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*Linguistica Brunensia*. 2016, vol. 64, iss. 1, pp. 109-129

ISSN 1803-7410 (print); ISSN 2336-4440 (online)

Stable URL (handle): <https://hdl.handle.net/11222.digilib/135453>

Access Date: 30. 11. 2024

Version: 20220831

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Radek Šimík

# ON THE SEMANTICS OF CZECH FREE RELATIVES

## ABSTRACT

*This paper offers a semantic analysis of Czech free relatives and pays particular attention to so called ever free relatives, i.e. free relatives whose wh-word is modified by the ever morpheme (the postfix -koli(v) in Czech). I argue that Czech free relatives should be uniformly analyzed as definite descriptions, denoting the maximal (plural) entity that satisfies the description provided by the free relative. I show that the analysis can be extended to Czech ever free relatives, despite the fact that they only exhibit the universal-like reading and not the identity reading, the latter of which has always figured prominently as an argument for the definiteness of ever free relatives. I argue that the reason for the lack of the identity reading is the stricter variation requirement imposed the denotation of ever free relatives in Czech (compared to, say, English). In particular, I argue that the denotation of an ever free relative in Czech must covary with a variable bound by a clausemate quantifier. This, in effect, makes Czech ever free relatives instances of “dependent definites” – a correlate of the better known “dependent indefinites”.*

## KEYWORDS

*Ever Free Relatives; Dependent Definites; Semantics; Czech.*

## 1. Introduction

In the last 20 years, semantic research has accumulated evidence for JACOBSON’S (1988, 1995) influential proposal, according to which free relatives (FRs) are definite descriptions. This has always been clear for the case of *plain free relatives* (e.g., BRESNAN – GRIMSHAW 1978), i.e., FRs involving a plain *wh*-operator, e.g.

what in (1).<sup>1</sup> The definite analysis faced significant resistance in the case of *ever free relatives*, i.e., FRs involving a *wh*-operator modified by the *ever*-morpheme (from the English suffix *-ever*), which were long believed to be universal quantifiers (BRESNAN – GRIMSHAW 1978, LARSON 1987, TREDINNICK 1994, IATRIDOU – VARLOKOSTA 1998). The universal analysis receives immediate support from examples like (2), which seem more appropriately paraphrased by universal quantifiers, (2b), than definite descriptions, (2a).

- (1) *Lisa ate what Dave cooked.*  
‘Lisa ate the thing(s) that Dave cooked.’
- (2) *Lisa ate whatever Dave cooked.*  
a. ?‘Lisa ate the thing that Dave cooked.’  
b. ‘Lisa ate everything that Dave cooked.’

At least since ELLIOTT (1971), however, it has been clear that not all *ever* FRs are universal. *Ever* FRs with so called identity readings can only be paraphrased by definite descriptions, as illustrated in (3).

- (3) *Yesterday at 8pm, Dave was watching whatever they were showing on HBO.*  
a. ‘Yesterday at 8pm, Dave was watching the thing they were showing on HBO (whatever it was).’  
b. \*‘Yesterday at 8pm, Dave was watching everything they were showing on HBO.’

The contrast between universal-like *ever* FRs and definite-like *ever* FRs has led some to believe that *ever* FRs might in fact be ambiguous, a possibility left open by VON FINTEL (2000), for instance. Still, most researchers stick to the idea that all FRs, including all *ever* FRs, are definite at their core and derive their apparent universal nature in indirect ways.

Czech *ever* FRs offer a fresh perspective on the issue because at first sight, they seem to lack the identity reading. Consider the pattern in (4), which builds on the English example (3). The plain FR (4a), introduced by the *wh*-operator *co* ‘what’, has the expected reading and can be paraphrased by a definite description. The *ever* FR (4b), introduced by the *wh*-operator *co* ‘what’ affixed by the *ever* morpheme *-koliv*, has the universal-like reading, implying that David watched HBO for a longer stretch of time yesterday and watched everything that they were show-

1 It has occasionally been proposed that (plain) free relatives are indefinites (see BERMAN 1994, WILTSCHKO 1998, STERNEFELD 2006), but we now know that this analysis has more problems than benefits (see esp. TREDINNICK 2005, HINTERWIMMER 2008).

