Escaping CP A typology of Hyperraising

Magdalena Lohninger

 $\label{eq:university} \text{ University of Vienna} \bullet \ magdalena.lohninger@univie.ac.at$

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Roadmap

- Hyperraising and cross-clausal A-dependencies
 - The phenomenon
 - Empirical properties
 - A' or A?
- A typological investigation: from Prolepsis to Hyperraising
 - Five types of cross-clausal A-dependencies
 - Properties A-D: Restricted matrix predicates, movement from the embedded clause, A-Minimality, semantic restrictions
 - Teasing constructions apart
- Theoretical Implementation
 - CCA via A'/A composite probes
 - Different probing mechanisms of composite probes
 - Contingent probing versus independent probing

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Cross-clausal A-dependencies [CCA]

CCA: An A-dependency between a matrix element $\mathbf{V}/v/\mathbf{T}$ and a \mathbf{DP} inside an embedded (finite) CP complement clause.

- \rightarrow Long-distance agreement/case assignment $[\mathbf{LDA}]$
- \rightarrow Hyperraising to subject/object [HyR]



Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Hyperraising to subject

(2) * English

a. She seems [t to have won the triathlon]. b. *She seems [CP **that** t won the triathlon].

[Wurmbrand 2019: 1]

(3) \checkmark Brazilian Portuguese

a. Os meninos parecem [CP que t fizeram a tarefa]. the boys seem.<u>3.PL</u> [CP COMP t did.3.PL the homework] 'The boys seem to have done their homework.' [Nunes 2009: 5]

(4) \checkmark Cantonese

a. Coeng jyu gamgok/tengman [CP waa t m-wui ting]. CL rain feel.like/hear [CP COMP t not-will stop] 'It is felt/heard that the rain will not stop.' [Lee and Yip 2022: 3]

Also: Buryat (Bondarenko 2017), Jordanian Arabic (Farghal 2020), Lubukusu (Carstens and Diercks 2013), Moroccan Arabic (Harrell 2004), Vietnamese (Lee and Yip 2022).

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Hyperraising to object / Hyper-ECM

(5) * English

- a. I believe [her to have won the triathlon].
- b. *I believe [CP (her) that (her) won the triathlon]. [Wurmbrand 2019: 1]

(6) \checkmark Mongolian

a. Bat [CP Dulmaa-g nom unsh-n gej] khel-sen. Bat [CP Dulmaa-ACC book read-PAST COMP] say-PAST 'Bat said that Dulmaa will read a book tomorrow.' [H

[Fong 2019: 2]

(7) \checkmark Romanian

a. L-am mirosit pe Victor [CP **că** t e fericit]. him-have.1SG smelled DOM Victor [CP **COMP** t is.3SG happy] 'I figured out that Victor is happy.' [Alboiu and Hill 2016: 256]

Also: Buryat (Bondarenko 2017), Chamorro (Davies 2005), Herero (Kavari and Marten 2005), Janitzio P'urhepecha (Zyman 2017, 2018), Japanese (Kitano 1990, Horn 2008, Kobayashi 2020), Korean (Yoon 2007), Tatar (Podobryaev 2014), Turkish (Şener 2008), Zulu (Halpert and Zeller 2015). 5/137

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Long-distance agreement

(8) * English

a. There seems [to be a man in the garden].

[Mursell 2020: 2]

- b. There seem [to be two men in the garden].
- c. *There/It seem [CP that two men are in the garden].

(9) \checkmark Tsez

a. Eni-r [CP už-ā magalu b-āc'ru-łi] b-iy-xo. mother-DAT [CP boy-ERG bread.III.ABS III-EAT-PST.PRT.NMLZ] know.III 'The mother knows that the boy ate the bread.' [Polinsky 2001: 584]

(10) \checkmark Uyghur

a. [CP men-iŋ ket-ken-(liq)] heqiqet-im muhim.
[CP I-GEN leave-RAN-(LIQ)] fact-1sg.Poss important
'The fact that I left is important.' [Asarina and Hartman 2011: 2]

Also: *Hinuq* (Forker 2012), *Khwarshi* (Khalilova 2008), *Passamaquoddy (?)* (Bruening 2001, LeSourd 2019).

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Empirical properties of CCA

Empirical properties of CCA configurations (throughout literature)



- A-dependency stems from the matrix predicate
- CCA.DP is base-generated inside the embedded clause
- CCA.DP moves to the embedded left edge
- Embedded clause is a full CP (and probably a phase)
- \rightarrow Don't worry, we'll refine some these properties later

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Empirical properties of CCA



• A-dependency stems from the matrix predicate

Hyperraising and Long-distance agreement $\ensuremath{\mathbf{Properties}}$ of CCA The A'/A problem

The A-dependency stems from the matrix predicate

1. The CCA.DP receives an A-dependency (s.a. case assignment) even though the embedded predicate is not able to assign one.

- \rightarrow Turkish disallows ACC-assignment in passives
 - (11) Makarna-Ø/*yı ye-<u>n</u>-di. pasta-NOM/*ACC eat-<u>PASS</u>-PST 'Pasta was eaten.'

[Şener et al. 2011: 2]

- $\rightarrow\,$ if a passivized clause is an argument of a CCA configuration (Hyper-ECM/ HyR to object), ACC-assignment becomes grammatical
 - (12) John [makarna-yı ye-<u>n</u>-di diye] duy-du. John.NOM [pasta-ACC eat-<u>PASS</u>-PST COMP] hear-PST 'John heard that pasta was eaten.' [Sener et al. 2011: 3]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

The A-dependency stems from the matrix predicate

1. The CCA.DP receives an A-dependency (s.a. case assignment) even though the embedded predicate is not able to assign one.

- $\rightarrow\,$ if the matrix predicate is passivized but the embedded one is not, CCA is ungrammatical
 - (13) *[Pelin-i Timbuktu-ya gi-ti diye] bil-<u>in</u>-iyor.
 [Pelin-ACC Timbuktu-DAT go-PST COMP] know-<u>PASS</u>-PRS
 Int.: 'Pelin is known to have gone to Timbuktu.' [Sener et al. 2011: 3]

Hyperraising and Long-distance agreement $\ensuremath{\mathbf{Properties}}$ of CCA The A'/A problem

The A-dependency stems from the matrix predicate

2. CCA is only grammatical in complement clauses, not in subject clauses.

- $\rightarrow\,$ Mongolian allows CCA into complement clauses
 - (14) Bat [margaash Dulmaa(-g) nom unsh-n gej] khel-sen. Bat [tomorrow Dulmaa(-ACC) book read-PAST COMP] say-PAST
 'Bat said that Dulmaa will read a book tomorrow.' [Fong 2019: 2]
- \rightarrow CCA into subject clauses is illicit: the CCA. DP is not c-commanded by the source of the A-dependency (matrix clause)
 - (15) [Bat(*-iig) chikher id-sen gedge n'] nama-ig gaikhsh-ruul-san.
 [Bat(*-ACC) candy eat-PST COMP POSS.3] 1SG-ACC surprise-CAUS-PST
 'That Bat ate candy surprised me.' [Fong 2019: 9]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Empirical properties of CCA



- ✓ A-dependency stems from the matrix predicate
- CCA.DP is base-generated inside the embedded clause

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP is base-generated in the embedded clause

1. Embedded pronominal subjects are ungrammatical

(16) Algum aluno parecia [que (*ele) ia viajar].
some student seemed [that (*he) went travel]
'It seemed that some student was going to travel.'

Brazilian Portuguese [Martins and Nunes 2010: 150]

(17) Îlk ştiu pe Rareşk [că e (*elk) om bun].
CL.3SG.M.ACC know.1SG DOM Raresh [that is (*he) man good]
'I know Raresh to be a good man.' Romanian [Alboiu and Hill 2013: 4]

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP is base-generated in the embedded clause

2. The CCA.DP can only be licensed by embedded negation, not by matrix negation

- (18) a. Nara [khen(-iig) ch iree-güi gej] khel-sen.
 Nara [who(-ACC) CH come.PST-NEG COMP] say-PST
 'Nara said that nobody came.' Monoglian [Fong 2019: 6]
 - b. *Nara [khen(-iig) ch ir-san gej] khelee-güi. Nara [who(-ACC) CH come-PST COMP] say.PST-NEG Int.: 'Nara said that nobody came.' [ibid.]

