

On evidential relative clauses

The case of Czech *jak*-relatives

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Research questions

What is the difference between Czech relative clauses introduced by *co* 'what' vs. *jak* 'how' (and other kinds of relatives)?

- (1) a. honil toho medvěda **jak** furt utíkal na ten sever K
 chased DEM bear how.C(OMP) always ran.away to DEM north
 'he chased the bear that kept running away to the north'
- b. honil toho medvěda **co** furt utíkal na ten sever

How do *jak*-relatives relate to other kinds of *jak*-clauses?

- (2) a. Viděl medvěda, **jak** žere [= žrát] naše zásoby. PSEUDORELATIVE
 saw bear how eats eat.INF our supplies
 'He saw the bear eat our supplies.'
- b. Vyprávěl nám, **jak** byli na dovolené. EVENTIVE JAK
 told us how were on vacation
 'He told us how they were on vacation.'
- c. Víš, **jak** jsme byli v Praze? RECOGNITIONAL JAK
 know.2SG how AUX.1PL were in Prague
 'Do you know/remember how we were in Prague?'

What specific properties do *jak*-relatives have?

Answers

What is the difference between Czech relative clauses introduced by *co* 'what' vs. *jak* 'how' (and other kinds of relatives)?

- *Jak*-relatives have a narrower distribution and a more specific meaning than *co*-relatives.

How do *jak*-relatives relate to other kinds of *jak*-clauses?

- *Jak*-relatives are real relatives, not e.g. pseudorelatives.

What specific properties do *jak*-relatives have?

- *Jak*-relatives denote an identifying property of a referent whose existence and familiarity is presupposed.
- *Jak*-relatives have an evidential component.

Theoretical implications

- *Jak*-relatives are a new kid on the block of epistemic/evidential expressions in the nominal domain (cf. Alonso-Ovalle & Menéndez-Benito 2015)
- Eventually a contribution to the semantic analysis of complementizers (Moulton 2009; Arsenijević 2009; Simeonova 2019; Umbach et al. 2019; a.o.).

Relativization strategies

Types of how-clauses

Jak vs. co

Semantics of *jak*-relatives

Corpus

Relativization strategies

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Types of relative clauses in Czech

Czech affords a whole range of relativization strategies. Those in (3) appear synonymous at first sight. (4) involves kind relativization.

- (3) a. ta rukavice, **kerou** našel na chodníku WH
DEM glove which.ACC found on sidewalk
- b. ta rukavice, **již** našel na chodníku REL
DEM glove her.ACC.REL
- c. ta rukavice, **co (ji)** našel na chodníku CO.COMP(+RES)
DEM glove what.C her.ACC found on sidewalk
- d. ta rukavice, **jak (ji)** našel na chodníku JAK.COMP(+RES)
DEM glove how.C her.ACC found on sidewalk
'the/that glove that he found on the sidewalk'
- (4) taková rukavice, **jakou** našel na chodníku WH(KIND)
such glove how.ADJ.ACC found on sidewalk
'such / the kind of glove that he found on the sidewalk'

The differences are apparently primarily due to **register**: the wh-types are neutral, the relative-pronoun type (*již*) is formal, the complementizer (*co/jak*) type is colloquial/non-standard.

Semantic differences: comparison class for superlatives

There are some **semantic differences** too (Zubatý 1918; Šimík 2008). One example is the capacity to function as a **comparison class (CC) for superlatives**. This function is common for wh-kind-relatives and co-relatives without resumption, rare to ungrammatical for the rest.

- (5) a. to byla ta nejbáječnější věc, **jakou** kdy spatřil K
 it was DEM most.wonderful thing how.ADJ.ACC EVER saw
- b. to byla ta nejbáječnější věc, **co** kdy spatřil
 it was DEM most.wonderful thing what.C EVER saw
- c. ?to byla ta nejbáječnější věc, **kterou** kdy spatřil
 it was DEM most.wonderful thing which.ACC EVER saw
- d. ?to byla ta nejbáječnější věc, **již** kdy spatřil
 it was DEM most.wonderful thing her.ACC.REL EVER saw
- e. *to byla ta nejbáječnější věc, **co ji** kdy spatřil
 it was DEM most.wonderful thing what.C her.ACC EVER saw
- f. *to byla ta nejbáječnější věc, **jak (ji)** kdy spatřil
 it was DEM most.wonderful thing how.C her.ACC EVER saw
 (Intended:) 'It was the most wonderful thing he ever saw.'

