

An A' / A Limit in CP

An A-percolation account to multiple WH-questions and cross-clausal A-dependencies

Magdalena Lohninger

University of Vienna

magdalena.lohninger@univie.ac.at

01.06.2021

This work has been supported by the Austrian Science Fund (FWF) Project Implicational hierarchies in clausal complementation (P34012-G) (together with Susi Wurmbrand and Iva Kovač)

- 1 Two independent syntactic phenomena
 - (Multiple) WH-movement as A-movement
 - Cross-clausal A-dependencies (CCA)
- 2 Typological correlation between A-WH-movement and CCA
 - WH-CCA generalization: If a language allows A-WH-movement, it allows CCA
- 3 **New Analysis:** upward A-feature percolation into CP → rendering composite probes
 - WH-movement as A'/A-movement to FocusP
 - CCA as A'/A-movement to TopicP
- 4 Varying height of A-percolation LIMIT
 - explains the WH-CCA correlation

Multiple WH-questions cross-linguistically

- **Single WH-movement**

Brazilian Portuguese, English, German, Greek, Nez Perce, Tsez, ...

(1) **What** did John give to **whom**? *English* (Bošković 2002: 351)

- **Multiple WH-movement**

Bosnian, Bulgarian, Croatian, Romanian, Serbian,...

(2) **Na kogo kakvo** dade Ivan?
to whom what give.3SG Ivan
'What did Ivan give to whom?' *Bulgarian* (Bošković 2002: 351)

- **WH-in-situ**

Japanese, Korean, Mandarin Chinese, Mongolian, Tibetan, Tsez, Turkish,...

(3) Taroo-ga **dare-ni nani-o** ageta no?
Taroo-NOM who-DAT what-ACC gave Q
'Who did Taroo give what?' *Japanese* (Richards 1997: 12)

WH-movement as A-movement

Richards 1997; Richards 2001

- All languages move all WH-words at **LF**
- WH-movement can have **A'**- or **A**-quality
→ Superiority, WCO-effects, general allowance of A-scrambling
- (Leaving aside: Long-distance WH-movement)

			Superiority	WCO	A-SCR
A'	Multiple fronting	<i>Bulgarian-like</i>	✓	✓	✗
	Wh-in-situ	<i>Chinese-like</i>	✓	✓	✗
	Single fronting	<i>English-like</i>	✓	✓	✗
A	Multiple fronting	<i>Bo, Cr, Se-like</i>	✗	✗	✓
	Wh-in-situ	<i>Korean-like</i>	✗	✗	✓
	Single fronting	<i>German-like</i>	✗	✗	✓

Cross-clausal CP A-dependencies (CCA)

- **A-dependencies** into embedded clauses, across a **CP-clause boundary**
 - Long-distance Agreement
 - Hyper-ECM / Hyper-RtO
 - Hyperraising
- Polinsky & Potsdam 2001; Tanaka 2002; Şener 2008; Carstens & Diercks 2009; Ferreira 2009; Nunes 2009; Asarina 2011; Ademola-Adeoye 2011; Obata & Epstein 2011; Shklovsky & Sudo 2014; Halpert & Zeller 2015; Bondarenko 2017; Deal 2017; Wurmbrand 2018; Zyman 2018; Fong 2019; Kobayashi 2020

- **Long-distance Agreement (LDA)**

Chukotko-Kamchatkan, Innu-aimûn, Nez Perce, Passamaquoddy, Tsez,...

(4) **Tsez** (Polinsky & Potsdam 2001: 584)

Eni-r [CP už-ā magalu
mother-DAT [CP boy-ERG bread.III.ABS
b-āc'ru-li] b-iy-xo.
III-EAT-PST.PRT.NMLZ] know.III

'The mother knows that the boy ate the bread.'

- **Hyper-ECM / Hyper RtO**

Buryat, Chamorro, Dholuo, Fijian, Herero, Janitzio P'urhepecha, Japanese, Kipsigis, Korean, Mongolian, Nez Perce, Tatar, Turkish, Uyghur,...