ing in that time interval. In (4c), this kind of reading is ruled out by the exact specification of the time at which David was watching HBO. Provided that the HBO is showing only a single thing at a time, the ever FR in (4c) can only have the identity reading. As indicted by #, this reading is unavailable in Czech.<sup>2,3,4</sup>

- (4) a. *Včera (v 8) David sledoval, co dávali na HBO.*  
 Yesterday (at 8) David watched what gave on HBO  
 ‘Yesterday (at 8), David was watching what they were showing on HBO.’  
 ≈ ‘Yesterday (at 8), David was watching the thing(s) that they were showing on HBO.’
- b. *Včera David sledoval, cokoliv dávali na HBO.*  
 Yesterday David watched whatever gave on HBO  
 ‘Yesterday, David watched whatever they were showing on HBO.’  
 ≈ ‘Yesterday, David watched everything they showed on HBO.’
- c. *#Včera v 8 David sledoval, cokoliv dávali na HBO.*  
 Yesterday at 8 David watched whatever gave on HBO  
 Intended: ‘Yesterday at 8, David was watching whatever they were showing on HBO.’  
 ≈ ‘Yesterday at 8, David was watching the thing that they were showing on HBO (whatever it was).’

However, the restriction on identity readings is not universal. Consider example (5), minimally different from (4c) in that it involves reference to future rather than past.

- (5) *Dnes večer v 8 bude David sledovat, cokoliv budou dávat na HBO.*  
 today evening at 8 will David watch whatever will give on HBO  
 ‘Tonight at 8, David will be watching whatever they’ll be showing on HBO.’  
 ≈ ‘Tonight at 8, David will be watching the thing that they’ll be showing on HBO (whatever it’ll be).’

<sup>2</sup> The reading is available in the closely related concessive construction, lately referred to as the unconditional (RAWLINS 2008, 2013). In Czech, the unconditional is formed by an in-situ *wh-ever* word in combination with the clause initial particle(s) *at’* (*už*) (lit. ‘let(imperative) already’). The intended reading of (4c) is expressed by the unconditional in (i).

(i) *Včera v 8 David sledoval (to), co dávali na HBO, ať už to bylo cokoliv.*  
 Yesterday at 8 David watched that what gave on HBO let already it be whatever  
 ‘Yesterday at 8, David was watching what they were showing on HBO, whatever it was.’

<sup>3</sup> VON FINTEL (2000) reports, via ANNA SZABOLCSI, that Hungarian ever FRs also lack identity readings.

<sup>4</sup> Czech orthography dictates that FRs (just like all other embedded clauses) be preceded by a comma. The comma can but need not correspond to an intonational break.

The above pattern raises the following questions: Does the limited access to identity readings in Czech ever FRs justify a universal analysis? If so, does this support an ambiguity analysis for ever FRs in English? If not, how should the limited access to identity readings be accounted for? And does it shed any light on the proper analysis of ever FRs in general?

In this paper, I answer the first question in the negative and argue that Czech ever FRs are definite descriptions, just like their English kin. Building on the original proposal of DAYAL (1997), further developed by VON FINTEL (2000), TREDINNICK (2005), CONDORAVDI (2008), and LAUER (2009), I will argue that Czech ever free relatives are subject to a variation requirement to the effect that their denotation must vary along a certain dimension. The difference between English and Czech lies in the kind of dimension along which the denotation can vary: while English ever free relatives are rather underspecified in this respect, the variation in the denotation of Czech ever FRs is inherently tied to the quantificational domain of a clause-mate quantifier. I will show how this specification derives the reduced availability of identity readings in Czech ever FRs.

The paper is organized as follows. In Section 2 I provide some background information on Czech free relatives, building on KARLÍK (2013). In Section 3 presents some analytical preliminaries, namely the baseline analysis of FRs as definite descriptions and the variation requirement imposed on their denotation by the ever-morpheme. Section 4 offers an analysis of Czech ever free relatives with special attention to the kind of environments in which ever FRs are or are not licensed. Section 5 concludes.

## 2. Background on Czech free relatives

The best background on the morphosyntax of Czech FRs known to me can be found in the paper of our celebrated Petr KARLÍK (2013). For those who do not master Czech, I summarize his findings in the present section and occasionally add my own observations.