→ the first relevant difference between *co* and *jak*

Semantic differences

	jaký	syn2015			oral v1	
		co	který	jenž	jak	co
total	15435	15811	604201	56631	572	706
superlative CC	1479	344	1326	99	0	14
	9.58%	2.17%	0.22%	0.17%		1.98%
coefficient (total)	1.00	.55	1.00	1.00		
coefficient (superlative)	.98	.90	.45	.40		

Tabulka: Use of relative clauses as superlative comparison classes (by type)

- Query (total): [tag="N.*"] [word=","] [tag="PJ.*"] / [lemma="který"] / [lemma="jaký"] / [word="co"] (syn2015)
- Query (superlative): [tag="A.....3.*"] [tag="N.*"] [word=","] [tag="PJ.*"] / [lemma="který"] / [lemma="jaký"] / [word="co"] (syn2015)
- Coefficient (total): proportion of relevant hits (of relative clauses) in 40 randomly selected hits (1.00 = 100%).
- Coefficient (superlative): proportion of relevant hits (superlative comparison class) in 40 randomly selected hits.
- Absolute frequencies are multiplied by the appropriate coefficient.
- The syn2015 vs. oral v1 difference for *co* is not significant ($\chi^2 = .11, p = .74$) = no difference in register.

Semantic differences

Similar contrast for the relativization of predicates:

- (6) a. Není to takový neznaboh, za **jakého** ho máte.
 NEG.is it such unbeliever for how.ADJ.ACC him have.2PL
- b. ?Není to takový neznaboh, za **kterého** ho máte.
 NEG.is it such unbeliever for which.ACC him have.2PL
- c. ?Není to takový neznaboh, za **nějž** ho máte.
 NEG.is it such unbeliever for him.ACC.REL have.2PL
- d. *Není to takový neznaboh, **co** ho za **něj** máte.
 NEG.is it such unbeliever what.C him for him have.2PL
- e. *Není to takový neznaboh, **jak** ho za **něj** máte.
 NEG.is it such unbeliever how.C him for him have.2PL
 'He's not such an / the unbeliever you take him for.'

Further well-studied differences

The accusative resumptive is optional; non-accusative obligatory.

- (7) a. se nemůžu dostat do kalhot **co** sem si **[(je)]** koupila
 REFL NEG.can.1SG get to pants what.C AUX.1SG REFL them bought
 minulej rok K
 last year
 'I can't fit into the pants I bought last year.'
- b. vod těch lidí **co jim** [cf. *Ø] patří příjezdová cesta K
 from DEM people what.C them belong access road
 'from the people that the driveway belongs to'

The presence/absence of the resumptive in cases like (7a) is governed by various factors with largely probabilistic rather than categorical influence (Toman 1998; Čech & Šimík 2006; Šimík 2008; Fried 2010, 2011; Fried & Lipská 2020):

- semantic factors (see above)
- restrictiveness of the RC (appositive require resumptive)
- quantificational determiner (quantificational heads of RC make resumptives less likely)
- animacy (animacy/human reference make resumptives more likely)
- grammatical number (singular makes resumptives more likely)

Relativization strategies

Types of how-clauses

Jak vs. co

Semantics of *jak*-relatives

Corpus

Czech *jak* is highly polyfunctional

Canonical how: Manner, method, instrument. . .

Sæbø 2015

- (8) A **Jak** jsi jel?
 how AUX.2SG drove
 'How did you drive?'
 B Slowly. / In first gear. / By train. / . . .

Causal how (\approx *why*)

Fleury & Tovena to appear

- (9) **jak** může být tak nelidský?
 how can.3SG be so unhuman
 'How can you be so unhuman?'

K

Eventive how (\approx *that* (COMP))

Legate 2010

- (10) a. Soused vyprávěl, že [**jak**] už sedí, jí a pije
 neighbor said that how already sit eat and drink
 'The neighbor said that [how] he was already sitting, eating and drinking.'
 b. Velice dobře si pamatuji, že [**jak**] venku bylo teplo,
 very well REFL remember that how outside was warm
 'I remember very well that [how] it was warm outside.'

