

How to derive a relative pronoun from an interrogative one

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Research questions

Main question

What is the morphosyntactic and semantic representation of (cor)relative pronouns and the morphemes that derive them from interrogative pronouns?

- (1) a. *koj* 'who/which' interrogative
b. *kojto* 'who/which.REL' (cor)relative

Subquestions

- What is the distribution of relative morphemes in different constructions and languages?
- How can the distribution be modeled in (nano)syntax?
- What is the relation between relative morphemes and the morphemes deriving indefinites from *wh*-words?

Motivation and aim

Constructions

Morphology

Syntax–semantics

Motivation and aim

Constructions

Morphology

Syntax–semantics

Motivation: int \rightarrow ind

We know a lot about how **interrogative pronouns** (aka wh-words or indeterminates) give rise to **indefinite pronouns** and esp. how the syntax–semantics interface works.

	English where	Czech where	Hungarian who	Japanese who	Chinese what/which
Q	where	kde	ki	dare	shénme
\exists	somewhere	někde	valaki	dare-ka	shénme
\forall	everywhere	všude	mindenki	dare-mo	shénme dōu
NPI/FCI	anywhere	kdekoli	akárki	dare-mo	shénme
NEG/NCI	nowhere	nikde	senki	dare-mo	shénme
...		kdesi			

Table: Interrogative pronouns \rightarrow Indefinite pronouns

[...] *it seems safe to say that for all major existing theories of interrogatives there is at least one approach to indefinites that would suggest that indefinites and interrogatives are essentially the same.* Onea 2020

Haspelmath 1997; Ramchand 1997; Hagstrom 1998; Kratzer & Shimoyama 2002; Chierchia 2013; Szabolcsi 2015, 2018; Onea 2020

Motivation: int \rightarrow rel

But we know little about how how **interrogative pronouns** give rise to **relative pronouns**.

	English where	Czech where	Hungarian who	Greek who/which	Slovenian where	Hindi who
Q	where	kde	ki	pjos	kje	kis
R	where	kde	aki	opjos	kjer	jis
FCI	anywhere	kdekoli	akárki	opjosdhípotē	kjerkoli	jis bhii

Table: Interrogative pronouns \rightarrow Relative pronouns

Notational convention:

- blue = morphemes deriving **indefinite** pronouns
- red = morphemes deriving **relative** pronouns

Dayal 1997; Giannakidou & Cheng 2006; Rudin 2009; Franks & Rudin 2015

Aims for this talk

Aims

- Demonstrate what interrogative/relative pronoun morphology suggests about the relation among individual relative constructions.
- Provide a **general framework** for analyzing the patterns.
- Data: mainly typological generalizations.
- Only limited space for exploring particular predictions and analyses of particular phenomena.

Motivation and aim

Constructions

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Syntax–semantics

Constructions to be considered

- **Interrogatives (Q)**
 - Mainly matrix
 - Embedding not considered here (sometimes on a par with FR/HR)
- **Unconditionals (UnC)**
 - Conditional-like structures with ever-morphemes
 - Wh-referent optionally picked up in the consequent
- **Correlatives (CoR)**
 - Conditional-like structures without ever-morphemes
 - Wh-referent obligatorily picked up in the consequent
- **Free relatives (FR)**
 - Wh-clauses used as NPs or PPs
 - Functionally very close to light-headed relatives Citko 2004
- **Headed relatives (HR)**
 - Relatives headed by NPs
- A note on other constructions

Interrogatives (Q)

Matrix interrogative:

- (2) János **kit** mutatott be Marinak? *Hu*
 János who.ACC introduced PRT Mary.to
 ‘Who did János introduce to Mari?’

Embedded interrogative sometimes take the shape of interrogatives (3), other times of (free) relatives, (4).

- (3) János azt kérdezte, hogy Péter **melyik** egyetemre készül. *Hu*
 János that.ACC asked COMP Péter which university.to applies
 ‘János asked to which university Péter would apply.’

- (4) a. No sé **lo que** te gusta. *Sp*
 NEG know.1SG REL what you taste.3SG
 ‘I don’t know what you like.’
- b. Kwadwo ka-a **nipa ko aa** ɔ-kɔ-ɔ Kumase kyerε-ε Adwoa. *Akan*
 Kwadwo tell-PST person one REL 3SG-go-PST Kumasi who-PST Adwoa
 ‘Kwadwo told Adwoa who went to Kumasi.’

Embedded interrogatives are a mixed bag → set aside here.

Unconditionals (UnC)

Constituent unconditionals are accompanied by the ever-morpheme; the wh-referent need not be picked up in the consequent.

- (5) a. **Whoever** goes to the party, it will be fun.
 b. **Whoever_i** goes to the party, they_i'll be surprised.

They are sometimes formed using interrogative pronouns. . .

- (6) {**Akárki** / ***Akáraki**} telefonált, elbeszélgettünk. *Hu*
 EVER.who EVER.REL.who called chatted.1PL
 'Whoever called, we chatted.'

and other times using relative pronouns.

- (7) a. {**Kdor**koli / ***Kdo**koli} (že) pride, bom zadovoljen. *Sln*
 who.REL.EVER who.EVER PRT come.3SG will.be.1SG satisfied.
 'Whoever comes, I'll be happy.'
 b. Naj pride {**kdor** / ***kdo**} (že) pride, bom zadovoljen.
 PRT come.3SG who.REL who PRT come.3SG will.be.1SG satisfied
 'Whoever comes, I'll be happy.'

Correlatives (CoR)

Correlatives have no ever-morpheme and require that the *wh*-referent be picked up in the consequent, typically by a demonstrative.