(5) **Mongolian** (Fong 2019: 2)

Bat [CP margaash Dulmaa-g nom unsh-n gej]

Bat [CP tomorrow Dulmaa.ACC book read.N.PST COMP]

khel-sen.

say.PST

'Bat said that Dulmaa will read a book tomorrow.'

Cross-Clausal A-Dependencies (CCA)

- **Hyperraising**

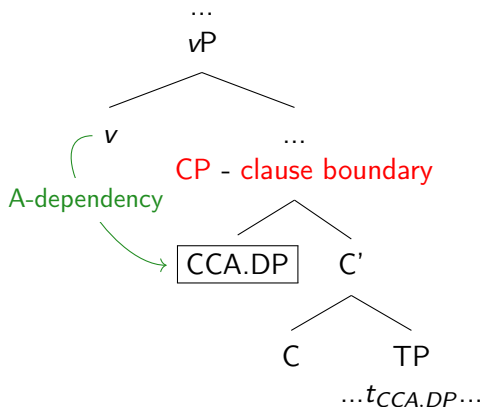
Bantu, Bhojpuri, Brazilian Portuguese, Cantonese, Dholuo, Finnish, Greek, Jordanian Arabic, Kipsigis, Lubukusu, Mandarin Chinese, Maithili, Moro, Moroccan Arabic, Persian, Romanian, Tagalog, Vietnamese, Zulu,...

(6) **Lubukusu** (Carstens & Diercks 2009: 2)

Babaandu ba-lolekhana [CP (mbo) t ba-kwa]
2.people 2.SA-seem [CP (COMP) t 2.SA.PST-fall]

'The people seem like they fell/The people seem to have fallen.'

CCA Structure & Characteristics



- CCA.DP originates in the embedded clause (NPI licensing, idiomatic reading, adverb position, reconstruction,...)
- CCA is not prolepsis
- A-dependency comes from a matrix element
- CCA.DP moves at least to the embedded left edge (A' or A?)
- CP is not deficient
- Ban on Improper Movement?

A-WH-Movement and CCA - Typological Correlation

✓ A-WH-mvt ✓ CCA	✓ A-WH-mvt X CCA	X A-WH-mvt ✓ CCA	X A-WH-mvt X CCA
<i>Turkish</i> <i>Japanese</i> <i>Greek</i> <i>Hungarian</i> <i>Nez Perce</i>		<i>Korean</i> <i>Brazilian Portuguese</i> <i>Romanian</i> <i>Mandarin Chinese</i> <i>Tsez</i> <i>Mongolian</i>	<i>English</i> <i>Bulgarian</i>

→ Classification Challenges:

- CCA in *Bosnian*, *Croatian* or *Serbian*?
- *Japanese* WCO?
- *Brazilian Portuguese* Hyperraising as predication? (Bruening 2001; Martins & Nunes 2009; Nunes 2010; Den Dikken 2017; Kobayashi 2020)
- *German* as A'- or A-WH-language? (Richards 1997; Wiltschko 1997)

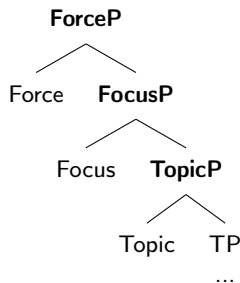
WH-CCA Generalization

Whenever a language **A-moves** its WH-words, it allows **CCA** (but not the other way around).

→ If a language allows A-WH-movement, it allows CCA.

Ingredients for a New Analysis

Split CP



Rizzi 1997

Types of Probes

A'-probes
[topic], [focus], [wh],...