K

K

Czech *jak* is highly polyfunctional

Correlative recognitional *jak*

- (11) **Jak** jsme mluvili o osvětlení, tak doktor Tomáš ho dosáhl
how AUX.1PL spoke about enlightenment so doctor Tomáš it reached
zcela určitě. K
completely surely
'Remember how we spoke about enlightenment? (So) I'm pretty sure doctor
Tomáš reached it.'

Appositive *jak*

- (12) No, **jak** slyšíš, mami, tak jsem to nakonec zvedl. K
well how hear.2SG mum so AUX.1SG it in.the.end picked.up
'Well, mum, as you can hear, I've picked it up in the end.'

Conditional/Temporal *jak* (\approx *když/jakmile*)

- (13) **Jak** se tam ukážeš, hned tě odchytnou.
how REFL there show.up immediately YOU catch
'If/When you show up there, they'll catch you right away.'

Pseudorelatives vs. *jak*-relatives

The following sentence is ambiguous; cf. (14a) a (14b).

- (14) když jsem viděl toho surovce, **jak** se na tebe vrhá K
 when AUX.1SG saw DEM brute how REFL at you lunge
 a. 'when I saw that brute lunge/lunging at you'
 b. 'when I saw that brute that (sometimes) lunges at you'

Reading (14a) corresponds to a **pseudorelative** (Cinque 1996; Caha 2004); reading (14b) corresponds to a *jak*-relative.

Pseudorelatives are complements of verbs, not NPs → the apparent head is possible to pronominalize or omit altogether.

- (15) a. když jsem **ho** viděl, **jak** se na tebe vrhá
 when AUX.1SG him saw how REFL at you lunge
 'when I saw him lunge at you'
 b. když jsem viděl, **jak** se na tebe vrhá
 when AUX saw how REFL at you lunge
 'when I saw how he's lunging at you'

- (16) *když jsem (**ho**) viděl, **který** se na tebe vrhá
 when AUX.1SG him saw which REFL at you lunge
 Intended: 'when I saw the guy who lunges at you'

Jak-relatives are relatives

Relative clauses contain a gap which corresponds to the relative clause nominal head:

- (17) ty Lidovky; **jak** sem řikala mamce aby mi poslala —;
 DEM Lidovky(newspaper) how.C AUX.1SG said mum SBJV.C me send
 kvůli těm zkouškám K
 because.of DEM exams
 'the Lidovky newspaper which I said my mum to send me because of the exams'

Jak-relatives have this property:

- (18) a. *ty Lidovky; **jak** sem řikala mamce aby mi poslala **ty**
 DEM Lidovky how.C AUX.1SG said mum SBJV.C me send DEM
Lidovky / noviny; kvůli těm zkouškám
 Lidovky newspaper because.of DEM exams
- b. *ty Lidovky **jak** sem řikala mamce že jsem se učila na
 DEM Lidovky how.C AUX.1SG said mum C AUX.1SG REFL learn for
 zkoušku
 exam

Jak-relatives are relatives

The long-distance relation respects locality, unless a resumptive pronoun is used:

- (19) a. ty Lidovky_i jak sem řikala mamce aby mi poslala
DEM Lidovky(newspaper) how.C AUX.1SG said mum SBJV.C me send
—_i kvůli těm zkouškám K
because.of DEM exams
- b. *ty Lidovky_i jak sem řikala mamce [NP to, aby mi poslala —_i
DEM Lidovky how.C AUX.1SG said mum DEM SBJV.C me send
kvůli těm zkouškám]
because.of DEM exams
- c. ty Lidovky_i jak sem řikala mamce [NP to, aby mi je_i
DEM Lidovky how.C AUX.1SG said mum DEM SBJV.C me them
poslala kvůli těm zkouškám]
send because.of DEM exams
(Intended:) 'the Lidovky newspaper which I said my mum to send me
because of the exams'

Relativization strategies

Types of how-clauses

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Jak vs. co

Jak- and *co*-relatives are often interchangeable.