Hyperraising and Long-distance agreement $\ensuremath{\mathbf{Properties}}$ of CCA The A'/A problem

The CCA.DP is base-generated in the embedded clause

3. The CCA.DP, if not moved into the matrix clause, can be preceded by embedded adverbs

(19) 'Aayat-onm hi-nees-nek-se [watiisx mamay'ac woman-ERG 3SUBJ-O.PL-think-IMPERF [1.day.away children.NOM hi-pa-paay-no'].
3SUBJ-S.PL-arrive-FUT]
'The woman thinks the children will arrive tomorrow.'

Nez Perce [Deal 2017: 6]

(20) Bat [margaash Dulmaa-g nom unsh-n gej] khel-sen.
Bat [tomorrow Dulmaa-ACC book read-PAST COMP] say-PAST
'Bat said that Dulmaa will read a book tomorrow.' Monoglian [Fong 2019: 2]

The CCA.DP is base-generated in the embedded clause

- 4. Idiomatic reading with the embedded clause is possible
- → the Uyghur idiom nine girls' labor pains arrived all at once (= times are hard) is retained in CCA
 - (21) Tursun [toqquz qiz-ning tolghaq-ni teng kel-di] di-di. Tursun [nine girl-GEN labor-ACC together arrive-PST.3] say-PST.3 Lit.: 'Tursun said that nine girls' labor pains came all at once.' Idiom.: 'Tursun said that times are hard.' [Shklovsky and Sudo 2014: 388]
- → the Zulu idiom the sun takes fish out of the water (= it is very hot) is retained in CCA
 - (22) I-langa li-fun-w-a [ukuthi t li-khiph-e i-n-hlanzi AUG-5.sun 5.SM-want-PASS-FV [that t 5.SM-take-SUBJ AUG-9-fish e-manzi-ni]. LOC-6.water-LOC] Lit.: 'The sun is wanted to take fish out of the water.' Idiom.: 'The people want it to be very hot.' [Halpert and Zeller 2015: 44]

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP is base-generated in the embedded clause

- 5. CCA triggers PBC violations
- \rightarrow PBC: traces must be properly bound (c-commanded)
- → Japanese: the CCA.DP (*book*) raised to matrix object position, then the resumptive clause (*Bill bought t*) is extraposed \Rightarrow ungrammatical
 - (23) * [Bill-ga t_i katta-to]_j [sono-hon-o_i [John-ga t_j itta]]. [Bill-NOM t_i bought-COMP]_j [the-book-ACC_i [John-NOM t_j said]] Int.: '[That Bill bought t_i]_j, the book_i, John said t_i .' [Tanaka 2002: 639]
- → Buryat: the CCA.DP (*Badma*) raised to matrix object position, then the resumptive clause (*t horse take*) is extraposed \Rightarrow ungrammatical
 - (24) *[t_i mor-ijə ab-a g3žə]_k sajənə badm-ijə_i t_k x3l-3. [t_i horse-ACC take-PST COMP]_k Sajana Badma-ACC_i t_k say-PST Int.: 'Sajana said that Badma bought a horse.' [Bondarenko 2017: 7]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Empirical properties of CCA



- ✓ A-dependency stems from the matrix predicate
- ✓ CCA.DP is base-generated inside the embedded clause
- CCA.DP moves to/through the embedded left edge/ high in the embedded clause

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

The CCA.DP moves to the embedded left edge

1. CCA is island-sensitive (no high base-generation)

- (25) Complex NP island in Cantonese
 - a. *Aaming tenggong [waa [t jiging zau-zo ge siusik] hai gaa ge] Ming hear [COMP [t already left MOD rumor] be false SFP] Int.: 'It is heard that the rumor that Ming already left is false.' [Lee and Yip 2022: 15]
- (26) Adjunct island in Nez Perce (covert HyR, see Deal 2017)
 - a. *'Aayat-onm hi-nees-nek-se [[ke-kaa mamay'ac woman-ERG 3.SBJ-O.PL-think-IPFV [[when children.NOM hi-pa-paay-no'], hi-lloy-no' qiiwn]. 3SBJ-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]

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP moves to the embedded left edge

2. In languages allowing indexical shift, the CCA.DP cannot shift (its non-CCA counterpart can shift)

 \rightarrow Indexical shift: embedded indexicals (pronouns) receive an interpretation relative to the matrix clause (not necessarily relative to the discourse)

(27) * indexical shift in English

a. Leo said that I (=speaker/*Leo) left. [Wurmbrand 2019: 10]

(28) \checkmark indexical shift in Buryat

a. sajənə [bi tərgə əmdəl-ə-b gəžə] məd-ə. Sajana [ISG.NOM cart break-PST-1SG COMP] know-PST 'Sajana found out that I (=speaker/ Sajana) broke the cart.' [Bondarenko 2017: 19]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

The CCA.DP moves to the embedded left edge

→ Common analysis for indexical shift: shifting operator (MONSTER operator) in C; shifts everything within its scope

(Anand and Nevins 2004, Anand 2006, Sudo 2012, Sundaresan 2012, 2018, Shklovsky and Sudo 2014, Podobryaev 2014, Messick 2016)



Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP moves to the embedded left edge

2. In languages allowing indexical shift, the CCA.DP cannot shift

- $\rightarrow\,$ The CCA.DP does not shift (contrary to its non-CCA counterpart)
 - (29) sajənə [bi tərgə amdəl-a-b gažə] məd-a.
 Sajana [1SG.NOM cart break-PST-1SG COMP] know-PST
 'Sajana found out that I (=speaker/ Sajana) broke the cart.' Buryat [Bondarenko 2017: 19]
 - (30) sajənə [naməjə t3rgə 3mdəl-ə(*-b) g3žə] m3d-3.
 Sajana [1SG.ACC cart break-PST(*-1SG) COMP] know-PST
 'Sajana found out that I (=speaker/ *Sajana) broke the cart.' Buryat [ibid.]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

The CCA.DP moves to the embedded left edge

2. In languages allowing indexical shift, the CCA.DP cannot shift

 $\rightarrow~$ The CCA.DP does not shift \rightarrow it must be above MONSTER $\rightarrow~$ SpecCP



Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.DP moves to the embedded left edge

3. CCA.DP is in the binding domain of the matrix subject

- $\rightarrow\,$ Uyghur: CCA.DP must be an anaphor (and cannot be a pronoun) if it is co-referent with the matrix subject
- $\rightarrow~$ Non-CCA.DP behaves the other way around
- $\rightarrow~Condition~A:$ an anaphor must have a local antecedent
- \rightarrow Condition B: a pronoun must be free in its governing category
- $\rightarrow~$ The CCA. DP is in the local binding domain of the matrix clause, a non-CCA. DP is not
 - (31) a. Men [peqet öz-em-ni-la / *meni-la nan ye-men] 1sg [only REFL-1sG-ACC-only / *1sg.ACC-only bread eat-IPFV.1sg] di-dim. say-PsT.1sg 'I said that only I eat bread.' [Shklovsky and Sudo 2014: 391]
 - b. Men [peqet *öz-em-Ø-la / men-la nan ye-men]
 1sg [only *REFL-1sg.NOM-only / 1sg-NOM-only bread eat-IPFV.1sg]
 di-dim.
 say-PST.1sg
 'I said that only I eat bread.' [ibid.]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

Empirical properties of CCA



- \checkmark A-dependency stems from the matrix predicate
- ✓ CCA.DP is base-generated inside the embedded clause
- ✓ CCA.DP moves to/through the embedded left edge
 - Embedded clause is a full CP (and probably a phase)

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

1. CCA.CPs are temporally independent from the matrix clause

(32) Baan gei camjat gugai [waa t gamjat wui ziu
CL flight yesterday guess [COMP t today will as.scheduled fei]
depart]
'Yesterday, the flight is guessed (i.e. estimated) to depart as scheduled today.'