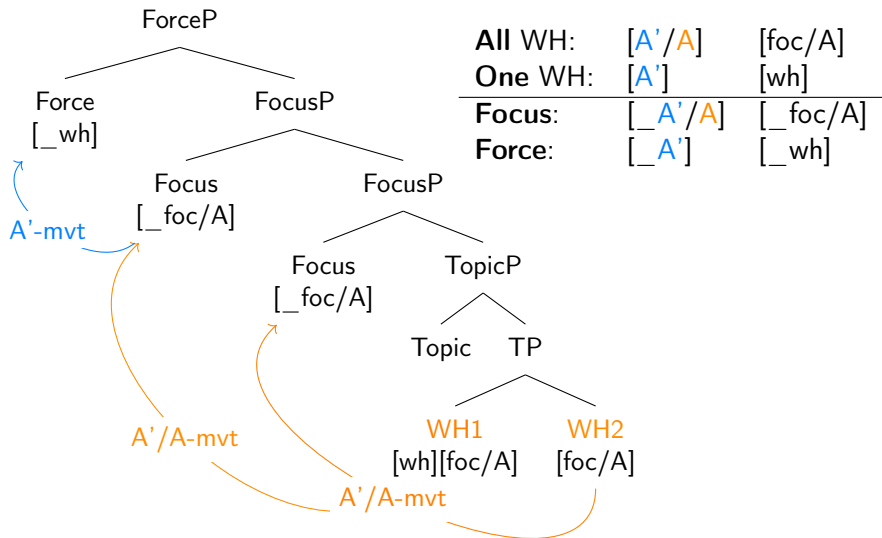
A-probes
[ϕ], [θ], ...

Composite Probes

- [A'/A] probes & goals
- Probes can have composite A'/A-quality
- By that, movement exhibits mixed A'- and A-behaviour

Aldridge 2017; Coon & Bale 2014; Legate 2014; Van Urk 2015; Erlewine 2018; Coon, Baier & Levin 2020

A New Account on A-WH-movement

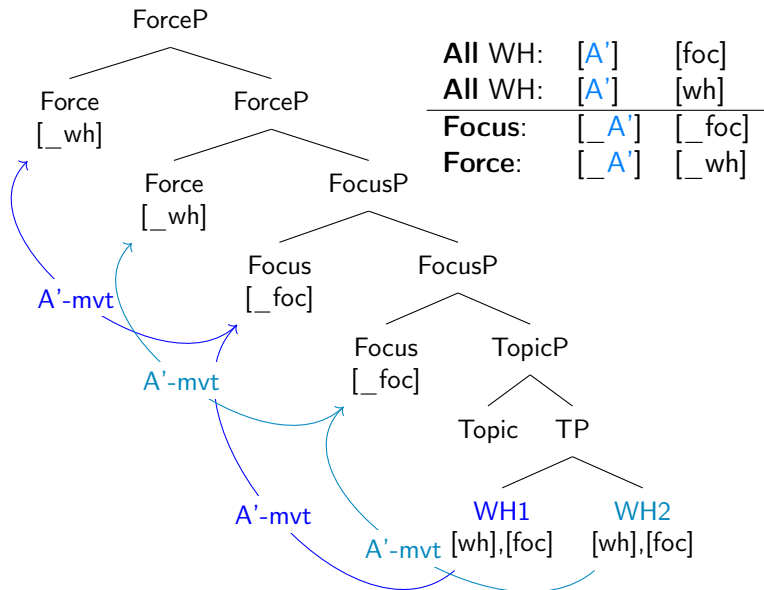


All WH:	$[A'/A]$	$[foc/A]$
One WH:	$[A']$	$[wh]$
Focus:	$[_A'/A]$	$[_foc/A]$
Force:	$[_A']$	$[_wh]$

Lack of Superiority and WCO in A-WH-Languages

- Mixed A'/A-quality of WH-movement: Coon, Baier & Levin 2020; Van Urk 2015
- Focus-quality of WH-movement: Bošković 2002; Sabel 2000
- **Lack of Superiority:** The WH-words have different featural make-up - they do not compete with each other; Only the one with [wh] is moved to ForceP. Which WH-element carries [wh] is dependent on something else.
- **Lack of WCO:** WH-movement includes A-features - its trace in FocusP is responsible for the lack of WCO.

