu*  
*who* 2SG.GEN=<PRF.PV>know [ LK AV-cry SG.PIVOT Isaw because  
*m<in>atray ]?*  
 AV<PRF>die ]  
 'Who is the person that you knew that Isaw cried because (he/she) passed away?'  
 [Chen 2018: 15, (33)]
- b. *ma-tiya=ku kan Isaw<sub>i</sub>* [ *dra m-uka=yu i Tripul* [ *anu*  
 AV-dream=1SG.PIVOT SG.ACC Isaw<sub>i</sub> [ C AV-go=2SG.PIVOT LOC Tripul [ because  
*kualeng ec.(PIVOT)<sub>i</sub> ]].*  
 AV.sick ec.(PIVOT)<sub>i</sub> ]]  
 'I dreamt that you went to Tripul because Isaw is sick.' [Chen 2018: 14, (32b)]
- (35) Korean Prolepsis ① vs. RtO ③
- a. *Na-nun Yenghi-lul<sub>i</sub>* [ [ *pro<sub>i</sub>/kunye-ka ha-nun* ] *il-i* ]  
 I-TOP Yenghi-ACC<sub>i</sub> [ [ *pro<sub>i</sub>/she-NOM do-ADNOM* ] work-NOM ]  
*mopemcek-ila-ko sayngkakhanta.*  
 exemplary-COP-COMP think  
 'I think of Yenghi that the things she does are exemplary.' [Yoon 2007: 619, (5)]
- b. ?\**Mary-nun Yeonghi-lul* [ [ *t apeci-ka ha-si-nun* ] *sa.ep*]-*i*  
 Mary-TOP Yenghi-ACC [ [ *t father do-HON-ADNOM* ] business]-NOM  
*manghay-ss-ta-ko sayngkakha-n-ta.*  
 go.bankrupt-PAST-DECL-COMP think-PRES-DECL  
 Int.: 'Mary thinks that as for/it is Yeonghi (that) the business her father was running  
 went bankrupt.' [Lee 2016: 9, (17)]
- (36) Passamaquoddy Prolepsis ① vs. LDA ③
- a. *N-piluwitaham-a not skitap nipa-kotunke* [ *eci kukec oli-ya-t*  
 1-suspect-DIR that.AN man night-hunt.3 [ when warden there-go-3CONJ  
*Kehlis-k* ].  
 Calais-LOC ]  
 'I suspect that that man poaches when the warden goes to Calais.'  
 [Bruening 2001: 7, (19a)]
- b. *Tihtiyas kosona Sapet* 'kosiciy-uku-l wikuwoss-ol eli psi=te wen  
 Tihtiyas or Sapet 3-know.TA-INV-OBV 3.mother-OBV C all=EMPH someone  
*macehe* [ *pro kisi-ntu-htit* ].  
 leave.3 [ *pro* PERF-sing-3PCONJ ]  
 'Her mother knows (about *Tihtiyas or Sapet*) that everyone left after *they* started  
 singing.'  
 [Bruening 2001: 16, (44b)]
- c. \**N-piluwitaham-a kukec<sub>i</sub> eli not skitap nipa-kotunke* [ *eci t<sub>i</sub> oli-ya-t*  
 1-suspect-DIR warden<sub>i</sub> C that.AN man night-hunt.3 [ when *t<sub>i</sub>* there-go-3CONJ  
*Kehlis-k* ].  
 Calais-LOC ]  
 'I suspect (of *the warden*) that that man poaches when *t* goes to Calais.'

## (37) Romanian Prolepsis ① vs. RtO ④

- a. ?*Am auzit despre copii* [ (*pentru*) *că nu vorbesc<sub>k</sub> unul cu altul* ].  
 have.1SG heard about children [ (because) that not talk.3PL one with other ]  
 ‘I heard about the children that/because they do not speak to each other.’  
 [Alboiu and Hill 2016: 269, (33b)]
- b. \**Ion o mirosise pe Maria* [ *faptul că-și aranja*  
 Ion CL.3SG.F.ACC smelled DOM Maria [ fact.the [ that-DAT.REFL arranged  
*plecarea* ]].  
 departure.the ]]  
 ‘Ion figured out the fact that Maria was arranging her departure.’  
 [Alboiu and Hill 2013: 7, (15c)]