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.CP is a full CP

2. CCA.CPs exhibit the same form, inflectional categories and complementizers as non-CCA.CPs

- (33) Ngi-fun-a [ukuthi u-Sipho a-phek-e i-qanda] 1SG-want-FV [COMP AUG-1A.SIPHO 1.SM-cook-SUBJ AUG-5.egg]
 'I want Sipho to cook an egg.' Zulu [Halpert and Zeller 2015: 477]
- (34) Ngi-ya-m-fun-a u-Sipho [ukuthi t a-phek-e 1.SG-DIS-1.OM-want-FV AUG-1A.Sipho [COMP t 1.SM-cook-SUBJ i-qanda]. AUG-5.egg]

'I want Sipho to cook an egg.' Zulu [Halpert and Zeller 2015: 476]

Hyperraising and Long-distance agreement **Properties of CCA** The A'/A problem

The CCA.CP is a full CP

3. CCA.CPs allow regular A'-movement simultaneously to CCA - the CP is only transparent for CCA

 $\rightarrow\,$ We will get back to that later in detail

- (35) Cantonese Focalisation + Hyperraising
 - a. Lin faahung gaan gungsi taipaa [t dou m-wui paai t].
 even bonus CL company seem.fear [t also not-will distribute t]
 'It seems that the company will not even distribute the bonus.'
 [Lohninger and Yip To appear: 6]
- (36) Mongolian Topicalisation + Hyperraising/ECM
 - a. **Buuz-iig bol** Nara [Dorj(-iig) t id-sen gej] **buuz-ACC TOP** Nara.NOM [Dorj(-ACC) t eat-PST COMP] khel-sen. say-PST 'The buuz, Nara said that Dorj ate.' [Fong 2

at Dorj ate.' [Fong 2019: 28]

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

The A'/A problem

- Why are CCA configurations interesting?
- → Because the Ban on Improper Movement and the Phase Impenetrability Condition should rule them out!

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

PIC and BIM

- Phase Impenetrability Condition [PIC]: In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations. (Chomsky 2000)
- Ban on Improper Movement [BIM]: An element may not be moved from an A'- to an A-position. (Chomsky 1973)

 \mathbf{BIM}







Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

What kind of movement is CCA?

- CCA is a mixture of A'- and A-movement
 - A'-properties
 - \rightarrow Long-distance (out of a CP complement)
 - → Often paired with discourse-dependent interpretation (e.g. topic)
 - → Often obligatory reconstruction into the embedded clause

- A-properties
- $\rightarrow~{\rm Restricted}$ to nominals
- \rightarrow Feeds agreement/ has argument status
- \rightarrow In many languages lacks WCO
- \rightarrow Often cannot be fed by prior A'-movement

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A featural distinction of the A'/A difference

• Structural A'/A distinction (traditional):

- A'-movement targets a non-argument position (CP-domain)
- A-movement targets an argument-position (TP-domain and below)

• Featural A'/A distinction (recent)

- Obata and Epstein (2011), van Urk (2015)
- \bullet Feature classes are responsible for the A'/A-distinction, not positions
- A-features: $[\Phi]$, $[\theta]$, [D], [n], ([Case])
- A'-features: [wh], [foc], [top], [rel], [δ]
- A-features trigger movement with A-properties
- A'-features trigger movement with A'-properties

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A featural A'/A distinction

• Assumptions

- \rightarrow Movement always involves a feature dependency (valuation, sharing, agreement,...)
- → Successive cyclic movement is induced by "intermediate" [A']-features (e.g. [wh]) on embedded C (Abels 2012)...
- → ... instead of a mere [EPP]-feature (Chomsky 2000, Lasnik 2001, Lasnik and Park 2003) or as a reflex of Spell-out (Bošković 2007, Putnam 2009, Stroik 1999, 2009)

• Implications

- \rightarrow Features can bundle and form composite A'/A probes, triggering mixed A'/A-movement (van Urk 2015)
- → An A'/A-chain can feed an A-chain; [A] remains visible after A'/A-movement (Obata and Epstein 2011, Longenbaugh 2017)

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A composite probe analysis of CCA

Proposal: An A'/A analysis for CCA

Related ideas in Şener (2008), Alboiu and Hill (2016), Bondarenko (2017), Zyman (2017, 2018), Wurmbrand (2019), Fong (2019), Mursell (2018), Gong (2022), Lohninger et al. (2022)

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A composite probe analysis of CCA



 \rightarrow CCA is mediated through a composite A'/A probe on embedded C

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A composite probe analysis of CCA



 \rightarrow CCA is mediated through a composite A'/A probe on embedded C \rightarrow A'/A probe triggers A'/A-movement of CCA.DP to SpecCP
Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A composite probe analysis of CCA



- $\rightarrow\,$ CCA is mediated through a composite A'/A probe on embedded C
- $\rightarrow\,$ A'/A probe triggers A'/A-movement of CCA.DP to SpecCP
- $\rightarrow\,$ From there, it is a visible goal for a matrix A-dependency

Hyperraising and Long-distance agreement Properties of CCA The A'/A problem

A composite probe analysis of CCA



- $\rightarrow\,$ CCA is mediated through a composite A'/A probe on embedded C
- \rightarrow A'/A probe triggers A'/A-movement of CCA.DP to SpecCP
- $\rightarrow\,$ From there, it is a visible goal for a matrix A-dependency
- \rightarrow ... and can undergo further A-movement to the matrix clause (in the case of HyR)

Domain X Properties of domain X Distinctions A-D

But this would be too easy

- What about Prolepsis?
- \rightarrow Defining domain \mathfrak{A}
 - The Prolepsis Hyperraising Scale
- $\rightarrow\,$ There are five different types of of configurations that look like CCA
- \rightarrow Methodology (four properties) to disentangle them
- Later: There are also three different types of composite probes

Domain X Properties of domain X Distinctions A-D

Prolepsis versus Hyperraising

- Prolepsis
 - (37) I believe of Nova that *(she) likes salad.
- \rightarrow obligatory dependency between a proleptic DP (Nova) and an embedded element (pronoun, could be pro).
- Hyperraising
 - (38) Os meninos parecem [que t viajaram ontem]. the boys seem.3PL [that t traveled.3PL yesterday] 'The boys seem to have traveled yesterday.' Braz. Portuguese [Martins and Nunes 2010: 145]

Domain **ຊ** Properties of domain **ຊ** Distinctions A-D

Definition of the empirical domain \mathfrak{A}

Domain ${\mathfrak A}$ includes configurations in which \ldots

- a matrix A-element (argument (position), Case assigner, agreement head) is in
- an obligatory dependency (Agree, movement, binding, predication) with another element (operator, argument (position), obligatorily bound pronoun, gap)
- situated in an embedded finite clause.
- \rightarrow Broader than CCA
- \rightarrow Summarizes Prolepsis and CCA

Domain **ຊ** Properties of domain **ຊ** Distinctions A-D

The challenge of domain \mathfrak{A}

- Superficially similar configurations
- E.g. Prolepsis with *pro*-drop vs. HyR to object in Korean
- (39) Prolepsis
 - a. Cheli-nun Yenghi-lul [*pro* yenglihay-ss-ta-ko] mitnun-ta. Cheli-TOP Yenghi-ACC [*pro* smart-PST-DECL-COMP] believe-DECL 'Cheli believes of Yenghi that she was smart.'

[Yoon 2007: 616] (own paraphrase)

(40) Hyperraising

a. Cheli-nun Yenghi-lul [t yenglihay-ss-ta-ko] mitnun-ta. Cheli-TOP Yenghi-ACC [t smart-PST-DECL-COMP] believe-DECL 'Cheli believes Yenghi to have been smart.' [ibid.]

 \rightarrow What we need: a tool to disentangle them (Lohninger et al. 2022)

A typology of CCA Appendix

Domain 2 Properties of domain A

Disentangling \mathfrak{A} : it's not just Prolespis vs. CCA

A-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
Α	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes
В	Movement of DP. A within embedded clause	no	no	yes	yes	yes
C	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	Semantic restrictions of $DP.\mathfrak{A}$	yes	yes	yes	yes	no

- (\mathbf{I}) Burvat, Croatian, English, German, Japanese, Korean, Madurese, Mongolian, Nez Perce, Puyuma, Romanian...
- 2 3 4 5 Brazilian Portuguese, Passamaquoddy
 - Japanese, Korean
 - Romanian, Tsez, Turkish
 - Brazilian Portuguese, Buryat, Cantonese, Mongolian, Nez Perce, Vietnamese, Zulu, ?Uyghur

Domain ຊ Properties of domain ຊ Distinctions A-D

Distinction A: Productivity

A-	configurations	1	2	3	4	5
Kno	wn as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
А	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes

- Prolepsis (1): possible in any context where a full propositional CP can occur (cf. Salzmann 2017).
- CCA (2–5): the class of verbs that allow (2–5) is smaller, both within and across languages, than the class of verbs that allow (1).
 - Tendency: restricted to verbs of knowledge, belief, and perception
 - Some languages also allow (2)–(5) configurations with speech verbs

Domain X Properties of domain X Distinctions A-D

Example: Romanian RtO 4

- Romanian HyR-constructions: only possible with verbs of knowledge, perception, evidentials
- (41) L-am **auzit** pe Mihai [că repară casa]. him-have.1SG **heard** DOM Mihai [that fixes house.the] 'I've heard that Mihai is fixing the house.' CCA [Alboiu and Hill 2016: 256]
- (42) *L-am **spus pe** Victor [că e fericit]. him-have.1sG **said** DOM Victor [that is.3sG happy] 'I said that Victor is happy.' CCA [I. Giurgea, p.c.]
- (43) Am spus despre Victor [că e fericit]. have.1sg said about Victor [that is.3sg happy]
 'I said about Victor that he is happy.' Prolepsis [I. Giurgea, p.c.]