A'-WH-movement

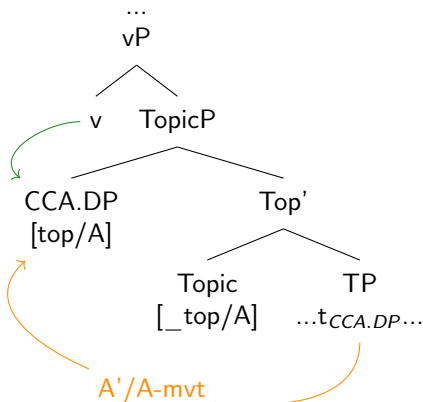


Superiority and WCO in A'-WH-Languages

- **Superiority:** All WH-words have the same featural make-up - they compete with each other; The highest one is moved first.
- **WCO:** All WH-movement is A'-movement, hence WCO

A (partially) New Account on CCA

- **TopP**: [A'/A]-probe (language-specific)
- CCA.DP [A'/A]-moves to SpecTop
- Assumptions: CCA is...
 - **Topicalization**
 - **Restructuring**



Assumption I: CCA is Topicalization

- **Claim:** CCA is triggered by [top]
- **Evidence:** Elements undergoing CCA often are topicalized
→ *Korean, Passamquoddy, Tsez, Turkish,...*
- Bruening 2001; Polinsky & Potsdam 2001; Şener 2008

- Topicalization triggers LDA

(7) **Tsez** (Polinsky & Potsdam 2001: 610)

- a. Eni-r [už-ā magalu-(go)n
mother-DAT [boy-ERG bread.III.ABS-TOP
b-āc'ru-li] b-iy-xo.
III-eat-PST.PRT.NMLZ] III-know-PRES
(‘The mother knows the boy ate the bread.’)
‘The mother knows that the bread, the boy ate.’
- b. * Eni-r [už-ā magalu-(go)n
mother-DAT [boy-ERG bread.III.ABS-TOP
b-āc'ru-li] r-iy-xo.
III-eat-PST.PRT.NMLZ] IV-know-PRES
Int.: ‘The mother knows the boy ate the bread.’

- Non-topicalizable elements (*anybody*) cannot undergo Hyper-ECM

(8) *Turkish* (Şener 2008: 14)

* [**Kimse-yi** gel-di] san-ma-dı-m.
pro [**anybody-ACC** come-PAST] believe-NEG-PAST-1SG
'I didn't think anybody came late.'

Assumption II: CCA is Restructuring

- **Restructuring CP:** Only the necessary parts of CP are projected
- Wurmbrand 2001, 2014, 2015; Sundaesan 2012, 2018

- In CCA-constructions only TopP is projected
- In CCA-languages Top has an [A'/A] probe
- This renders an [A'/A] left edge which can be targeted by A-relations from above

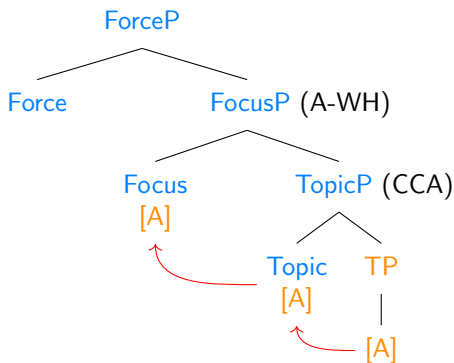
Explaining the Typological Generalization

WH-CCA Generalization

Whenever a language **A-moves** its WH-words, it allows **CCA** (but not the other way around).

→ If a language has A-WH-movement, it has CCA.