- (20) a. já sem si ho totiž spletla s tím klukem **jak** s náma
I AUX.1SG REFL him PRT mixed.up with DEM boy how.C with us
hrál loni K
played last.year
- b. já sem si ho totiž spletla s tím klukem **co** s náma
I AUX.1SG REFL him PRT mixed.up with DEM boy what.C with us
hrál loni
played last.year
'I mixed him up with the boy that played with us last year.'
- (21) a. toho králíka **co** si slíbil chci K
DEM rabbit what.C AUX.2SG promised want.1SG
- b. toho králíka **jak** si slíbil chci
DEM rabbit how.C AUX.2SG promised want.1SG
'I want the rabbit that you promised.'

Jak vs. co

But there are cases where the switch leads to an unacceptable result.

- (22) a. my sme tam měli jednoho magistra **co** si dělá
 we AUX.1PL there had one magister what.C REFL does
 doktorandský a učil nás tam nějaký seminář K
 doctoral.studies and taught us there some seminar
- b. #my sme tam měli jednoho magistra **jak** si dělá doktorandský
 we AUX.1PL there had one magister how.C REFL does doctoral.studies
 a učil nás tam nějaký seminář
 and taught us there some seminar
 'There we had a magister who is doing his PhD and who taught us some seminar there.'
- (23) a. chutnala všem když sem jí dělala na nějakou oslavu **co**
 tasted everybody when AUX.1SG her made for some party what.C
 pořádala kamarádka K
 organized friend
- b. #chutnala všem když sem jí dělala na nějakou oslavu **jak**
 tasted everybody when AUX.1SG her made for some party how.C
 pořádala kamarádka
 organized friend
 'Everybody liked it when I made it for a party that a friend of mine organized.'

Jak vs. co

Observations from informal experimenting with corpus data:

- Cases where *jak* cannot replace *co* are frequent.
 - Cases where *co* cannot replace *jak* are hard to find.
- *Co* has a broader distribution than *jak*.
- *Jak* has a more specific meaning.

Previous claims about *jak*:

- *Jak* “activates a shared speaker–hearer familiarity of the referent expressed by the relative clause head” (Karlík & Šimík 2017)
- Poldauf (1955): *Jak*-relatives carry the feature [verifiability by senses or memory]

Plan

- More precise observations
- More adequate analysis
- Corpus test where possible
- Why *jak*?

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Basic function of *jak*-relatives

Hypothesis

The basic function of a *jak*-relative is not to restrict the set of possible referents, but rather to identify a referent whose existence is presupposed and familiar.

Consequences:

- The existence (and familiarity) of the referent expressed by the relative clause head is presupposed.
- The identifying property (denotation of *jak*-relative) must be familiar to the hearer.
- *Jak*-relatives are infelicitous when modifying a referent which is already identified.
- Non-restrictive semantics is only apparent.

Further associated properties:

- evidentiality
- obligatory hearer-orientation

Existence presupposition

Jak-relatives **presuppose the existence of the referent** that they modify.

- The referent cannot be newly introduced:

(24) my sme tam měli **jednoho** magistra **co** [#**jak**] si dělá
 we AUX.1PL there had one magister what.C how.C REFL does
 doktorandský a učil nás tam nějaký seminář K
 doctoral.studies and taught us there some seminar
 'There we had a magister who is doing his PhD and who taught us some seminar there.'

- The existence of a referent cannot be negated:

(25) dneska už se **žádná** ženská, **co** [#**jak**] něco znamená,
 today already REFL no woman what.C how.C something mean
 před třicítkou nevdává K
 before thirty NEG.marry
 'Today no woman that means something marries before the age of thirty.'

Existence presupposition

Jak-relatives **presuppose the existence of the referent** that they modify.

- And, more strongly, the relative clause head cannot be quantificational (it must be referential).

(26) se normálně váleli smíchy **všichni** cizinci **co** [#**jak**] chodili
 REFL PRT rolled laughing all foreigners what.C how.C walked
 vokolo
 by
 'Imagine, all the foreigners that walked by were rolling on the floor
 laughing.'

K

- The existence of a referent is a necessary condition for the use of *jak*-relatives
- Below: supporting corpus evidence.

An aside: Kind reference

Jak-relatives can modify kind-referring nominals. This may come as a surprise, but remember that kinds are just a different sort of entity (and hence can be referred to).