Domain ຊ Properties of domain ຊ Distinctions A-D

Distinction B: Movement within the embedded clause

A-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
Α	Restricted matrix predi-	no	yes	yes	yes	yes
	cates $(c-/l-selection)$					
В	Movement of DP. A	no	no	yes	yes	yes
	within embedded clause					

 \bullet Three base positions for DP. ${\mathfrak A}$

(44) a.
$$V_{matrix}$$
 DP. \mathfrak{A} [$_{CP}$... $pro(noun)$...]]
b. V_{matrix} [$_{CP}$ DP. \mathfrak{A} C [... $pro(noun)$...]]
c. V_{matrix} [$_{CP}$ C [DP. \mathfrak{A}]]

 \rightarrow diagnosed via island-sensitivity and connectivity effects

Domain ຊ Properties of domain ຊ Distinctions A-D

No island-sensitivity in (1) - (2)

- (45) I believe about Atin that [the story that she captured the thief] is untrue. English ① [Davies 2005: 659]
- (46) Esses carros_i parecem [que [as pessoas que compraram pro_i] these cars_i seem.3PL [that [the people who bought pro_i] se arrependeram]. REFL repented] 'It seems that people who bought these cars regretted it.' Braz. Portuguese ② [Martins and Nunes 2010: 155, fn. 11]

Domain ຊ Properties of domain ຊ Distinctions A-D

Island-sensitivity in (3) - (5)

- (47)?*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.' Korean ③ [Lee 2016: 9]
- (48) *Ion o mirosise pe Maria [faptul [că-şi t aranja plecarea]]. Ion CL smelled DOM Maria [fact.the [that-REFL t arranged departure.the]] Int.: 'Ion figured out the fact that Maria was arranging her departure.' Romanian (4) [Alboiu and Hill 2013: 7]
- (49) *'Aayat-onm hi-nees-nek-se [[ke-kaa mamay'ac woman-ERG 3.SBJ-O.PL-think-IPFV [[when children.NOM hi-pa-paay-no'], hi-lloy-no' qiiwn].
 3SBJ-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.' Nez Perce (5) [Deal 2017: 5] 48/137

Domain X Properties of domain X Distinctions A-D

Connectivity effects

- Connectivity effects vary language-specifically, we saw many of them in the first part of the talk
 - Embedded pronouns ungrammatical

(Brazilian Portuguese, Cantonese, Mongolian, Romanian)

• PBC violation

(Buryat, Japanese, Korean, Mongolian, Passamaquoddy, Romanian)

- Idiomatic construals of DP.24 with the lower predicate (Brazilian Portuguese, Buryat, Mongolian, Uyghur, Zulu)
- Binding

(Buryat, Romanian, Zulu)

• NPI licensing by embedded negation (Brazilian Portuguese, Japanese, Korean, Mongolian, Uyghur)

Distinction C: A-Minimality

21-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
А	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes
В	Movement of DP. A within embedded clause	no	no	yes	yes	yes
Ċ	A-Minimality (highest A-DP)	no	no	no	yes	yes

(50) [_{CP} DP1 [DP2]]

- Restriction on DP. \mathfrak{A} to be the highest embedded argument
- Structural, not functional restriction: highest argument does not have to be a subject
- It can also be an object relocated via A-movement to a position above the subject

No A-Minimality in (1) - (3)

- (51) Sheryl thought about/of Tim that the police would never catch him. English (1) [Davies 2005: 654]
- (52) Esses professores parecem [que a <u>Maria</u> gosta deles].
 these teachers seem.3PL [that the <u>Maria</u> likes of.them]
 'It seems that Maria likes these teachers.' Brazilian Portuguese (2) [Martins and Nunes 2010: 152]
- (53) Na-nun Pwukhansan-ul [<u>mwul-i</u> t manhi nanta-ko]
 I-TOP Mt. Pwukhan-ACC [<u>water-NOM</u> t a.lot flow-COMP]
 sayngkakhanta.
 think
 'I believe that there are a lot of springs flowing from Mt. Pwukhan.'

Korean ③ [Yoon 2007: 618]

Domain X Properties of domain X Distinctions A-D

A-Minimality in (4) - (5)

- (54) *Am auzit-o pe Mioara [c-a invitat <u>Gelu</u> t]. have.1SG heard-her DOM Mioara [that-has invited <u>Gelu</u> t] Int.: 'I heard from Mioara that Gelu invited her.' (own paraphrase) Romanian (4) [Alboiu and Hill 2016: 268]
- (55) *bi sajən-ar [badmə t xar-a g3žə] m3də-gd-3-b
 1SG Sajana-INSTR [Badma t 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).')
 Buryat (5) [Bondarenko 2017: 12]

Distinction D: Semantic restrictions

A-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
A	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes
В	Movement of DP. A within embedded clause	no	no	yes	yes	yes
С	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	$\begin{array}{llllllllllllllllllllllllllllllllllll$	yes	yes	yes	yes	no

- The DP. \mathfrak{A} needs to receive a certain interpretation
- The restrictions vary across languages
 - For example: topic requirements, specificity, evidentiality, Major subject requirement

Domain ຊ Properties of domain ຊ Distinctions A-D

Semantic restrictions in (1) - (4)

- (56) a. I know of firemen [that they are available].
 b. Nova said of a secretary [that she is looking for him].
 (1) only specific
- (57) *Algum aluno parecia [que ele ia viajar].
 some student seemed [that he went travel]
 'It seemed that some student was going to travel.'
 Brazilian Portuguese (2) [Martins and Nunes (2010): 150]
- (58) 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.' Japanese (1)/(3) [Horn 2008: 232; based on Kitano 1990: 23-24]
- (59) *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.' Romanian (4) [Alboiu and Hill 2016: 276]

Domain X Properties of domain X Distinctions A-D

No semantic restrictions in (5)

(60) Houdo jan (*ne,) gamgok [waa t wui lai]. many person (*TOP) feel.like [COMP t will come]
'It is felt that many people will come.' Cantonese (5) [Lee and Yip 2022: 18] A typology of CCA Appendix

Domain 2 Distinctions A-D

The full picture of domain \mathfrak{A}

A-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subject Object, RtO	HyR, LDA	HyR
А	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes
В	Movement of DP. A within embedded clause	no	no	yes	yes	yes
С	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	$\begin{array}{l} \text{Semantic restrictions of} \\ \text{DP}.\mathfrak{A} \end{array}$	yes	yes	yes	yes	no

- (1)Buryat, Croatian, English, German, Japanese, Korean, Madurese, Mongolian, Nez Perce, Puyuma, Romanian...
- 2 3 4 5 Brazilian Portuguese, Passamaquoddy
 - Japanese, Korean
 - Romanian, Tsez, Turkish
 - Brazilian Portuguese, Buryat, Cantonese, Mongolian, Nez Perce, Zulu, Vietnamese, ?Uyghur

Domain X Properties of domain X Distinctions A-D

Two configurations in one language?

- Languages can exhibit two or more configurations at the same time
- E.g. Brazilian Portuguese allows (2) and (5)
- Cross-testing of distinctions A-D gives a clear picture
 - $\rightarrow\,$ e.g. as soon as an embedded pronoun is allowed (B), there are no A-Minimality restrictions (C)
 - $\rightarrow\,$ e.g. when a non-topicalizable element serves as CCA. DP (D), we get island-sensitivity (B)
- Ask me about it in the question period!

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The syntax of \mathfrak{A}

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

The syntax of Prolepsis

(61) I believe of Nova that she likes salad.



• R(elator) P(hrase) (Den Dikken 2006, 2017): R relates Spec, RP (an A-position) and its complement via predication.

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

The syntax of Prolepsis



- R(elator) P(hrase) (Den Dikken 2006, 2017): R relates Spec, RP (an A-position) and its complement via predication.
- The embedded CP is turned into a predicate by an OP inserted in Spec, CP (Salzmann 2017).

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

The syntax of Prolepsis



- R(elator) P(hrase) (Den Dikken 2006, 2017): R relates Spec, RP (an A-position) and its complement via predication.
- The embedded CP is turned into a predicate by an OP inserted in Spec, CP (Salzmann 2017).
- DP.A is base generated in Spec, RP and saturates the CP-predicate—RP is a semantic proposition.