- Upwards percolation of A-features into the CP A'-domain
- Percolation cannot skip a phrase
- Language-specific upper **LIMIT** for the percolation
- compare to Feature-Inheritance



LIMITS of A-Percolation

		[<i>ForceP</i>	[<i>FocusP</i>	[<i>TopicP</i>]]
X A-WH + X CCA	✓	A'	A'	A' LIMIT
X A-WH + ✓ CCA	✓	A'	A' LIMIT	A'/A
✓ A-WH + ✓ CCA	✓	A' LIMIT	A'/A	A'/A
✓ A-WH + X CCA	✗	A'	A'/A	A'

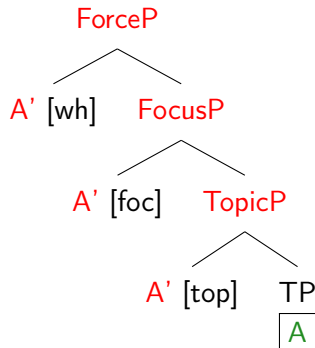
Possible CP Featural Make-Up

X A-WH-Movement

X CCA

LIMIT = TopicP

English, Bulgarian,...



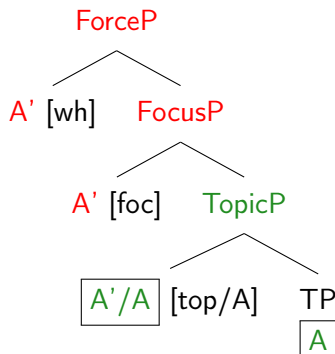
Possible CP Featural Make-Up

X A-WH-Movement

✓ CCA

LIMIT = FocusP

*Braz. Portuguese, Korean, Mandarin Chinese,
Mongolian, Romanian, Tsez, ...*



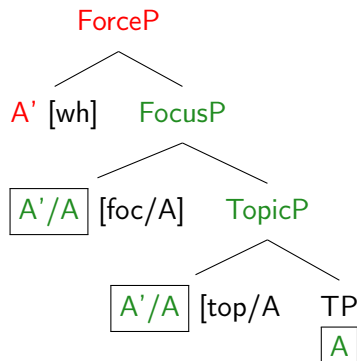
Possible CP Featural Make-Up

✓ A-WH-Movement

✓ CCA

LIMIT = ForceP

*Greek, Hungarian, Japanese,
Nez Perce, Turkish,...*

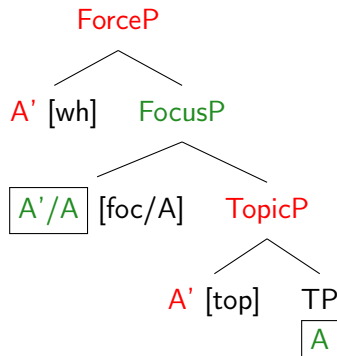


Impossible CP Featural Make-Up

✓ A-WH-Movement

✓ CCA

→ Percolation jumps TopicP



Advantages over other Analyses & Predictions

• Advantages

- Languages form classes depending on how high [A] can percolate
- ...rendering an [A]-LIMIT at different heights of CP
- Languages are consistent with respect to this LIMIT
- Distribution of CCA is not random and connected to other grammatical phenomena (A-WH)

• Predictions

- **LIMIT** could be detected in other grammatical phenomena (C-Agreement? WH-Agreement?)
- **LIMIT** could be finer-grained; more CP projections
- **LIMIT** could be above ForceP (*Dinka, Hungarian, Russian, Passamaquoddy?*)
- WH-movement blocks CCA

- (9) **Tsez [LDA + WH]** (Polinsky & Potsdam 2001: 634)

enir [**lu** micxir b-ok'āk'-ru-ḥi] r/
mother [**who**.ERG money.III.ABS III-steal-PSTPRT-NMLZ] IV/
*b-iyxo

*III-knows

Int.: 'The mother knows who stole the money.'

- (10) **Greek [Hyperraising + WH]** (Petersen & Terzi 2014: 6)

?* **Pjon** fenete i **Maria** oti theli (na kalesi)
?* **whom** seem.3.SG the **Mary** that want.3.SG (subj invite.3.SG)
sto parti?
to-the party?

Int.: 'Who does Mary seem to want (to invite) to the party?'

(11) **Turkish [Hyper-ECM + WH]** (Şener 2008: 33)

* Pelin [Mert-**i** **kim**-e vur-du diye] sor-du/

* Pelin-NOM [Mert-**ACC** **who**-DAT hit-PAST C] ask-PAST/
merak et-ti.

wonder do-PAST

Int.: 'Pelin wondered/asked who Mert hit.'