- (27) a. taky ste to měli takový ty ptáčky **jak** se do **nich** dala voda
 also AUX.2PL it had such DEM birds how.C REFL into them put water
 a pak se na ně pískalo? K
 and then REFL on them whistled
 'Did you also have those birds into which you put water and then whistle on them?'
- b. pamatujete si takový ty konvice **jak** měly tu píštalku? K
 remember REFL such DEM kettles how.C had DEM whistle
 'Do you remember those kettles which had that whistle?'
- c. to sú takové ty čižmy **jak** sa nosíja v Brodě K
 it are such DEM boots how.C REFL wear in Brod
 'Those are the kind of boots that one wears in Brod.'

Despite the kind reference, all the relevant properties of *jak*-relatives are retained.

Familiarity with the identifying property

The semantics of *jak* affects not just the head of the relative clause, but in fact **the whole relative clause**.

- (28) a. Ten nový podcast, **jak** jsme se o **něm** bavili a **co** **ho**
 DEM new podcast how.C AUX.1PL REFL about it spoke and what.C it
 / **který** *mimochodem* budou představovat na tiskovce příští týden,
 which by.the.way will introduce at press.conference next week
 mě fakt nadchl.

me really amazed

'The new podcast that we spoke about and which, by the way, will be introduced at a press conference next week is really amazing.'

↪ Hearer knows that we spoke about the podcast.

↯ Hearer knows that it will be introduced.

- b. #Ten nový podcast, **jak** jsme se o **něm** bavili a **jak** **ho**
 DEM new podcast how.C AUX.1PL REFL about it spoke and how.C it
mimochodem budou představovat na tiskovce příští týden, mě
 by.the.way will introduce at press.conference next week me
 fakt nadchl.

really amazed

'The new podcast that we spoke about and which, by the way, will be introduced at a press conference next week is really amazing.'

↪ Hearer knows that we spoke about the podcast.

↪ !!! Hearer knows that it will be introduced.

A note on *jak*'s scope

The semantic scope of *jak* corresponds to its **surface position**, not to the clause from which the nominal head originates. Srov.

- (29) Ta sousedka, **jak** jsem Honzovi říkal, že mi pomohla opravit kolo.
 DEM neighbor how.C AUX.1SG Honza.DAT told C me helped repair bike
 'The neighbor who I told Honza helped me repair my bike.'

↔ Hearer knows that I told Honza that she helped me repair my bike.

jak > told

↗ Hearer knows that she helped me repair my bike but not necessarily that I told Honza about it.

jak > repair

- *jak* in *jak*-relatives – predictably – behaves as a base-generated complementizer, not as a pronoun, which could in principle reconstruct for scope

The identifying function must apply

In (30) the hearer (i) knows the referent, but can have problems identifying her by her name. At the same time the hearer (ii) is familiar with the fact that the referent moderates *Pošta pro tebe* (“Mail for you”).

- (30) vo Ester Janečkovej **jak** dělá poštu pro tebe K
about Ester Janečková how.C does mail for you
'about Ester Janečková, the one that moderates *Pošta pro tebe*'
↔ Hearer knows that E.J. moderates *Pošta pro tebe*.
↔ Speaker believes that 'moderating *Pošta pro tebe*' is a property that helps the hearer identify the referent.

In (31) the hearer (i) knows the referent and (ii) knows that he was the first Czech president. But it's highly unlikely that the hearer needs help with identifying the referent.

- (31) Václav Havel, **který / #jak / ?co** byl prvním českým prezidentem,
Václav Havel which how.C what.C was first Czech president
'Václav Havel, who was the first Czech president,'
↔ Hearer knows that Václav Havel was the first Czech president.
↔ !!! Speaker believes that the fact that 'being the first Czech president' helps the hearer identify the referent.

Notabene: *co*-relative is also not great in this case.

Evidential component of *jak*

Jak-relatives carry an evidential component (cf. Poldauf 1955), underspecified with respect to the precise evidential source (direct/visual, auditory, reported, ...):

(32) *Context*: There were three women applying for the job...

- a. Získala ho ta kandidátka, **co** / **která** měla nejdelší zkušenosti v got it DEM candidate what.C which had longest experience in oboru.
field

'The candidate that had the longest experience in the field got it.'