ProlepsisCCAComposite probes: DescriptiveCCA + A' GeneralisationComposite probes: Theoretical

The syntax of Prolepsis



- R(elator) P(hrase) (Den Dikken 2006, 2017): R relates Spec,RP (an A-position) and its complement via predication.
- The embedded CP is turned into a predicate by an OP inserted in Spec, CP (Salzmann 2017).
- DP.21 is base generated in Spec, RP and saturates the CP-predicate—RP is a semantic proposition.
- The OP binds the embedded pronoun

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Deriving A - D in Prolepsis



- \rightarrow A) Productivity: any verb that selects a proposition can combine with either RP or a propositional (regular) CP (no OP).
- → B) No embedded movement: DP. \mathfrak{A} in SpecRP, OP in SpecCP base generated.
- $\rightarrow\,$ C) No A-Minimality: any element can be bound
- → D) Semantic restrictions: via R (cf. Landau 2011); only referential DPs saturate a predicate OR high scope, de re reading (Salzmann 2017)

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Composite probes: TheoreticalCross-clausal A-dependencies[CCA]: (2) - (5)

• CCA: DP.21 is base generated inside the embedded clause (either in the embedded left-edge [high/ hanging topic] or in an embedded argument position)



Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

CP.R: A fused projection



- Fusion of RP (A-properties) and CP (A'-properties)—a bundled CP.R.
- Fused C.R is not available in all languages.
 - English: **RP** and CP can only occur separately, leading to Prolepsis (1), and disallowing CCA (2)–(5).
 - CP.R is similar to a (un)bundled IP, bundling tense, agreement (see Bobaljik and Thráinsson 1998).
- CP.R is lexically selected—not all verbs can combine with a CP.R complement.

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

CP.R: A mixed A'/A projection



- The combination of C (A') and R (A) yields a mixed A'/A head - a composite probe
 - C-part: may impose A'-flavors (topic, Major Subject, others).
 - **R**-part: establishes a predication relation between the argument in its specifier and its complement, setting up an A-dependency.



[Salzmann 2017, den Dikken 2017] [Martins and Nunes 2010]

CCA CCA + A' Generalisation

Deriving configurations (3)-(5)

A-	configurations	1	2	3	4	5
Kno	own as	Prolepsis	HyR, LDA High Topic	Major Subjec Object, RtO	t HyR, LDA	HyR
А	Restricted matrix predi- cates (c-/l-selection)	no	yes	yes	yes	yes
В	Movement of DP. A within embedded clause	no	no	yes	yes	yes
С	A-Minimality (highest A-DP)	no	no	no	yes	yes
D	$\begin{array}{l} {\rm Semantic} \ {\rm restrictions} \ {\rm of} \\ {\rm DP}. \mathfrak{A} \end{array}$	yes	yes	yes	yes	no

- $(3) \times \text{A-Minimality},$

- \checkmark Semantic restrictions
- (4) \checkmark A-Minimality, \checkmark Semantic restrictions
- (5) \checkmark A-Minimality, \times Semantic restrictions

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Three types of "classical" CCA

Remember? These were the ones we started with!



... how do we get a three-way split, though? $^{69/137}$

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical

A composite probe on C.R

- Recap: A'/A-distinction is related to features rather than structural positions (van Urk 2015).
- Features can bundle, a single head can carry A'- & A-features at the same time (= composite probe).
 - See also Aldridge (2004, 2008, 2017), Legate (2014), van Urk (2015), Erlewine (2018), Bossi and Diercks (2019), Branan and Erlewine (2020), Branan (2022), Scott (2021b), Coon et al. (2021)
- \bullet RP [A] and CP [A'] fuse and render a composite probe [A'/A] on C.R.
 - \rightarrow [A] enables the CCA. DP to take part in a matrix A-dependency.
 - \rightarrow [A'] is responsible for semantic restrictions s.a. topic requirements.

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical

But still: where does the three-way split come from?

- Not all composite probes exhibit the same probing mechanism
- They differ in how dependent their subparts/ features are from each other
 - ... or, as we will see later, in what direction their features are contingent on each other
- And in their ability to act independently of each other
- Differences in probing mechanisms have been proposed...
- ...for composite φ-probes: a.o. Bobaljik and Thráinsson (1998), Béjar and Rezac (2003), Coon and Bale (2014), Preminger (2014), Deal (2015), Coon and Keine (2020), ...
- ...for composite A'/A probes: Scott (2021b), Lohninger et al. (2022)

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical

Different types of composite probes

- Composite A'/A probes differ in...
- i. ... how they treat partly fitting goals \rightarrow A-Minimality
- ii. ... whether their features can probe independently from each other \rightarrow Semantic restrictions

	Partly fitting goal intervenes	Independent prob- ing possible	
3	Х	Х	\times A-Minimality
			\checkmark Sem. restr.
4	\checkmark	×	\checkmark A-Minimality
			\checkmark Sem. restr.
5	N/A	\checkmark	\checkmark A-Minimality
			\times Sem. restr.
Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Different types of composite probes

- Three types of A'/A probes:
- 3 Conjunctive Probe [A'+A]: the composite probe only agrees with a goal with both fitting features; partly fitting goals are **skipped**
- Dependent Probe [A'/A]: the composite probe only agrees with a goal with both fitting features; partly fitting goals cannot be skipped
- 5 Independent Probe [A'][A]: the two parts of the probe can establish agreement on their own (theoretically with two different goals); [A'] is not tied to [A] (and can fail; Preminger 2009)

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical





- Conjunctive probe only finds goals with both matching features
- All partly fitting goals are ignored

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical





 \times A-Minimality: a closer DP can be skipped if it does not carry the relevant [A']-features but only a subset of matching features.

 \checkmark Semantic restrictions: the CCA.DP has to carry [A']-features which are responsible for the semantic restrictions.

See also: van Urk (2015), Colley and Privoznov (2020), Scott (2021b), Drummond (2023)

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical





- Dependent probe can only agree with a goal with both matching features
- Partly fitting goals block further probing

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical





 \checkmark A-Minimality: if there is a closer partly matching goal, it blocks agreement with a lower goal.

 \checkmark Semantic restrictions: the probe can only agree with a goal that carries both [A'] and [A]. The only felicitous configuration is such, that the highest DP carries [A] and [A']-features.

See also: Legate (2014), Aldridge (2017), Douglas (2018), Erlewine (2018), Branan and Erlewine (2020)

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical





- The two parts of the composite probe probe independently of each other and are able to establish agreement and trigger movement on their own
- The two probes can agree with two separate goals

Prolepsis CCA **Composite probes: Descriptive** CCA + A' Generalisation Composite probes: Theoretical





 \checkmark A-Minimality: The [A]-probe finds the closest DP with [A]-features and attracts it.

× Semantic restrictions: Whether the goal of [A] carries [A']-features or not is irrelevant for the CCA configuration

See also: Scott (2021b), Lohninger and Yip (To appear)

Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

What about the A'-probe?

- In independent probing, the [A']-part of the composite probe can find a goal on its own
- It can agree with this goal and trigger movement
- \rightarrow Prediction: CCA and A'-movement can occur out of the same clause
 - (62) Focalisation + Hyperraising in Cantonese
 - a. <u>Lin faahung gaan gungsi taipaa</u> [t dou m-wui paai \underline{t}]. <u>even bonus</u> CL company seem.fear [t also not-will distribute \underline{t}] 'It seems that the company will not even distribute the bonus.' [Lohninger and Yip (To appear): 6]

Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

CCA + A'-movement



Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

CCA + A'-movement



Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

Towards a CCA + A'-Generalisation

- ... what about conjunctive and dependent probing then?
- A typological correlation in languages with CCA

[Lohninger and Yip To appear]

- i. Conjunctive/dependent probing: If a language has semantic restrictions on the CCA.DP, *no* A' element may be extracted from the same embedded clauses from which the CCA.DP originates.
- $\rightarrow \times \mathbf{CCA} + \mathbf{A}$ '-movement
- ii. Independent probing: If a language does *not* have semantic restrictions on the CCA.DP, A' elements may be extracted from the same embedded clauses from which the CCA.DP originates.
- $\rightarrow \checkmark \mathbf{CCA} + \mathbf{A}$ '-movement

Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

CCA + A'-Generalisation

i. Independent probe \checkmark CCA + A'-mvt

ii. Dependent probe \times CCA + A'-mvt



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Independent probe: \checkmark CCA + A'-mvt