(12) **Janitzio P'urhepecha [Hyper-ECM + WH]** (Zyman 2018: 114)

* *¿ Ambe=ri ueka-sin-∅ – gi Alicia-ni eska*

* **what=2SS** want-HAB-PRS-INT Alice-**ACC** that

kusta-a-∅ – ka?

play-FUT-PRS-SJV

Int.: 'What do you want Alice to play?'

→ Classification Challenges: *Braz. Portuguese, Japanese*

Conclusion

- **WH-CCA Generalization:** If a language allows A-WH-movement, it allows CCA.
- Upwards percolation of A-features into the CP domain (→ composite probes)
- Languages pattern together depending on their **LIMIT** of percolation
- New evidence for composite probes
- CP is not a pure A'-domain

		[<i>ForceP</i>	[<i>FocusP</i>	[<i>TopicP</i>]]
X A-WH + X CCA	✓	A'	A'	A' LIMIT
X A-WH + ✓ CCA	✓	A'	A' LIMIT	A'/A
✓ A-WH + ✓ CCA	✓	A' LIMIT	A'/A	A'/A
✓ A-WH + X CCA	✗	A'	A'/A	A'

Thanks for your attention :)

References

- **Ademola-Adeoye, F. 2011.** *A cross-linguistic analysis of finite raising constructions.* University of KwaZulu-Natal (Doctoral dissertation).
- **Aldridge, E. 2017.** ϕ -feature competition: A unified approach to the Austronesian extraction restriction. *Proceedings of the 52nd meeting of the Chicago Linguistics Society (CLS)*. 52. Chicago Linguistic Society.
- **Asarina, A. 2011.** *Case in Uyghur and beyond.* Massachusetts Institute of Technology (Doctoral dissertation).
- **Bondarenko, T. 2017.** ECM in Buryat and the optionality of movement. In *Proceedings of the 12th workshop on Altaic Formal Linguistics (WAFL 12)*. MIT Working Papers in Linguistics.
- **Bošković, Ž. 2002.** On multiple wh-fronting. *Linguistic Inquiry* 33(3). 351–383.
- **Bruening, B. 2001.** Raising to object and proper movement. Ms. University of Delaware.
- **Carstens, V. & Diercks, M. 2009.** Parameterizing Case and activity: Hyper-raising in Bantu. *Linguistics publications (MU)*.
- **Chung, S. 1994.** Wh-agreement and "referentiality" in Chamorro. *Linguistic inquiry*. 25(1), 1-44.
- **Coon, J., Baier, N. & Levin, T. 2019.** Mayan agent focus and the ergative extraction constraint: Facts and fictions revisited. Ms. McGill University.
- **Coon, J. & Bale, A. 2014.** The interaction of person and number in Mi'gmaq. *Nordlyd*. 41(1), 85-101.

References

- Deal, A. R. 2015. Interaction and satisfaction in ϕ -agreement. *Proceedings of NELS* 45(1), 1, 179-192.
- Deal, A.R. 2017. *Shifty asymmetries: Universals and variation in shifty indexicality*. UC Berkeley.
- Den Dikken, M. 2017. Predication in the syntax of hyperraising and copy raising. *Acta Linguistica Academica*. 64(1), 3-43.
- Erlewine, M. 2018. Extraction and licensing in Toba Batak. *Language*. 94(3), 662-697.
- Ferreira, M. 2009. Null subjects and finite control in Brazilian Portuguese. *Minimalist essays on Brazilian Portuguese syntax*. 17-50.
- Fong, S. 2019. Proper movement through Spec-CP: An argument from hyperraising in Mongolian. *Glossa: A journal of general linguistics* 4(1).
- Georgi, D. 2014. *Opaque interactions of Merge and Agree: On the nature and order of elementary operations*. University of Leipzig. (Doctoral dissertation).
- Halpert, C. & Zeller, J. 2015. Right dislocation and raising-to-object in Zulu. *The Linguistic Review*. 32(3), 475-513.
- Kallulli, D. 2020. "Relative pronouns" as agreeing complementizers: German *welch*. *Making Worlds Accessible. Essayas in Honor of Angelika Kratzer*. 47-59.
- Kobayashi, F. 2020. Proper Interleaving of A- & A'-movement: a Brazilian Portuguese Case Study. Ms. Massachusetts Institute of Technology.