- (8) **jo** laRkii khaRii hai **vo** lambii hai. *Hindi*
 REL.DET girl standing is DEM.DET tall is
 ‘The girl who is standing is tall.’

Correlatives make use of rel-pronouns (if existent in the language); int-pronouns are allowed only exceptionally (Hungarian: proverbs):

- (9) a. {**Aki**_{*i*} / **Ki**_{*i*}} másnak vermet ás, **maga**_{*i*} esik bele. *Hu*
 REL.who who other.DAT pit.ACC digs himself falls in.it
 ‘Who digs a pit for someone else, falls in it himself.’
- b. {**Aki**_{*i*} / ***Ki**_{*i*}} megette a tortát, **azt**_{*i*} megbüntetjük.
 REL.who who eat.PST.3SG the cake.ACC that.ACC punish.1PL
 ‘Who has eaten the cake, that we will punish.’

Free relatives (FR)

Free relatives are well-known and well-studied constructions. They come in two varieties, with important morphosyntactic and semantic differences – plain vs. ever FRs (here mostly set aside).

- (10) a. I ate **what(ever)** Dave cooked.
 b. Ich esse, **was** (**auch immer**) David kocht. Ge
 I eat.1SG what EVER David cooks
 'I (will) eat what(ever) David cooks.'

Languages which use relative morphology in correlatives, also use it in free relatives, independently of the plain vs. ever contrast:

- (11) Meghívtam {**akit** **csak** / ***akárki**} láttam. Hu
 invited.1SG REL.who.ACC only EVER.who saw.1SG
 'I invited whoever I saw.'

Closely related are **light-headed relatives** (set aside here), which (i) makes use of the same wh-words but (ii) rule out the use of ever-morphemes.

- (12) Jan śpiewa to, **co** (***-kolwiek**) Maria śpiewa. Po
 Jan sings that what -EVER Maria sings
 'Jan sings what Mary sings.'

Headed relatives (HR)

Standard relatives headed by a nominal:

- (13) a. the city **which** I visited
b. the city **where** I was born
c. a man **who** I didn't recognize

A note on other constructions

Non-wh-relatives

- There are many different relativization strategies across languages (see de Vries 2002; Cinque 2020).
- Using wh-words is just one option, one that possibly comes with consequences (at least in headed relatives).
- Using wh-words for relativization turns out to be a fairly complex – perhaps even unnecessarily complex – process, which could explain why they are so rare cross-linguistically.

Internally headed relatives

Hiraiwa 2017; Grosu & Hoshi 2019

- There is no documented case of wh-in-situ in embedded relative clauses and hence also no wh-internal heads.

Modal existential constructions

- Generally use interrogative forms (exception: Hungarian optionally uses relative forms).
- A possible analysis mentioned later.

Ambitious attempt at a unification, though with many parameters to be set, yielding various different relativization strategies: Cinque 2020

Motivation and aim

Constructions

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Syntax–semantics

Cross-linguistic and cross-constructional paradigm

The case of Syrian Arabic

	Syrian Arabic			
	what	who	where	when
Q	šu	mīn	wēn	aymat
UnC	šuma	mīnma	wēnma	aymatma
CoR	šu(ma)	mīnma	wēn	lamma
FR	šu	illi+RES	mahallma	lamma
HR	illi+RES	illi+RES	mahallma	illi+RES

Table: Interrogative and (cor)relative constructions in Syrian Arabic

- The hierarchy is defined not based on language, but based on particular *wh*-items.
- Syrian also demonstrates the existence of suppletion: *wēn* ‘where’ (Q/CoR) – *mahall* ‘place’ (FR/HR).
- The *ma* morpheme in Syrian Arabic is still to be explored; being highly polysemous/polyfunctional, it might be ambivalent between the ever morpheme (obligatory in unconditionals) and a relativizer (*mahallma* ≈ place.REL).
- Cf. English *what* (✗HR) vs. *who* (✓HR).

Nanosyntax of relative pronouns

- Labels adopted from the clausal spine; cross-categorial fseq
- NP provides nominal restriction (ϕ -features, PLACE, TIME, etc.)
- Foc_{Cl} (\approx Wh) turns the core indefinite to focus
- Top_{R} turns the focus to a topical referent
- Force_{R} (\approx Rel) encodes embedding (relation to CP-external D)
- The functional heads operate quasi-compositionally: not on metalanguage but on referential indices.
- HRs left aside. . .

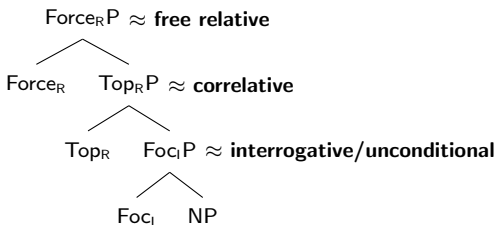
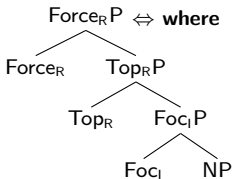


Figure: Structure of interrogative/(cor)relative pronouns

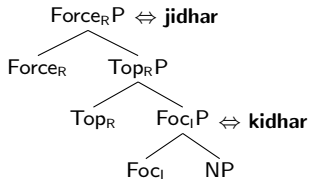
Nanosyntactic lexical entries and spellout

- The usual nanosyntactic spellout principles apply (phrasal spellout, superset, elsewhere; Starke 2009)
- Precise technical implementation left aside

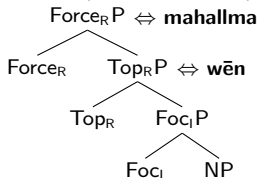
English (German, Czech)



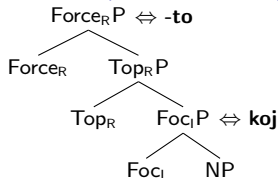
Hindi



Syrian (Turkish, Chinese)



Bulgarian (Hungarian, Greek)



Diachronic evidence

At least some diachronic evidence suggests that free and headed relative *wh*-based pronouns do not develop directly from interrogative ones, but via unconditional and then correlative ones.