• Mongolian

(63) No semantic restriction on CCA.DP

- a. Nara khen-iig ch [t iree-güi gej] khel-sen. Nara who-ACC CH [t come.PST-NEG COMP] say-PST 'Nara said that nobody came.' [Fong 2019: 8] \Rightarrow (non-referential) NPIs can participate in CCA
 - \Rightarrow (non-referential) NPIs can participate

(64) Topicalisation + Hyperraising

- a. <u>Buuz-iig</u> bol Nara [Dorj(-iig) \underline{t} id-sen gej] khel-sen. <u>buuz-ACC</u> TOP Nara.NOM [Dorj(-ACC) \underline{t} eat-PST COMP] say-PST 'The buuz, Nara said that Dorj ate.' [Fong 2019: 28]
- → Same in: Braz. Portuguese (HyR), Cantonese (see above), Nez Perce, Passamaquoddy, Uyghur, Vietnamese, Zulu

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 Composite probes: Theoretics

Dependent probe: \times CCA + A'-mvt

• Romanian

- (65) Semantic restriction on CCA.DP (evidentiality/topic)
 - a. Am mirosit (*pe cineva) [că t ne minte]. have.1 smelled (*DOM someone) [COMP t 1PL.DAT lies] Int.: 'I/we suspected that someone was lying to us.' [Alboiu and Hill 2016: 276]

 \Rightarrow CCA.DPs must be the source of evidence;

someone cannot be topicalised & cannot undergo CCA

(66) * wh-movement + Hyperraising

a. *<u>Ce</u> l-ai simțit pe Ion [că t nu vrea \underline{t}]? <u>what</u> him-have.2sG felt DOM Ion [COMP t not wants \underline{t}] Int.: 'What did you feel that Ion did not want?'

[Alboiu and Hill 2016: 277]

 \rightarrow Same in: Japanese, Korean, Romanian, Tsez, Turkish

Prolepsis CCA Composite probes: Descriptive **CCA + A' Generalisation** Composite probes: Theoretical

- Joint probing of independent probe
- Cantonese
 - (67) Hyperraising with focalised element
 - a. <u>Lin taaigungsi</u> tengman [\underline{t} gamnin $t^*(\underline{dou})$ m-paai faahung] <u>even</u> big.company hear [\underline{t} this.year $t^*(\underline{also})$ not-distribute bonus] 'It is heard that even big companies did not distribute bonuses this year.' [Lohninger and Yip To appear: 8]
 - (68) Relativisation bled by Hyperraising with focalised element
 - a. *Di [Lin taaigungsi tengman [\underline{t} gamnin t dou m-paai \underline{t}]] CL.PL [even big.company hear [\underline{t} this.year t also not-distribute \underline{t}]] ge faahung
 - MOD bonus

'The bonuses x such that it is heard that even big companies did not distribute x this year.' [ibid.]

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An implementational sketch of composite probes

- Composite probes: fusion of RP [A] with CP [A']
- Why do they exhibit different probing manners?
- Conjunctive and dependent: contingent probes (Branan 2022)
- Independent: head movement (?)

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Contingent Probes

- Branan (2022)
- The [A'] and [A] probe are contingent on each other
- They restrict each others search domain
 - The two parts of the composite probe probe one after another
 - The goal of the first probe defines the domain of probing for the second probe
- Agree consist of a series of more primitive operations
- They are ordered; their outputs feed one another

$Probe(F, START:) \rightarrow$	search the tree for F, and then do something else if F is found; START determines where the search starts
Copy(F,FP)	copy a feature or phrase to where search started
End()	stop probing

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Contingent Conjunctive: $A' \rightarrow A$

• A is contingent on A'



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Contingent Dependent: $A \rightarrow A'$

• A' is contingent on A (Branan 2022: 11,12)

$$\begin{array}{|c|c|c|c|c|c|c|c|}\hline 1 & \operatorname{Probe}(A, \operatorname{START:X}) \rightarrow & \hline 2 & \operatorname{Probe}(A', \operatorname{START:goal}) \rightarrow & \hline 3 & \operatorname{Copy}(\operatorname{goal}) \\ & & \operatorname{End}() \end{array}$$





Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Conjunctive & Dependent versus Independent

- Conjunctive & dependent probes arise through a fusion of RP and CP
- They behave like one single probe
 - $\rightarrow\,$ if one of its parts fails, the whole derivation fails
- Independent probes arise through head movement from C to R
- They behave like two probes on one head
- They are not contingent on each other
 - $\rightarrow\,$ if one of its parts fails, the other part can still probe
- Open for further research: Why do languages behave differently wrt. to fusion?

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Summary & conclusion

\rightarrow Empirical properties of HyR and LDA (CCA)

 $\Rightarrow\,$ Matrix A-dependency, low base-generation, movement through CP, PIC and BIM

\rightarrow Teasing apart domain \mathfrak{A} configurations

- $\Rightarrow\,$ constructions that look similar surface should not be mistaken for one configuration
- \Rightarrow there are (at least) five different configurations (domain \mathfrak{A})
- $\Rightarrow\,$ Prolepsis, high topic HyR, three types of CCA

\rightarrow Three types of composite probes in CCA

- \Rightarrow Conjunctive: No A-Minimality, semantic restrictions
- \Rightarrow Dependent: A-Minimality, semantic restrictions
- \Rightarrow Independent: A-Minimality, no semantic restrictions; allows CCA + other A'-movement

\rightarrow Conjunctive and dependent probes can be implemented via **contingent probes**

Prolepsis CCA Composite probes: Descriptive CCA + A' Generalisation Composite probes: Theoretical

Thank you!

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Brazilian Portuguese: two configurations

(69) Os meninos parecem [que t viajaram ontem].
the boys seem.3PL [that t traveled.3PL yesterday]
'The boys seem to have traveled yesterday.'

(5) [Martins and Nunes 2010: 145]

(70) Os meninos parecem [que eles viajaram ontem].
the boys seem.3PL [that they traveled.3PL yesterday]
'The boys seem to have traveled yesterday.'
(2) [Ibid.: 145]

Property	High Topic (2)	HyR (5)
DP. \mathfrak{A} can correspond to overt pronoun	yes	no
DP. \mathfrak{A} allows idiomatic construals	no	yes
DP. \mathfrak{A} requires a topic interpretation	yes	no
Island-sensitivity	no	yes

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How to keep the configurations apart?

Property	High Topic (2)	HyR (5)
DP. \mathfrak{A} can correspond to overt pronoun	yes	no
DP. \mathfrak{A} allows idiomatic construals	no	yes
DP. \mathfrak{A} requires a topic interpretation	yes	no
Island-sensitivity	no	yes

- Combine two properties
- Properties of ② are incompatible with those of ⑤
- Anything goes disappears

Case Study: Brazilian Portuguese Interaction, Satisfaction & Feature Hierarchy More on independent probe Against other syntactic accounts of CCA The roots of RP

Idioms & pronouns

- Either idiomatic interpretation (5), or overt pronoun (2) possible
- But not both simultaneously
- If the pronoun is used, only a literal interpretation is possible

(71) A vaca parece [que t foi pro brejo].
the cow seems [that t went to the swamp]
Lit.: 'It seems that the cow went to the swamp.' *(2), (5)
Idiomatic: 'It seems that things went bad' *(2), (5)
[Martins and Nunes 2010: 146]

(72) A vaca parece [que ela foi pro brejo].
the cow seems [that it went to-the swamp]
Lit.: 'It seems that the cow went to the swamp.'
*Idiomatic: 'It seems that things went bad'
*(2), *(5)
[Martins and Nunes 2010: 150, (13)]

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R. Lacerda, p.c.137

Island-sensitivity & topic interpretation

- Either not island-sensitive (no movement) (2), or non-topic DP.A possible (5)
- But not both simultaneously
- If DP. \mathfrak{A} is not a topic, it is moved
- (73) Esses carros_i parecem [que [as pessoas que compraram pro_i] se these cars_i seem.3PL [that [the people who bought pro_i] REFL arrependeram]. repented]

'It seems that people who bought these cars regretted it.' (2), *(5) [Martins and Nunes 2010: 155, fn. 11, (ib)]

(74) *Só três carros_i parecem [que [as pessoas que compraram pro_i] only three cars_i seem.3PL [that [the people who bought pro_i] se arrependeram]. REFL repented] 'It seems that people who bought these cars regretted it.' *(2), *(5)

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Topic interpretation & pronouns