↔ (Speaker assumes that) Hearer considers it trivial that one of three candidates has the longest experience in the field

→ **plain world knowledge sufficient**

- b. Získala ho ta kandidátka, **jak** měla nejdelší zkušenosti v oboru.
got it DEM candidate how.C had longest experience in field
'The candidate that had the longest experience in the field got it.'

↔ (Speaker assumes that) Hearer is familiar with the information that the winning candidate had the longest experience and this knowledge has an evidential source (e.g., hearer was a member of the committee or somebody already told him about it)

→ **plain world knowledge not sufficient**

Hearer-orientation

Epistemic/evidential expressions can sometimes be underspecified with respect to whether they are oriented towards the **speaker**, the **hearer**, or even towards a linguistically represented **attitude holder**.

- (33) a. Určitě tam byl.
surely there was
'He was there for sure.'
↔ Speaker-certainty.
- b. Určitě tam byl?
surely there was
'Are you sure he was there?'
↔ Hearer-certainty questioned.
- c. Karel tvrdil, že tam určitě byl.
Karel claimed C there surely was
'Karel claimed that he was there for sure.'
↔ Karel's certainty.

Hearer-orientation

The evidential component of *jak*-relatives is always oriented towards the hearer.

- (34) a. Přišel ten chlapík, **jak** tam včera spal.
 came DEM man how.C there yesterday slept
 'The man who slept there yesterday came.'
 ⇨ (Speaker assumes that) Hearer has evidence about the man's sleeping yesterday.
- b. Přišel ten chlapík, **jak** tam včera spal?
 came DEM man how.C there yesterday slept
 'Did the man who slept there yesterday come?'
 ⇨ (Speaker assumes that) Hearer has evidence about the man's sleeping yesterday.
- c. Karel tvrdil, že přišel ten chlapík, **jak** tam včera spal.
 Karel claimed C came DEM man how.C there yesterday slept
 'Karel claimed that the man who slept there yesterday came.'
 ⇨ (Speaker assumes that) Hearer has evidence about the man's sleeping yesterday.

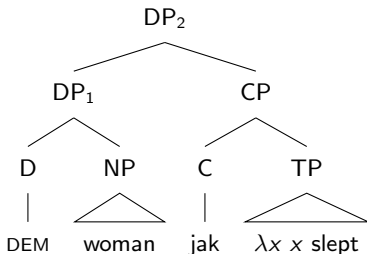
rightarrow *Jak*-relatives are inherently specified to assist the **hearer** with identifying a referent.

Syntax a compositional semantics

(35) $[[\text{jak}]]^{w,c} = \lambda P \lambda x : \text{KNOW}(w)(\text{HR}(c), P(x)) \wedge \text{EVID}(\text{ADR}(c), P(x)) \cdot P(x)$

(36) ta žena, jak spala

(37)



- Demonstrative as a transitive determiner – one argument = NP restriction, the other = anchoring in context or situation (Schwarz 2009; Wolter 2006; Elbourne 2008; Šimík 2016; Ahn 2019)
- *Jak*-relative is an argument of a demonstrative or more generally a determiner which gives rise to a referential expression.

(38) $[[\text{DP}_2]]^{w,c}$

- is defined if the hearer knows and has evidence that the referent of DP_1 slept; if defined, then
- = the woman that slept

Why *jak*?

Hypothesis 1

Jak in *jak*-relatives incorporates the semantic properties of attitude verbs like ‘know’ or ‘remember’.

The same semantic effect arises under ‘know’ in 2nd person (again: hearer-orientation):

- (39) a. Přece ví / víš, že byli v Pardubicích.
 PRT know.3 know.2SG C were in Pardubice
 ‘He knows/You know that they were in Pardubice (doesn’t he/don’t you).’
 ⇨ ‘That they were in Pardubice’ is presupposed
- b. Přece víš, **jak** byli v Pardubicích.
 PRT know.2SG how.C were in Pardubice
 ‘You know how(?) they were in Pardubice (don’t you).’
 ⇨ ‘That they were in Pardubice’ is presupposed and it is also presupposed that the hearer has evidence (direct or reported) that they were there
- c. #Přece ví, **jak** byli v Pardubicích.
 PRT know.3 how.C were in Pardubice
 ‘He knows how(?) they were in Pardubice (doesn’t he).’
 ⇨ The evidential appeal to the hearer is in clash with knowledge attribution to a third person.