- Mitrenina (2012): The case of Russian *kotoryj* ‘which’: interrogative → “pseudo-correlative” (between unconditional and correlative) → relative; replaced by *kakoj* in the interrogative function
- Belyaev & Haug (2014): Discussion of multiple Indo-European languages; indefinite in conditionals → correlative → relative.
- Gisborne & Truswell (2018): English

There are also accounts that assume a “direct” interrogative → free/light-headed relative → headed relative development.

- Heine & Kuteva (2006): embedded interrogative → free relative → headed relative
- Bacskai-Atkari & Dékány (to appear): Hungarian *az NP* ‘that NP’ → *az ki* ‘that who’ → *aki* ‘REL.who’

Background theory: int \rightarrow ind

- Wh-indeterminates are non-quantificational restricted variables (here and elsewhere: focus variables).
- Wh-affixes/morphemes indicate a relation, possibly long-distance, with a higher propositional quantifier, possibly more of them.

- (14) a. [Q] ... **where** ...
 b. [∃] ... **somewhere** ...
 c. [∀] ... EXH ... **wherever/anywhere** ...
 d. \neg [∃] ... **nowhere** ...

- The theory could be combined with a choice-functional approach to wh-based indeterminates. Yanovich 2005; Cable 2010

Beghelli & Stowell 1997; Kratzer & Shimoyama 2002; Aloni 2003, 2007; Butler 2004; Zeijlstra 2004; Beck 2006 (often different technical implementations)

Related: wh-indefinites are existential quantifiers associated with exhaustification over propositional alternatives (Chierchia 2013; Szabolcsi 2019; Fălăuş & Nicolae 2020)

Application to (cor)relatives

Building on the insights from the int → ind theory, illustrated here in (15a,b), I propose a similar account of (cor)relative pronouns, where the functional heads (Top, Force) are in a relationship with a c-commanding quantificational head, either propositional (CoR-Op) or determiner (Det) – (16a,b).

(15) a. **Questions**

Beck 2006

[Q] ... [_{FocP} **where**] ...

b. **Unconditionals**

Rawlins 2013

[M] Cond-Op [_A [_{Q_{EXH}} [_{FocP} **wher**ever] ...] [_C ...]

(16) a. **Correlatives**

CoR-Op [_A ... [_{TopP} **aki**] ...] [_C ... [_{DemP} **az**] ...]

b. **(Free) relatives**

Det [_{ForceP} **aki** ...]

Interrogative pronoun

- The NP (here PLACE) is Heim's (1982) indefinite (restricted variable).
- Foc_i turns an ordinary index to a focus index, interpreted by the designated assignment h ; it is like the standard F-marker, but gets rid of the ordinary meaning (a "subcompositional" process).
- The resulting meaning is identical to the one proposed by Beck (2006) for interrogative wh-words, which builds on Kratzer's (1991) and Wold's (1996) theory of focus interpretation; the meaning is the focus value; ordinary value is undefined.

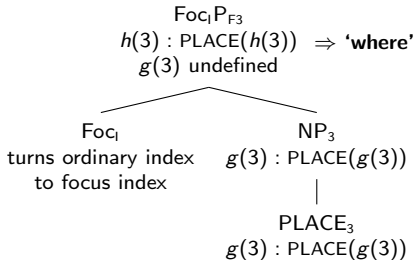
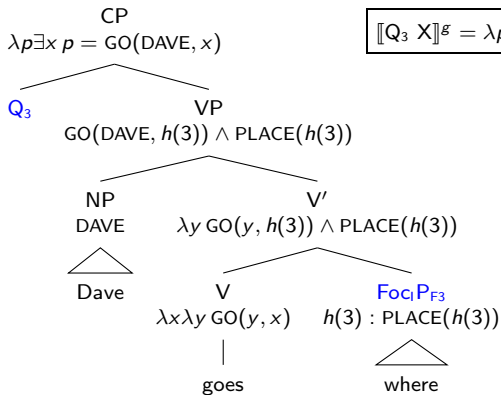


Figure: Representation of the interrogative pronoun

Interrogative clause



$$\llbracket Q_3 X \rrbracket^g = \lambda p \exists x p = \llbracket X \rrbracket^{g, h[3 \rightarrow x]} \quad (\text{Beck 2006})$$

Figure: Representation of the interrogative clause

Correlative construction

$\llbracket \text{Cond-Op } A \text{ B} \rrbracket^g = \forall w \llbracket A \rrbracket(w) \rightarrow \llbracket B \rrbracket(w)$ (Kratzer 2012; simplified)

$\llbracket \text{CoR-Op}_3 \text{ A B} \rrbracket^g = \forall w, x \llbracket A \rrbracket^{g[3 \rightarrow x]}(w) \rightarrow \llbracket B \rrbracket^{g[3 \rightarrow x]}(w)$ (proposal)