## (38) Nez Perce Prolepsis ① vs. RtO ⑤

- a. ?*'Aayat-onm mamay'as-na hi-nees-nek-se* [CP [ *ke-kaa pro*  
 woman-ERG children-ACC 3.SBJ-O.PL-think-IPFV [CP [ when *pro*  
*hi-pa-paay-no'* ], *hi-lloy-no' qiiwn* ].  
 3.SBJ-S.PL-arrive-FUT ], 3.SJB-be.happy-FUT old.man.NOM ]  
 ‘The woman thinks that when the kids arrive, the old man will be happy.’  
 Lit. ‘The woman thinks the kids that when they arrive, the old man will be happy.’  
 [Deal 2017: 4, (9)]
- b. \**'Aayat-onm hi-nees-nek-se* [CP [adjunct *ke-kaa mamay'ac*  
 woman-ERG 3.SBJ-O.PL-think-IPFV [ [ when children.NOM  
*hi-pa-paay-no'* ], *hi-lloy-no' qiiwn* ].  
 3.SBJ-S.PL-arrive-FUT ], 3.SJB-be.happy-FUT old.man.NOM ]  
 Int. ‘The woman thinks that when the kids arrive, the old man will be happy.’  
 [Deal 2017: 5, (12)]

## 5.4 Connectivity effects

## (39) Brazilian Portuguese High Topic ② vs. Hyperraising ⑤: Idiom construal

- a. *A vaca parece* [ *que t foi pro brejo* ].  
 the cow seems [ that t went to.the swamp ]  
 Idiomatic: ‘It seems that things went bad.’  
 Lit.: ‘It seems that the cow went to the swamp.’ Hyperraising ⑤  
 [Martins and Nunes 2010: 146, (6c)]
- b. \**A vaca parece* [ *que ela foi pro brejo* ].  
 the cow seems [ that it went to-the swamp ]  
 Int.: ‘It seems that things went bad’ (No idiomatic reading) High Topic ②  
 [Martins and Nunes 2010: 150, (13)]

## (40) Mongolian Hyperraising ⑤: Idiom construal; NPI licensing

- a. *Dorj chang-aar* [ *Bat-iin nüd(-iig) oree deer-ee gar-san gej* ] *khel-sen*.  
 Dorj loud-INSTR [ Bat-GEN eye(-ACC) top on-REFL.POSS climb-PST COMP ] say-PST  
 ‘Dorj said loudly that Bat was very surprised.’  
 (lit.: ‘Dorj said loudly that Bat’s eyes climbed on top of themselves.’)

- [Fong 2018: 4, (11)]
- b. *Nara* [ *khen(-iig)* *ch iree-güi* *gej* ] *khel-sen*.  
 Nara [ *who(-ACC)* CH come.PST-NEG COMP ] say-PST  
 ‘Nara said that nobody came.’ [Fong 2018: 6, (24a)]
- (41) Buryat Prolepsis ① vs. Hyperraising ⑤: Idiom construal
- a. *badm-in* *zürxən* *sajən-ar* [ *t am-ar-a* *gar-a* *gžə* ]  
*Badma-GEN heart.NOM* *Sajana-INSTR* [ *t mouth-INSTR-REFL go.out-PST1 COMP* ]  
*mɜdə-gd-ɜ*  
 know-PASS-PST1  
 Idiomatic: ‘Sajana saw that Badma got greatly frightened.’  
 (Lit. ‘Badma’s heart was known by Sajana that (it) went out of his mouth.’)  
[Bondarenko 2017b: 123, (50)]
- b. \**badm-in* *zürxən* *sajən-ar* [ *pro am-ar-a* *gar-a-b*  
*Badma-GEN heart.NOM* *Sajana-INSTR* [ *pro mouth-INSTR-REFL go.out-PST1-1SG*  
*gžə* ] *mɜdə-gd-ɜ*  
 COMP ] know-PASS-PST1  
 Idiomatic (expected): ‘Sajana saw that Badma got greatly frightened.’  
 (lit. ‘Badma’s heart was known by Sajana that (it) went out of his mouth.’)  
[Bondarenko 2017b: 123, (51)]
- (42) Romanian ④: PBC violation; Binding
- a. *Am* *ghicit* *imediat* [ *că Radu ne trage plasa* ].  
 have.1SG guessed immediately [ that Radu us draws net.the ]  
 ‘I figured out right away that Radu was pulling our leg.’  
[Alboiu and Hill 2016: 271, (36a)]
- b. *L-am* *ghicit* *pe Radu* [ *că ne trage plasa* ].  
 him-have.1SG guessed DOM Radu [ that us draws net.the ]  
 ‘As for Radu, I figured out that he was pulling our leg.’  
[Alboiu and Hill 2016: 271, (36c)]
- c. \*[ *Că ne trage plasa* ]<sub>i</sub> *l-am* *ghicit* (*imediat*) *pe Radu* *t<sub>i</sub>*.  
 [ that us draws net.the ]<sub>i</sub> him-have.1SG guessed (immediately) DOM Radu *t<sub>i</sub>*  
 Int.: ‘As for Radu, I figured out (right away) that he was pulling our leg.’  
[Alboiu and Hill 2016: 271, (36d)]
- d. *O<sub>k</sub>* *aud* [ *pe fiecare mamă* ]<sub>k</sub> *copii<sub>i</sub>* *ei<sub>k/j</sub>* [ *că muncește mult* ].  
 her<sub>k</sub> hear.3PL [ DOM each mother ]<sub>k</sub> children her<sub>k/j</sub> [ that works hard ]  
 ‘Her<sub>k</sub> children hear each of their<sub>k</sub> mothers say she<sub>k</sub> is working hard.’  
[Alboiu and Hill 2016: 273, (40)]
- (43) Passamaquoddy ③: NPI licensing; binding/reconstruction; PBC
- a. *N-wewitaham-a* [ *cihpolakon kosona kuhas* ] *eli skat kisi-maton-ihq*.  
 1-remember.TA-DIR [ eagle or hawk ] C NEG PERF-fight-1CONJ.INV.NEG  
 ‘I remember that an eagle or a hawk didn’t attack me.’ (neither did; conjunctive)  
[Bruening 2001: 7, (18a)]
- b. *N-kosiciy-a* *nisuwihtic-il<sub>i</sub>* *eli psi=te* *wen* *koseloma-t* *t<sub>i</sub>*.  
 1-know.TA-DIR 3.spouse-PART.OBV<sub>i</sub> C all=EMPH someone love-3CONJ *t<sub>i</sub>*  
 ‘I know that everyone<sub>i</sub> loves his<sub>i</sub> spouse.’ [Bruening 2001: 6, (14b)]