- Either a non-topic DP. \mathfrak{A} , \mathfrak{G} , or an overt pronoun \mathfrak{Q}
- But not both simultaneously
- If the pronoun is used, only topic DP.As are possible.
- (75) Algum aluno parecia [que t ia viajar].
 some student seemed [that t went travel]
 'It seemed that some student was going to travel.' *2, 5
 [Martins and Nunes 2010: 150]
- (76) *Algum aluno parecia [que ele ia viajar].
 some student seemed [that he went travel]
 'It seemed that some student was going to travel.' *(2), *(5)
 [Martins and Nunes 2010: 150]

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A-Minimality & topic interpretation (& pronoun)

- Either no A-Minimality (2), or non-topic DP.A (5)
- But not both simultaneously
- If DP. \mathfrak{A} is not a topic, it is undergoes A-movement.
- (77) Esses professores parecem [que a <u>Maria</u> gosta deles].
 these teachers seem.3PL [that the <u>Maria</u> likes them]
 'It seems that Maria likes these teachers.' (2), *(5)
 [Martins and Nunes 2010: 152]

(78) *Alguém parece [que a <u>aluna</u> viu t].
someone seems [that the <u>student</u> saw t]
Int.: 'It seems that the student saw someone.'
*(2), *(5)

[Kobayashi 2020: 6]

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Summary

21.	-configurations	2	5
Kn	own as	High Topi HyR	c HyR
В	Movement of DP. A within embedded clause	no	yes
С	A-Minimality (highest A- DP)	no	yes
D	Semantic restrictions of DP. A	yes	no

- BP: (at least) two constructions
- They cannot be subsumed under one configuration: mixing and matching of the properties is not possible
- Combined testing allows to tease the configurations apart

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Interaction & Satisfaction

• Probes come with Interaction and Satisfaction conditions

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[Deal 2015, 2022]
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- Interaction [INT]: goal can value the probe
- Satisfaction [SAT]: probing is halted
- Probing stops when [SAT] is found or nothing is left

• Composite probes: different Interaction and Satisfaction conditions [Scott 2021b, Bárány 2023]

	SAT: A, SAT: A'	sat: A and A'	sat: A or A'
INT: A,A'	independent	conjunctive	dependent?

Difference in Satisfaction [Scott 2021a]

	SAT: A	SAT: A'
INT: A	Φ -agreement	×
INT: A,A'	dependent?	conjunctive

Difference in Interaction [Bárány 2023]

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Why not different Satisfaction conditions?

- Different Satisfaction conditions derive independent and conjunctive probing well
- They do not *per se* derive dependent probes (SAT: A' or A)
- Additional assumptions needed:
 - If highest goal carries just [A], then it satisfies the probe (disjoint satisfaction; A' or A)
 - But this is not what we observe; [A'] needs to be involved in dependent probing!
 - Stipulated: obligatory EPP on SpecCP
 - [SAT: A or A'] probe only moves elements with [A'] [Scott 2021a: 13]
 - $\rightarrow\,$ we need an additional constraint that all of the interaction conditions need to be met
 - [A'] is not be able to move $DP_{[A]}$
 - $\bullet~{\rm EPP}$ not satisfied $\rightarrow~{\rm crash}$

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Why not different Interaction conditions?

- INT conditions need to be obligatory
- Note: in the original framework, they are not
- Goal needs to fulfill both INT conditions for a successful outcome
- How does this ever derive independent probing?
- Via possible failure of one of the INT conditions?
- How can they first be obligatory and then fail? \rightarrow Last resort option?

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Dynamic Interaction

- The interaction condition can change in the course of agreement
- Once the probe has agreed with a goal with a certain feature (e.g. [PART]), it can further only agree with an argument that also carries this feature
- i.e. interaction with one goal copies the features of the goal into the interaction specification of the probe (to something more specific)
- The interaction condition of the first round of probing is different than the interaction condition of the second round
- Example (for PCC)
 - Probe round 1: [INT: ϕ , SAT: -]
 - agrees with DO with [PART]; [PART] is copied into the interaction condition
 - Probe round 2: [INT: PART, SAT: -]
 - Gives us configurations like: when IO is 3rd person, it can only be agreed with if the higher DO lacks [PART]

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Problems for Dynamic Interaction

General problems for an A'/A adaption:

- Problem 1 Hierarchy
 - We would need a containment hierarchy between A' and A for this to work
 - One of the two would need to be the subset of the other one for the INT to become more specific
 - This sounds very stipulative
- Problem 2 False Predictions
 - Do we ever see any trace of interaction if the agreed-with goal is not the highest one (e.g. in conjunctive probing)?
 - What about intervening pure A'-elements?

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Problems for Dynamic Interaction

• Idea: F combines A' and A symmetrically (see also Coon et al. 2021)

A' A

- Conjunctive:
 - (1) [INT:F, SAT:A'] \rightarrow interacts with DP[A] on the way down, copies [A] into INT; is not satisfied
 - ② [INT:A, SAT:A'] can now find the lower $\mathrm{DP}[\mathrm{A}^\prime/\mathrm{A}]$
 - Problem: How do we exclude that a pure A'-goal in the way halts probing and fulfills the probe?
 - We don't really need dynamic probing here, we can also just use [SAT: A' and A]
- Dependent:
 - (] [INT:F, SAT:-] \rightarrow encounters the closest DP with (only) [A], copies [A] back into INT
 - ② [INT:A, SAT:-]
 - How do we now make sure the goal also carries [A']?
 - Basic problem remains: we need an additional constraint on interaction that says that all interaction conditions need to be met
A'/A Feature Hierarchy

- Coon and Keine (2020), Coon et al. (2021)
- [A'] and [A] are in a hierarchical relation
- Feature Gluttony
 - Segments of a feature hierarchy can probe on their own
 - Probing does not stop when a partly fitting goal is found
 - When a lower, better fitting goal is found, the probe has too much to agree with \rightarrow crash

A-movement of the object

$$\begin{bmatrix} CP & \stackrel{\downarrow}{\longrightarrow} C^0 \begin{bmatrix} u & \mathcal{T} & \downarrow \\ u & D & - \Box & u & \bar{A} & - \Box \end{bmatrix} \xrightarrow{\dots & [vP \text{ OBJECT}} \begin{bmatrix} \mathcal{T} \\ D & \bar{A} \end{bmatrix} \begin{bmatrix} \text{ SUBJECT} \begin{bmatrix} \mathcal{T} \\ D \end{bmatrix} \xrightarrow{V^0 [VP \text{ } V^0 \dots]]} \end{bmatrix}$$

 \tilde{A} -feature located on subject \longrightarrow gluttony



[cf. Harley and Ritter 2002]

[Coon and Keine 2020]

[Coon et al. 2021: 20,21]

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Why not a Feature Hierarchy?

- Dependent probes: $A \rightarrow A'$ hierarchy
- Conjunctive probes: no hierarchy, same strength? \rightarrow stipulative
- Dependent: crash because the probe has too much to agree with
- Movement restriction: Only one element can be moved
- Problem with independent probing?

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More data

• Japanese imposes a referential requirement on the DP hyperraised to matrix object positions (see Horn 2008).

(79) * Topicalisation + Hyperraising [K. Shimamura, p.c.] a. *John-wa konkyomonaku [nihongo-wa Bill-o hanas-e-ru-to John-TOP without.evidence [Japanese-TOP Bill-ACC speak-can-PRES-REP] omot-ta.] think-PAST

Int.: 'John thought without any evidence/reason that as for Japanese, Bill could speak (it).'

(80) * Focalisation + Hyperraising [K. Shimamura, p.c.] a. *John-wa konkyomonaku [nihongo-sae Bill-o hanas-e-ru-to John-TOP without.evidence [Japanese-even Bill-ACC speak-can-PRES-REP] omot-ta.] think-PAST 'John thought without any evidence/reason that even Japanese, Bill

could speak.'

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[Polinsky and Potsdam 2001: 636]

More data

- Tsez has a topic restriction on DPs that undergo LDA across a CP boundary (Polinsky (2001), Polinsky and Potsdam (2001)).
- Notice that Tsez bans long-distance movement for independent reasons.
- Still, (short) A' movement in the *embedded* clause such as *wh*-movement and topicalisation are disallowed with LDA.

(81) * wh-movement + LDA [Polinsky and Potsdam 2001: 634]

a. *enir [<u>hu</u> micxir b-ok'āk'-ru-li] b-iyxo mother [<u>who</u>.ERG money.III.ABS III-steal-PSTPRT-NMLZ] III-knows Int.: 'The mother knows who stole the money.'