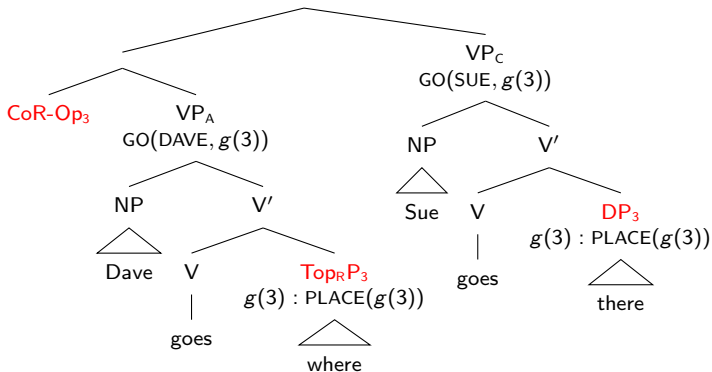


Figure: Representation of the correlative construction

Correlatives: Discussion

CoR-Op

- Just like with Cond-Op, the semantic nature of CoR-Op determines the type of correlative (generic, modal, extensional). Declerck & Reed 2001; Haegeman 2003
- Languages can differ in which operators can be “adapted” (from conditional) to correlative use, with generic ones being the most likely ones (= **puzzle**, to me).

In-situ vs. ex-situ

- Correlative pronouns can in principle be **in-situ** (Hindi, Turkish, Chinese) or **ex-situ** (most European languages).
- My proposal relies on in-situ semantics (binding) of correlative pronouns. Correspondingly, correlative antecedents/consequents have propositional semantics (like questions or conditionals). Bittner 2001; Brasoveanu 2008
- Cf. in-situ semantics for in-situ correlatives (Liu 2016; Demirok 2017); ex-situ semantics for in-situ correlatives (Srivastav 1991; Chen 2019).

Correlatives: Discussion

In-situ vs. ex-situ

- Ex-situ correlatives could in principle be free relatives. But there's also evidence that in Slavic languages, correlatives, which are obligatorily ex-situ, do not have a free-relative syntax.
- That is, they are not DPs/NPs (islands), but CPs (transparent for extraction); also see Pancheva Izvorski (2000).

- (17) a. *Extraction from a correlative* ✓
 To je ten chlap, kterému₁ [CoR co dáš t₁], to ztratí. Cz
 that is that man which.DAT what.ACC give.2SG that lose.3SG
- b. *Extraction from a free relative* ✗
 *To je ten chlap, kterému₁ ztratí [FR co dáš t₁].
 that is that man which.DAT lose.3SG what.ACC give.2SG
 (Intended:) 'That's the man such that he will lose what(ever) you give him.'

Biskup & Šimík 2019

Correlatives: Discussion

Correlative/Unconditional mix

- Rudin (2009) shows that the presence/absence of *-to* on *wh*-words in Bulgarian multiple-*wh* correlatives correlates with interpretation; cf. (18).
- In the present analysis, correlative *wh*-words (with *-to*) get bound by CoR-Op, while non-correlative (without *-to*) don't. The latter are interpreted as *wh*-words in unconditionals. (Logical representations are simplified.)

- (18) a. **Kogoto kakvoto** go boli, za nego prikazva. *Bg*
 who.REL what.REL him hurts about it talks
 'The person who has something hurting, talks about it.' "single pair"
 $\forall w, x, y[\text{HURT}(x, y, w) \rightarrow \text{TALK ABOUT}(x, y, w)]$
 If something_{*i*} is hurting somebody_{*j*}, the person_{*j*} talks about that thing_{*i*}.'
- b. **Kogo kakvoto** go boli, za nego prikazva.
 who what.REL him hurts about it talks
 'Everyone talks about whatever is hurting them.' "pair list"
 $\forall x[\text{PERSON}(x) \rightarrow \forall w, y[\text{HURT}(x, y, w) \rightarrow \text{TALK ABOUT}(x, y, w)]]$
 For every person_{*j*} it holds that if something_{*i*} is hurting that person_{*j*}, that person_{*j*} talks about that thing_{*i*}.

Free relative pronoun

- Force is selected for (Rizzi 1997) → in-situ interpretation impossible.
- Selection by a nominal determiner entails selection of a property → **lambda-abstraction** is necessary.
- The free relative pronoun ForceP moves to the left periphery where it is interpreted as a lambda abstractor, contributing the nominal restriction (Heim & Kratzer 1998; Adger & Ramchand 2005). Besides the restriction, the node does not contribute its own meaning, it only contributes to the meaning of its mother.

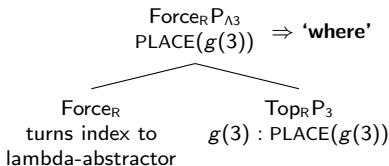


Figure: Representation of the free relative pronoun

Free relative clause

- I assume that the relative pronoun projects (cf. Donati & Cecchetto 2011).
- Alternatively, Force_R is base-generated in the left periphery and Top_R moves into its complement (submerge; Pesetsky 2013; multidominance version with Top_RP “in-situ”: Johnson 2012)

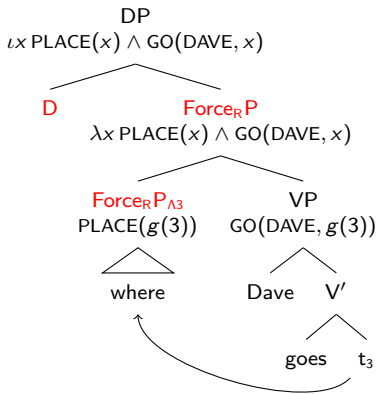


Figure: Representation of the free relative clause

Free relatives: Discussion

No relative wh-in-situ

- There is no wh-in-situ in free (or headed) relatives (originally discussed by Schwartz 1971; cf. de Vries 2005).
- What comes closest to an exception: Tsez ever free relatives (Polinsky 2015); Hittite headed relatives (Huggard 2015).