Observation: This use of ‘know’ is nearly synonymous to ‘remember’.

Why *jak*?

Hypothesis 2

Jak in “correlative recognitional” uses incorporates the semantics of the ‘remember’ or the recognitional ‘know’.

- (40) **Jak** jsme mluvili o osvětlení, tak doktor Tomáš ho dosáhl
how AUX.1PL spoke about enlightenment so doctor Tomáš it reached
zcela určitě. K
completely surely
‘Do you remember/Do you still know how we spoke about enlightenment? (So)
I’m pretty sure doctor Tomáš reached it.’
↔ The speaker assumes that the hearer remembers (has past evidence) that we
spoke about enlightenment.

Hypothesis 3

Our *jak*-relative is an embedded version of the recognitional correlative.

Relativization strategies

Types of how-clauses

Jak vs. co

Semantics of *jak*-relatives

Corpus

Interim summary

- presupposition of existence, referentiality
- familiarity with identifying property
- *jak* takes surface scope
- obligatoriness of identifying function
- evidentiality
- hearer-orientation

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 - corpus: ?
- obligatoriness of identifying function
 - corpus: ?
- evidentiality
 - corpus: ?
- hearer-orientation
 - corpus: ?

Corpus study

Author: Jakub Sláma

	jak	co
Corpus	oral v1	oral v1
Query	[tag="N.*"] [lemma="jak"]	[tag="N.*"] [lemma="co"]
Hits	4207	3975
Relevant	572	706
Annotation	head (lemma, syntactic function), determiner, grammatical number, predicate in matrix clause, resumptive, frequency of demonstratives within relative clause	

Determiners

The heads of *jak*-relatives are modified by **demonstratives** significantly **more** than the heads of *co*-relatives ($\chi^2 = 72.3, p < .0001$).

	jak	co	
demonstrative	519	506	1025
other	53	200	253
	572	706	1278

The heads of *jak*-relatives are modified by **quantificational** (incl. indefinite or superlative) determiners/adjectives significantly **less** than the heads of *co*-relatives ($\chi^2 = 56.0, p < .0001$).

	jak	co	
quantificational	3	75	78
other	569	631	1200
	572	706	1278

→ obligatory referentiality of the heads of *jak*-relatives confirmed

Demonstratives in the relative clause

Example:

- (41) mně se tam hrozně líbila fakt ta nabídka **jak** byla teďka v **tom** v
me REFL there terribly liked really DEM offer how.C was now in DEM in
tý Akademii věd někde v **tý** Krči K
DEM academy sciences somewhere in DEM Krč
'I really liked the offer that was in the Academy of Sciences somewhere in Krč.'

Jak-relatives contain **recognitional demonstratives** supporting the identificational function significantly **more** than *co*-relatives ($\chi^2 = 29.8, p < .0001$; data from an earlier version of our dataset).

	jak	co	
presence	166	99	265
absence	405	523	928
	571	622	1193

→ indirect support of our claim that the the semantic contents of the *jak*-relative is familiar for the hearer

Further findings

- singular more likely (or plural less likely) with the heads of *jak*-relatives
 - associated with referentiality?
- no effect of grammatical aspect (whether in the matrix or embedded predicate)
- relativization of adjuncts more likely with *jak*-relatives

Summary and outlook

Shrnutí

- *Jak*-relatives are only seemingly synonymous with *co*-relatives.
- *Jak*-relatives are semantically more specific than *co*-relativa.
- The main function of *jak*-relatives is to help the hearer identify a referent, not to restrict a set of potential referents.
- The existence of a referent is presupposed.
- The identifying function entails that the hearer is familiar with the fact that the *jak*-relative denotation truthfully applies to the referent.
- Quantificational and indefinite heads are excluded with *jak*-relatives.

Výhled

- Further empirical support; corpus has its limits in supporting semantic analyses.
- Detailed analysis of *jak* couched in a more general theory of complementizer semantics (e.g. Moulton 2009).
- Grammaticalization/Diachrony of *jak*?

Summary and outlook

Thank you!

Shrnutí

- *Jak*-relatives are only seemingly synonymous with *co*-relatives.
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