References

- Legate, J. 2014. *Voice and v: Lessons from Acehnese*. Cambridge, MA: MIT Press.
- Nunes, J. 2009. (Ed.) *Minimalist essays on Brazilian Portuguese syntax*. John Benjamins Publishing.
- Nunes, J. 2010. A note on wh-islands and finite control in Brazilian Portuguese. *Estudos da Língua (gem)*. 8, 79-103.
- Obata, M. & Epstein, S. D. 2011. Feature-Splitting Internal Merge: Improper Movement, Intervention, and the A/A Distinction. *Syntax*, 14(2), 122-147.
- Polinsky, M. & Potsdam, E. 2001. Long-distance agreement and topic in Tsez. *Natural Language and Linguistic Theory* 19, 583–646.
- Richards, N. 1997. *What moves where when in which language?* Massachusetts Institute of Technology. (Doctoral dissertation).
- Richards, N. 2001. *Movement in language: Interactions and architectures*. Oxford University Press, USA.
- Rizzi, L. 1997. The fine structure of the left periphery. In *Elements of grammar*, 281–337. Springer.
- Rudin, C. 1988. On multiple questions and multiple wh fronting. *Natural Language & Linguistic Theory* 6(4). 445–501.
- Sabel, J. 2000. Partial wh-movement and the typology of wh-questions. *Wh-scope marking*. 409-446.
- Şener, S. 2008. Non-canonical case licensing is canonical: Accusative sub-jects of CPs in Turkish. *Ms*.

References

- **Shklovsky, K. & Sudo, Y. 2014.** The syntax of monsters. *Linguistic Inquiry*. 45(3), 381-402.
- **Sundaresan, S. 2012.** *Context and (co) reference in the syntax and its interfaces*. University of Tromsø and Stuttgart. (Doctoral dissertation).
- **Sundaresan, S. 2018.** An alternative model of indexical shift: Variation and selection without context-overwriting. University of Leipzig. *Ms.*
- **Tanaka, H. 2002.** Raising to object out of CP. *Linguistic Inquiry* 33(4). 637–652.
- **Van Koppen, M. 2017.** Complementizer agreement. *The Wiley Blackwell Companion to Syntax* 2, 1-40.
- **Van Urk, C. 2015.** *A uniform syntax for phrasal movement: A case study of Dinka Bor*. Massachusetts Institute of Technology. (Doctoral dissertation).
- **Watanabe, A. 2012.** *Case absorption and wh-agreement*. Springer Science.
- **Wiltschko, M. 1997.** D-Linking, scrambling und superiority in German. *GAGL: Groninger Arbeiten zur germanistischen Linguistik*. (41), 107-142.
- **Wurmbrand, S. 2001.** *Infinitives: Restructuring and clause structure*. Mouton de Gruyter (Studies in Generative Grammar 55)
- **Wurmbrand, S. 2014.** Restructuring across the world. In: L. Veselovská and M. Janebová (eds.), *Complex Visible Out There. Proceedings of the Olomouc Linguistics Colloquium 2014: Language Use and Linguistic Structure*, 275-294. Olomouc: Palacký University.