Light-headed relatives

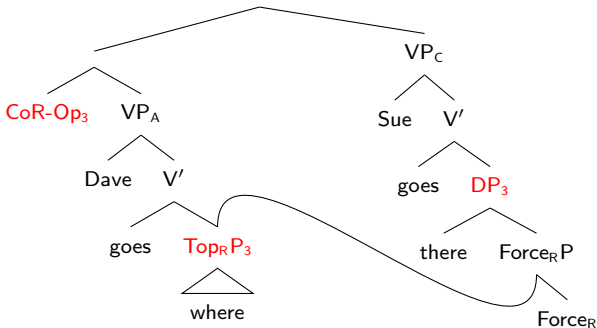
- The analysis is directly applicable to light-headed relatives (Citko 2004). That is a good result, as it is very rare for light-headed relative pronouns to be different from free relative pronouns (potential exception: English, which seems to use headed relative pronouns – still in line with the implicational hierarchy above).

- (19) a. Pozval {toho / každého / někoho}, koho včera potkal. Cz
 invited.PFV.SG.M that everybody somebody who yesterday met.PFV.SG.M
 'He invited {that / every / some} person that he met yesterday.'
- b. ..._{[VP invited} [_{DP} **D** that / everybody / somebody] [_{ForceP} [_{ForceP} who] he met]]]

Free relatives: Discussion

Connection to correlatives

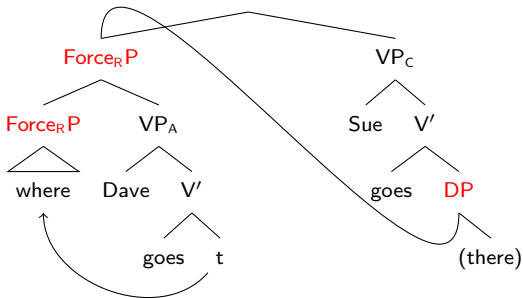
- Diachronic link between correlatives and free/light-headed relatives (see above).
- Synchronically, not always easy to tell the two apart (in some cases: correlatives ≈ left-dislocated free relatives).
- Present take on the synchrony, multi-dominance-style:



Free relatives: Discussion

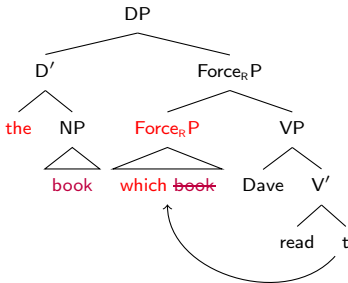
Connection to correlatives

- A correlative as a free relative if it contains wh-movement, which can be reanalyzed as Force-related.



Headed relatives: Discussion

- In headed relatives with *wh*-words, which are arguably matching relatives (Aoun & Li 2003; Szczegielniak 2005; Cinque 2020), the *wh*-word (phrase) involves two kinds of dependencies:
 1. to the external D (D–CP analysis);
 2. to the external NP (matching).
- A possible analysis within the present approach (assuming a two-argument D; Nowak 2014; Ahn 2019):



- An open question is how to model the dependency between the NPs.
- Interesting twist in Greek: FR *opjos* and HR *o opios*

Modal existential constructions: Discussion

Puzzle: Wh-words in MECs exhibit apparently conflicting properties:

- They wh-move obligatorily (trigger lambda-abstraction) and yet
- they have no relative morphemes (potential exception: Hungarian).

(23) a. Nimam [MEC s {čime / *čimer} pomiti posodo]. *Sln*
 NEG.have.1SG with what what.REL wash.INF dishes
 ‘I have nothing to clean the dishes with.’

b. *Nimam [MEC pomiti posodo s čime]. *Sln*
 NEG.have.1SG wash.INF dishes with what
 Intended: ‘I have nothing to clean the dishes with.’ Šimík 2011

Potential solution:

- Their “licensing” operator is not of the right kind to license Top/Force projections.
- They are FocPs turned directly to a Λ -index (triggering lambda-abstraction).

Summary

- Relative pronouns are not just sometimes identical to interrogative ones, they can be **morphologically derived** from them (int → rel).
- This process is similar to the more common derivation of indefinites from interrogative pronouns (int → ind).
- I proposed that relative pronouns, just like indefinite ones, may be in need of **licensing from a higher quantificational operator**. In correlatives, this operator is akin to Kratzerian conditional modal; in free (and light-headed) relatives, this operator is a definite or quantificational determiner.
- Morphological evidence suggests the following structural containment:

(24) Free relative pronoun \supset Correlative pronoun \supset Interrogative pronoun

- I proposed account for the morphological containment in a nanosyntactic fashion, building on the familiar hierarchy Force > Top > Foc.

Summary

THANK YOU!