(82) * Topicalisation + LDA

a. *eni-r [$a\hbar-\bar{a}$ <u>čanaqan-go-gon</u> ziya mother-DAT [shepherd-ERG <u>hunter-POSS.ESS-TOP</u> cow.III.ABS bišr-er-xosi-łi] b-iy-xo. feed-CAUS-PRSPRT-NMLZ]_{IV} III-know-PRES 'The mother knows that the hunter, the shepherd made (him) feed the cow.'

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More data

- Turkish similarly has a topic restriction on DPs that hyperraised to matrix object positions (Şener 2008).
- (83) * Relativisation + Hyperraising

[Sener 2008: 34]

- a. *[(biz-im) [Mert-i <u>t</u> öp-tü diye] duy-duğ-umuz] <u>kızi-Ø</u> [(we-GEN) [Mert-ACC <u>t</u> kiss-PAST COMP] hear-REL-1PL.POSS] <u>girl-NOM</u> hasta-y-mış. sick-COP-EVID.PAST Int.: 'The girl that we heard that Mert kissed is sick.'
- (84) * wh-movement + Hyperraising [Şener 2008: 33]
 a. *Pelin [Mert-i kim-e vur-du diye] sor-du/merak Pelin-NOM [Mert-ACC who-DAT hit-PAST COMP] ask-PAST/wonder et-ti. do-PAST Int.: 'Pelin asked/wondered who Mert hit.'

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More data

• In Vietnamese, the hyperraised subject can be an idiomatic chunk or a weak quantifier.

(85)	${f Focalisation}+{f Hyperraising}$	[K.F. Yip, p.c.]
	a. <u>ngay ca sách</u> , <u>anh ta s</u> [là t cũng không đọc \underline{t}] <u>even at.all book</u> 3sg.m fear [comp t also not read \underline{t}]	
	'It seems that he does not even read books.'	
(86)	Topicalisation $+$ Hyperraising	[K F Vin nal
	representation + hypertuising	[K.F. TIP, p.c.]
	a. <u>May phim này</u> , <u>Minh s</u> [là t đu không thích <u>t</u>]. <u>movies this</u> <u>Minh fear</u> [COMP t all not like <u>t</u>]	[K.F. 11p, p.c.]

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More data

- Brazilian Portuguese HyR to subjects allow non-topics and idiomatic chunks to participate (Martins and Nunes 2010), showing no obligatory discourse-bound interpretation.
- Long-distance *wh*-movement is also allowed in HyR contexts.

(87) wh-movement + Hyperraising

[Kobayashi 2020: 18]

a. Quais livros elas parec-em [que t ler-am \underline{t}]? which books they seem-PL [that t read-PL \underline{t}] 'Which books do they seem to have read?'

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More data

- In Uyghur, idiomatic chunks and NPIs may participate in LDA (Shklovsky and Sudo 2014), showing no semantic restrictions.
- Uyghur allows additional long-distance *wh*-movement with LDA.

```
(88) wh-movement + LDA [Asarina and Hartman 2011: 8]
a. men [ Ötkür-nɨŋ qatʃan kel-idi-ʁan-(liq)-i-ni ]
I [ Öktür-GEN when come-IMPF-RAN-(LIQ)-3.POSS-ACC ]
bil-i-men.
know-IMPF-1SG
'I know when Öktür will come.'
```

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More data

• Passamaquoddy similarly shows a correlation between having no semantic restrictions and allowing additional (short) *wh*-movement.

(89) wh-movement + Hyperraising

a. N-kosiciy-a-k uhuw-ok muwinuw-ok keq kis-temu-htit. 1-know.TA-DIR-3P three-3P bear-3P $\frac{1}{2}$ PERF-eat-3P.CONJ 'I know what the three bears ate.'

[Bruening 2001: 4]

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Conjoined probing: Cyclic Agreement

- Cyclic Agreement (Béjar and Rezac 2003, Rezac 2003)
- $\rightarrow\,$ A head bears a probe and initiates an Agree search in its c-command domain
- $\rightarrow\,$ If the probe fails to establish an Agree relationship in the first cycle, the head (+ the probe) reprojects
- \rightarrow After reprojection: c-command domain is the union of the first cycle domain and the second cycle domain of Agree

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Cyclic Agreement of A'/A Probes

- Extension of Cyclic Agreement (Scott 2021b)
- $\rightarrow\,$ Timing of probes: first probe finishes searching, copies back features, moves an element to the specifier, then the second probe begins searching
- \rightarrow [A'] on embedded C searches and agrees with a focused element (CCA.DP)
- \rightarrow CCA.DP moves to SpecCP
- $\rightarrow~$ The [A] probe has not initiated its search at this point, it is unsatisfied and reprojects to the new node created by movement of CCA.DP
- $\rightarrow\,$ When the [A] probe reprojects, its c-command domain includes the element in the specifier, CCA.DP
- \rightarrow CCA.DP is then the closest element in the search domain of [A]

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Cyclic Agreement of A'/A Probes



[Scott 2021b: 28]

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Why [A'] and [A] cannot be on two heads

- Problem: Locality
- At least three logical possibilities
- (90) Assuming $C_{[A]}$ is higher than $C_{[A^\prime]},$ i.e.: $[C_{[A]}\ [C_{[A^\prime]}\ [_{TP}\ \dots$
 - a. $C_{[A]}$ is a phasal head, $C_{[A']}$ is not
 - b. $C_{[A]}$ is not a phasal head, $C_{[A']}$ is
 - c. Both $C_{[A]}$ and $C_{[A']}$ are phasal heads
- For a.: CP_[A'] is the complement of the phase CP_[A]
 → A' element at SpecCP_[A'] is blocked by PIC, wrongly banning long-distance A'
 movement
- For b.: CP_[A'] is the phase
 → Its complement TP is inaccessible to C_[A], incorrectly banning CCA
- $\bullet\,$ For c.: TP is inaccessible to $C_{[A]},$ and Spec $CP_{[A']}$ is also inaccessible to matrix A' probe

 \rightarrow Banning both CCA and long-distance A' movement, which is not the case in independent probing languages

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Against a defective CP

- Ferreira (2000), 2009, Nunes (2008) Martins and Nunes (2010)
- Case-assigning head (T/Infl) is defective in HyR (lacks Case or ϕ)
- No Case is assigned to the subject, DP remains active (Activity Condition)
- C selecting a defective T/Infl is **not a phase**
- \rightarrow PIC not active
- → Or weak version of PIC, Delayed Opacity: everything c-commanded by C remains accessible until the next head (v) is merged (Chomsky 2001, Martins and Nunes 2010, Deal 2017)

• <u>Issues</u>

- CCA clauses do not show **impoverished** morphology they look like regular finite clauses, they also usually show **temporal independence** (semantic tense)
- How comes that the **matrix predicate** influences whether CCA is possible?
- Is weak PIC **parametrized**? (what about non-CCA languages?)
- What to do about case-stacking and the CCA.DP agreeing with both the matrix and the embedded verb (see Lohninger et al. 2022)?

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Against phase deactivation

- Matrix v agrees with the whole CP. CP cannot satisfy its φ-probe, then CP gets unlocked/unphased (Rackowski and Richards 2005)
- → CCA: v agrees with CP, deactivates its phasehood, CCA.DP moves right to the matrix clause without intermediate step at SpecCP (Nunes 2008, Halpert 2016, 2019, Lee and Yip 2022)
- (In principle, phase deactivation and CCA via A'/A could combine)

• <u>Issues</u>

- Van Urk and Richards (2015): Agreement between v and CP is **not enough to dissolve phasehood**, elements still move through SpecCP
- Deal (2017): why are there CPs that are transparent for Agree but not **other operations** at the same time? (Nez Perce Complementizer Agreement & CCA do not show the same distribution (Deal 2017), CCA clause is still a barrier for other A-movement (Lohninger and Yip To appear)
- How is **cross-linguistic variation** predicted? CCA vs. non-CCA languages, A-Minimiality, Semantic restrictions, A'-mvt+CCA within the CCA languages?
- Why do CCA.CPs and regular CPs look the same (even though one has [φ] whereas the other doesn't)?

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Salzmann 2017: Prolepsis



OP is base-generated in SpecCP, turns CP into a predicate
 Proleptic object satisfies the open slot of the predicate
 Proleptic object is licensed via predication (not a thematic argument of the matrix clause)

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den Dikken 2006, 2017: Relator Phrase



1 DP.A is base-generated in Spec of a predicative relator phrase

2 CP contains a bound variable (pronoun); it turns the complement clause (CP) into a predicative RP

3 DP.A satisfies the argument slot of the predicate and can A-move into the matrix clause

4 There is no OP

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