- **Wurmbrand, S. 2015.** Restructuring cross-linguistically. *Proceedings of the north eastern linguistics society annual meeting* 45, 227-240).
- **Wurmbrand, S. 2018.** Cross-clausal A-dependencies. In: L. Stigliano, E. Ronai & Y. Sun (eds.), *Papers from the 54th Regional Meeting of the Chicago Linguistic Society (CLS 54)*. Chicago, Ill.: Chicago Linguistic Society.
- **Wurmbrand, S. & Lohninger, M. 2019.** An implicational universal in complementation—Theoretical insights and empirical progress. *Propositional Arguments in Cross-Linguistic Research: Theoretical and Empirical Issues*.
- **Zyman, E. 2018.** *The rich syntax of grammatical relations: Raising and hyper-raising in P'urhepecha*. Santa Cruz, CA: University of California. (Doctoral dissertation).

Appendix

Long-distance WH-movement in A-languages

- Long-distance WH-movement behaves like A'WH-movement (in some languages)
 - Superiority
 - WCO
- *Russian, Hungarian?*

(13) **Bo, Cr, Se** (Richards 1997: 33/51)

- a. * Koga si ko tvrdio da je istukao?
whom AUX who claimed that AUX beaten

Int.: 'Who did you claim beat whom?'

Superiority

- b. * Koga_i njegov_i majka misli da Marija voli?
who_i his_i-NOM mother-NOM thinks that Maria loves

Int.: 'Who_i does his_i mother think that Mary loves?'

WCO

(14) *Bulgarian* (Richards 1997: 30)

Multiple fronting

- a. Koj kogo vižda?
who whom sees
'Who sees whom?'
- b. * Kogo koj vižda?
whom who sees

(15) *Tibetan* (Richards 1997: 32)

WH-in-situ

- a. Bkrashis-lags-gi gagi garebyadnas gzig-pang-pa-red?
Tashi-HON-ERG which why buy-HON-PAST-AGR
'Why did Tahi buy what?'
- b. * Bkrashis-lags-gi garebyadnas gagi
Tashi-HON-ERG why which
gzigs-pang-pa-red?
buy-HON-PAST-AGR

(16) *English* (Richards 1997: 46)

- a. Who bought what?
- b. * What did who buy?

Single fronting

(17) **Bo, Cr, Se** (Richards 1997: 30)

Multiple fronting

a. Ko je koga vidjeo?

who AUX whom seen

'Who saw whom?'

b. Koga je ko vidjeo?

whom AUX who seen

(18) **Japanese** (Richards 1997: 31)

WH-in-situ

a. John-ga nani-o naze katta no?

John-NOM what-ACC why bought Q

'What did John buy why?'

b. ? John-ga naze nani-o katta no?

John-NOM why what-ACC bought Q

(19) **German** (Richards 1997: 46)

- a. Wer hat was gekauft?
who has what bought
'Who bought what?'
- b. Was hat wer gekauft?
what has who bought

Single fronting

(20) **Bulgarian** (Richards 1997: 32)

Multiple fronting

- a. Koj_i običa majka si_i?
who_i loves mother his;
'Who_i loves his mother_i?'
- b. * Kogo_i običa majka si_i?
who_i loves mother his;
'Whom_i does his_i mother love?'

(21) **Mandarin Chinese** (Aoun & Li 1993: 32)

WH-in-situ

- * Xihuan ta_i de ren kandao shei_i?
like he DE man saw who
'Who_i did the person that likes him_i see?'

(22) **English** (Richards 1997: 46)

Single fronting

- * Whom_i does his_i mother love?

(23) **Bo, Cr, Se** (Richards 1997: 33)

Multiple fronting

a. Tko_i voli svoju_i majku?
who_i loves his_i-ACC mother-ACC

'Who_i loves his_i mother?'

b. Koga_i voli njegov_i majka?
who_i loves his_i-NOM mother-NOM

'Whom_i does his_i mother love?'

(24) **German** (Richards 1997: 46)

Single fronting

? Wen_i liebt seine_i Mutter?
whom loves his mother

'Who does his mother love?'

(25) **Turkish** (Özsoy 2009: 6)

WH-in-situ: A-SCR of WH + Lack of WCO

Kim-i; anne-si; ara-dı?

who-ACC *pro* mother-3.POSS call-PAST

'Who did his mother call?'