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References I

- Adger, David & Gillian Ramchand. 2005. Merge and move: Wh-dependencies revisited. *Linguistic Inquiry* 36(2). 161–193. <https://doi.org/10.1162/0024389053710729>.
- Ahn, Dorothy. 2019. *THAT thesis: A competition mechanism for anaphoric expressions*. Cambridge, MA: Harvard University dissertation. <https://ling.auf.net/lingbuzz/004742>.
- Aloni, Maria. 2003. Free choice in modal contexts. In Matthias Weisgerber (ed.), *Proceedings of Sinn und Bedeutung* 7, 25–37. Konstanz: University of Konstanz. <https://doi.org/10.18148/sub/2003.v7i0.789>.
- Aloni, Maria. 2007. Free choice and exhaustification: An account of subtrigging effects. In Estela Puig-Waldmüller (ed.), *Proceedings of Sinn und Bedeutung* 11, 16–30. Barcelona: Pompeu Fabra University. <https://doi.org/10.18148/sub/2007.v11i0.628>.
- Aoun, Joseph & Yen-hui Audrey Li. 2003. *Essays on the representational and derivational nature of grammar: The diversity of wh-constructions*. Cambridge, MA: MIT Press.
- Arkadiev, Peter & Ivano Caponigro. to appear. Conveying content questions without wh-words: Evidence from Abaza. In *Proceedings of Sinn und Bedeutung* 25, <https://ling.auf.net/lingbuzz/005441>.
- Arsenijević, Boban. 2009. {Relative {conditional {correlative clauses}}}. In Anikó Lipták (ed.), *Correlatives crosslinguistically*, 131–156. Amsterdam: John Benjamins. <https://doi.org/10.1075/lfab.1.06ars>.
- Bacskai-Atkari, Julia & Éva Dékány. to appear. Cyclic changes in Hungarian relative clauses. In Jóhannes Gísli Jónsson & Thórhallur Eythórsson (eds.), *Syntactic features and the limits of syntactic change*, Oxford: Oxford University Press.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14(1). 1–56. <https://doi.org/10.1007/s11050-005-4532-y>.
- Beghelli, Fillipo & Timothy Agnus Stowell. 1997. Distributivity and negation: The syntax of each and every. In Anna Szabolcsi (ed.), *Ways of scope taking*, 71–107. Dordrecht: Kluwer.
- Belyaev, Oleg & Dag Haug. 2014. The genesis of wh-based correlatives: From indefiniteness to relativization. Presented at Sinn und Bedeutung 19, Göttingen, September 2014.
- Bhatt, Rajesh. 2011. Hindi-Urdu unconditionals with *caahē*. Manuscript, University of Massachusetts, Amherst, MA.
- Biskup, Petr & Radek Šimík. 2019. Structure of conditional and (cor)relative clauses: New evidence from locality. In Maggie Baird & Jonathan Pesetsky (eds.), *NELS 49: Proceedings of the 49th Annual Meeting of the North East Linguistic Society, Volume 1*, 135–144. Amherst, MA: GLSA Publications.
- Bittner, Maria. 2001. Topical referents for individuals and possibilities. In Rachel Hastings, Brandon Jackson & Zsófia Zvolenszky (eds.), *SALT 11: Proceedings from the 11th Conference on Semantics and Linguistic Theory*, 36–55. Ithaca, NY: Cornell University. <https://doi.org/10.3765/salt.v11i0.2854>.

References II

- Brasoveanu, Adrian. 2008. Uniqueness effects in correlatives. In Atle Grønne (ed.), *Proceedings of Sinn und Bedeutung 12*, 47–65. Oslo: ILOS.
- Butler, Jonny. 2004. *Phase structure, phrase structure, and quantification*: University of York dissertation.
- Cable, Seth. 2010. *The grammar of Q: Q-particles, wh-movement, and pied-piping*. Oxford: Oxford University Press.
- Caponigro, Ivano. 2003. *Free not to ask: On the semantics of free relatives and wh-words cross-linguistically*. Los Angeles: University of California dissertation.
- Chen, Sherry Yong. 2019. Deriving wh-correlatives in Mandarin Chinese: Wh-movement and (island) identity. Manuscript, MIT.
<https://ling.auf.net/lingbuzz/004854>.
- Chierchia, Gennaro. 2013. *Logic in grammar: Polarity, free choice, and intervention*. Oxford: Oxford University Press.
- Cinque, Guglielmo. 2020. *The syntax of relative clauses: A unified analysis*. Cambridge: Cambridge University Press.
<https://doi.org/10.1017/9781108856195>.
- Citko, Barbara. 2004. On headed, headless, and light-headed relatives. *Natural Language & Linguistic Theory* 22(1). 95–126.
<https://doi.org/10.1023/B:NALA.0000005564.33961.e0>.
- Daskalaki, Evangelia. to appear. Types of relative pronouns. In *Syntactic architecture and its consequences: Synchronic and diachronic perspectives, Volume 1: Syntax inside the grammar*, Berlin: Language Science Press.
- Dayal, Veneeta. 1997. Free relatives and ever: identity and free choice readings. In Aaron Lawson (ed.), *SALT 7: Proceedings from the 7th Conference on Semantics and Linguistic Theory*, 99–116. Ithaca, NY: CLC Publications.
<http://journals.linguisticsociety.org/proceedings/index.php/SALT/article/view/2787>.
- Declerck, Renaat & Susan Reed. 2001. *Conditionals: A comprehensive empirical analysis*. Amsterdam: Mouton de Gruyter.
- Demirok, Ömer. 2017. A compositional semantics for Turkish correlatives. In Aaron Kaplan, Abby Kaplan, Miranda K. McCarvel & Edward J. Rubin (eds.), *WCCFL 34: Proceedings of the 34th West Coast Conference on Formal Linguistics*, 159–166. Somerville, MA: Cascadia Proceedings Project. <http://lingref.com/cpp/wccfl/34/paper3308.pdf>.
- Donati, Caterina & Carlo Cecchetto. 2011. Relabeling heads: A unified account for relativization structures. *Linguistic Inquiry* 42(4). 519–560. <https://doi.org/10.1162/LING-a.00060>.
- É. Kiss, Katalin. 2002. *The syntax of Hungarian*. Cambridge: Cambridge University Press.
- Fălăuş, Anamaria & Andreea Nicolae. 2020. Additive free choice items in unconditionals. Presented at *Sinn und Bedeutung 25* (London) and *SinFonIJA 13* (Budapest), September 2020.
- Franks, Steven & Catherine Rudin. 2015. Invariant -to in Bulgarian. In Miriam Shrager, Edna Andrews, George Fowler & Steven Franks (eds.), *Studies in accentology and Slavic linguistics in honor of Ronald F. Feldstein*, 99–136. Bloomington, IN: Slavica.