- c. \**[ Eli koluski-t ] nit kesiciy-uk Piyel.*  
 [ C lie-3CONJ ] that.INAN IC.know.TA-1CONJ Piyel  
 ‘That he lies, that’s what I know about Piyel.’ [Bruening 2001: 28, (86b)]
- (44) Uyghur ⑤?: idioms, NPI licensing
- a. *Tursun [ toqquz qiz-ning tolghaq-ni teng kel-di ] di-di.*  
 Tursun [ nine girl-GEN labor-ACC together arrive-PAST.3 ] say-PAST.3  
 ‘Tursun said that times are hard.’ [Shklovsky and Sudo 2014: 388, (15b)]
- b. *Ahmet [ hichkim-ni ket-mi-di ] di-di.*  
 Ahmet [ nobody-ACC leave-NEG-PAST ] say-PAST.3  
 ‘Ahmet said that nobody left.’ [Shklovsky and Sudo 2014: 388, (17)]
- (45) Zulu Hyperraising ⑤: Idiom construal; Binding
- a. *iqhina li-bonakala [ ukuthi li-phum-ile embizeni ].*  
 AUG.5steinbok 5S-seems [ that 5S-exit-PFV LOC.9pot ]  
 ‘The secret seems to have come out.’ [Halpert 2016: 36, (53b)]
- b. *ku-fanele [ ukuthi [ ngo-buhlakana bukaSipho<sub>i</sub> ] pro<sub>i</sub>*  
 17S-necessary [ that [ NGA-AUG.14wisdom 14ASSOC.1Sipho ] pro<sub>i</sub>  
*a-m-siz-e uThemba ].*  
 1SJC-1O-helpsJC AUG.1Themba ]  
 ‘It’s necessary that out of Sipho<sub>i</sub>’s wisdom, he<sub>i</sub> helps Themba.’  
 [Halpert 2016: 36, (54a)]
- c. \**pro<sub>i</sub> u-fanele [ ukuthi [ ngo-buhlakana bukaSipho<sub>i</sub> ] t<sub>i</sub>*  
*pro<sub>i</sub> 1S-necessary [ that [ NGA-AUG.14wisdom 14ASSOC.1Sipho ] t<sub>i</sub>*  
*a-m-siz-e uThemba ].*  
 1SJC-1O-helpsJC AUG.1Themba ]  
 Int.: ‘It’s necessary that out of Sipho<sub>i</sub>’s wisdom, he<sub>i</sub> helps Themba.’  
 [Halpert 2016: 36, (54b)]

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