References III

- Fuß, Eric & Günther Grewendorf. 2014. Freie Relativsätze mit d-Pronomen. *Zeitschrift für Sprachwissenschaft* 33(2). 165–214.
- Giannakidou, Anastasia & Lisa Lai-Shen Cheng. 2006. (in)definiteness, polarity, and the role of wh-morphology in free choice. *Journal of Semantics* 23(2). 135–183. <https://doi.org/10.1093/jos/ffl001>.
- Gisborne, Nikolas & Robert Truswell. 2018. Parallel evolution of relative clauses in Indo-European. Presented at the AGM of the Philological Society, June 2018.
- Grosu, Alexander & Koji Hoshi. 2019. Japanese internally-headed and doubly-headed relative constructions, and a comparison of two approaches. *Glossa: a journal of general linguistics* 4(1). 128. 1–23. <https://doi.org/10.5334/gjgl.1035>.
- Haegeman, Liliane. 2003. Conditional clauses: External and internal syntax. *Mind & Language* 18(4). 317–339. <https://doi.org/10.1111/1468-0017.00230>.
- Hagstrom, Paul. 1998. *Decomposing questions*. Cambridge, MA: MIT dissertation.
- Haspelmath, Martin. 1997. *Indefinite pronouns*. Oxford: Oxford University Press.
- Heim, Irene. 1982. *The semantics of definite and indefinite noun phrases*. Amherst, MA: University of Massachusetts dissertation. <https://scholarworks.umass.edu/dissertations/AAI8229562>.
- Heim, Irene & Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.
- Heine, Bernd & Tania Kuteva. 2006. *The changing languages of Europe*. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199297337.001.0001>.
- Hiraiwa, Ken. 2017. Internally headed relative clauses. In Martin Everaert & Henk van Riemsdijk (eds.), *The Wiley Blackwell companion to syntax, Second Edition*, John Wiley & Sons. <https://doi.org/10.1002/9781118358733.wbsyncom028>.
- Huggard, Mattyas. 2015. *Wh-words in Hittite: A study in syntax-semantics and syntax-phonology interfaces*. Los Angeles, CA: University of California dissertation. <https://escholarship.org/uc/item/1gb9f3dg>.
- Johnson, Kyle. 2012. Towards deriving differences in how wh-movement and QR are pronounced. *Lingua* 122(6). 529–553. <https://doi.org/10.1016/j.lingua.2010.11.010>.
- Kellert, Olga. 2017. Interrogatives. In Andreas Dufter & Elisabeth Stark (eds.), *Manual of Romance morphosyntax and syntax*, 569–602. Berlin: de Gruyter. <https://doi.org/10.1515/9783110377088-016>.
- Kratzer, Angelika. 1991. The representation of focus. In Arnim von Stechow & Dieter Wunderlich (eds.), *Semantics: An international handbook of contemporary research*, 825–834. Berlin: Walter de Gruyter. <https://doi.org/10.1515/9783110126969.10.825>.
- Kratzer, Angelika. 2012. *Modals and conditionals: New and revised perspectives*. Oxford: Oxford University Press.

References IV

- Kratzer, Angelika & Junko Shimoyama. 2002. Indeterminate pronouns: The view from Japanese. In Yukio Otsu (ed.), *Proceedings of the Third Tokyo Conference on Psycholinguistics*, 1–25. Tokyo: Hituzi Syobo.
- Lipták, Anikó. 2012. Correlative topicalization. *Acta Linguistica Academica* 59(3). 245–302. <https://doi.org/10.1556/ALing.59.2012.3.1>.
- Liu, Mingming. 2016. Mandarin wh-conditionals as interrogative conditionals. In Mary Moroney, Carol-Rose Little, Jacob Collard & Dan Burgdorf (eds.), *SALT 26: Proceedings from the 26th Conference on Semantics and Linguistic Theory*, 814–835. Linguistic Society of America. <https://doi.org/10.3765/salt.v26i0.3955>.
- Mitrenina, Olga V. 2012. The syntax of pseudo-correlative constructions with the pronoun *kotoryj* ('which') in Middle Russian. *Slověne* 1(1). 61–73. <https://doi.org/10.31168/2305-6754.2012.1.1.4>.
- Nowak, Ethan. 2014. Demonstratives without rigidity or ambiguity. *Linguistics and Philosophy* 37(5). 409–436. <https://doi.org/10.1007/s10988-014-9159-3>.
- Onea, Edgar. 2020. Indefinite–interrogative affinity. In Daniel Gutzmann, Lisa Matthewson, Cécile Meier, Hotze Rullmann & Thomas E. Zimmermann (eds.), *The Wiley Blackwell companion to semantics*, John Wiley & Sons. <https://doi.org/10.1002/9781118788516.sem117>.
- Pancheva Izvorski, Roumyana. 2000. *Free relatives and related matters*. Philadelphia, PA: University of Pennsylvania dissertation. <https://repository.upenn.edu/dissertations/AAI9965537>.
- Pesetsky, David. 2013. *Russian case morphology and the syntactic categories*. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/9780262019729.001.0001>.
- Polinsky, Maria. 2015. Tsez syntax: A description. Manuscript, University of Maryland. <https://ling.auf.net/lingbuzz/002315>.
- Pospišil, Adam, Ouras Aljani & Radek Šimik. in prep. Interrogative and (cor)relative pronouns in Syrian Arabic. Manuscript, Charles University and University of Nantes.
- Ramchand, Gillian. 1997. Questions, polarity, and alternative semantics. In *NELS 27: Proceedings of the 27th Annual Meeting of the North East Linguistic Society*, 383–396. Amherst, MA: GLSA Publications.
- Rawlins, Kyle. 2013. (Un)conditionals. *Natural Language Semantics* 40(2). 111–178. <https://doi.org/10.1007/s11050-012-9087-0>.
- van Riemsdijk, Henk. 2017. Free relatives. In Martin Everaert & Henk van Riemsdijk (eds.), *The Wiley Blackwell companion to syntax: Second edition*, chap. 116. Wiley Blackwell. <https://doi.org/10.1002/9781118358733.wbsyncom116>.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar: A handbook of generative syntax*, 281–337. Dordrecht: Kluwer.
- Rooth, Mats. 1992. A theory of focus interpretation. *Natural Language Semantics* 1(1). 75–116. <https://doi.org/10.1007/BF02342617>.

References V

- Rudin, Catherine. 2009. The Bulgarian relative marker *-to*. In Steven Franks, Vrinda Chidambaram & Brian Joseph (eds.), *A linguist's linguist: Studies in South Slavic linguistics in honor of E. Wayles Browne*, 403–422. Bloomington, IN: Slavica Publishers.
- Schwartz, Arthur. 1971. General aspects of relative clause formation. In *Working Papers on Language Universals 6*, 139–171. Stanford University. <https://eric.ed.gov/?id=ED094567>.
- Šimik, Radek. 2011. *Modal existential wh-constructions*. Groningen: University of Groningen dissertation. http://www.lotpublications.nl/Documents/269_fulltext.pdf.
- Šimik, Radek. 2020a. Doubling unconditionals and relative sluicing. *Natural Language Semantics* 28(1). 1–21. <https://doi.org/10.1007/s11050-019-09157-4>.
- Šimik, Radek. 2020b. Free relatives. In Daniel Gutzmann, Lisa Matthewson, Cécile Meier, Hotze Rullmann & Thomas E. Zimmermann (eds.), *The Wiley Blackwell companion to semantics*, John Wiley & Sons. <https://doi.org/10.1002/9781118788516.sem093>.
- Srivastav, Veneeta. 1991. The syntax and semantics of correlatives. *Natural Language & Linguistic Theory* 9(4). 637–686. <https://doi.org/10.1007/BF00134752>.
- Starke, Michal. 2009. Nanosyntax: A short primer to a new approach to language. In Peter Svenonius, Gillian Ramchand, Michal Starke & Knut Tarald Taraldsen (eds.), *Tromsø Working Papers on Language and Linguistics: Nordlyd 36.1 [Special issue on nanosyntax]*, 1–6. Tromsø: CASTL. <http://www.ub.uio.no/baser/nordlyd>.
- Szabolcsi, Anna. 2015. What do quantifier particles do? *Linguistics and Philosophy* 38(2). 159–204. <https://doi.org/10.1007/s10988-015-9166-z>.
- Szabolcsi, Anna. 2018. Two types of quantifier particles: Quantifier-phrase internal vs. heads on the clausal spine. *Glossa: a journal of general linguistics* 3(1). 69. 1–32. <https://doi.org/10.5334/gjgl.538>.
- Szabolcsi, Anna. 2019. Unconditionals and free choice unified. In Katherine Blake, Forrest Davis, Kaelyn Lamp & Joseph Rhyne (eds.), *SALT 29: Proceedings of the 29th Semantics and Linguistic Theory Conference*, 320–340. Washington, DC: Linguistic Society of America. <https://doi.org/10.3765/salt.v29i0.4616>.
- Szczegielniak, Adam. 2005. *Relativization that you did...* Cambridge, MA: Harvard University dissertation. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:26517269>.
- de Vries, Mark. 2002. *The syntax of relativization*. Amsterdam: University of Amsterdam dissertation. https://www.lotpublications.nl/Documents/053_fulltext.pdf.
- de Vries, Mark. 2005. The fall and rise of universals on relativization. *Journal of Universal Language* 6(1). 125–157. <https://doi.org/10.22425/jul.2005.6.1.125>.

References VI

- Wold, Dag E. 1996. Long distance selective binding: The case of focus. In Teresa Galloway & Justin Spence (eds.), *SALT 6: Proceedings from the 6th Conference on Semantics and Linguistic Theory*, 311–328. Ithaca, NY: CLC Publications.
<https://doi.org/10.3765/salt.v6i0.2766>.
- Yanovich, Igor. 2005. Choice-functional series of indefinites and Hamblin semantics. In Effi Georgala & Jonathan Howell (eds.), *SALT 15: Proceedings from the 15th Conference on Semantics and Linguistic Theory*, 309–326. Ithaca, NY: CLC Publications.
<https://doi.org/10.3765/salt.v15i0.2921>.
- Zeijlstra, Hedde. 2004. *Sentential negation and negative concord*. Amsterdam: University of Amsterdam dissertation.
https://www.lotpublications.nl/Documents/101_fulltext.pdf.
- Zimmermann, Malte. 2018. Embedded questions and concealed relative questions in Hausa and Akan. In Elizabeth Bogal-Allbritten & Elizabeth Coppock (eds.), *Proceedings of TripleA 4*, 1–16. Tübingen: University of Tübingen.
<https://doi.org/10.15496/publikation-24505>.