Czech FRs are descriptively characterized as *wh*-clauses with the distribution of nominals or adverbials.<sup>5</sup> They can be coordinated with functionally corresponding categories, as illustrated in (6).

- (6) *Já budu jíst [co uvaříš] a [polévku ze sáčku]*  
 I will eat what cook<sub>2SG</sub> and soup from bag  
 'I will eat what you will cook and a canned soup.'

5 For a crosslinguistic corroboration, see CAPONIGRO (2003).

Karlík notes that the distribution of Czech FRs is more restricted than the one of the corresponding nominal/adverbial categories, however. First, Czech “nominal” FRs cannot occur in complements to prepositions.<sup>6</sup>

- (7) Řízl se o {<sub>[CP</sub> co měl v kapse] / [<sub>[NP</sub> nůž]}
- Cut self about what had in pocket knife  
 ‘He cut himself with {what he had in his pocket / a knife}.’

Second, Czech FRs only occur in linearly peripheral positions in the sentence.

- (8) a. [Kdo zvítězí] / [Vítěz] bude odměněn polibkem od krásné blondýnky.  
 who wins winner will.be awarded kiss from beautiful blonde  
 b. Odměněn bude\* [kdo zvítězí] / [vítěz] polibkem od krásné blondýnky.  
 awarded will.be who wins winner kiss from beautiful blonde  
 c. Polibkem od krásné blondýnky bude odměněn [kdo zvítězí] / [vítěz].  
 kiss from beautiful blonde will.be awarded who wins winner  
 ‘Who wins / The winner will be awarded by a kiss from a beautiful blonde.’

Czech FRs employ a subset of interrogative *wh*-words: *kdo* ‘who’, *co* ‘what’, *kde* ‘where’, *odkud* ‘from where’, *kudy* ‘through where’, *kam* ‘to where’, *kdy* ‘when’, *odkdy* ‘from when’, *dokdy* ‘till when’, *jak* ‘how’, and *kolik* ‘how much/many’. With the exception of the last one, these *wh*-words can be appended by the *ever* morpheme, which takes the form of a *wh*-postfix (the linearly rightmost affix on the *wh*-word) *-koli(v)*. It is the same postfix used to derive free choice indefinites in Czech, as illustrated in (9).

- (9) a. Přečtu, cokoliv mi učitelka doporučí.  
 read<sub>1SG</sub> whatever me<sub>DAT</sub> teacher will.recommend  
 ‘I will read whatever the teacher recommends to me.’

<sup>6</sup> The ungrammaticality of (7) is not caused by a violation of the case-matching requirement: the *wh*-pronoun *co* ‘what’ bears the accusative case and thus satisfies the case requirement of both the preposition *o* (which selects an accusative in this case) and the embedded verb *měl* ‘had’. Yet, there are reasons to believe that matching is involved, particularly “preposition matching”. Consider the grammatical (i), where it is the whole PP *na co* that is shared by the matrix and the embedded clause: both the matrix verb *dívat se* ‘look/watch’ and *upozornit* ‘point out’ take a *na*-PP as their complement.

(i) Díval jsem se, na co mě upozornil Mirek  
 watched aux<sub>1SG</sub> refl on what me pointed out Mirek  
 ‘I watched what [the thing that] Mirek pointed out to me.’

- b. *Přečtu cokoliv*  
read<sub>1SG</sub> whatever  
'I will read anything.'

The use of *wh*-determiners in Czech FRs, in particular  *který*  'which',  *jaký*  'what (kind of)' is conditioned by the use of the ever morpheme, a generalization that is cross-linguistically stable, though not without exceptions (see CITKO 2010 for a recent discussion).

- (10) a. \**Přečtu, kterou / jakou knížku mi učitelka doporučí.*  
read<sub>1SG</sub> which what.kind.of book me<sub>DAT</sub> teacher will.recommend  
b. *Přečtu, kteroukoliv / jakoukoliv knížku mi učitelka doporučí.*  
read<sub>1SG</sub> whichever whatever book me<sub>DAT</sub> teacher will.recommend  
'I will read whichever / whatever book the teacher recommends to me.'

Karlík demonstrates that there is a whole range of factors that further characterize Czech FRs and at the same time distinguish them from the related *wh*-questions: the presence of (case) matching effects, the necessity of phi-feature sharing between the *wh*-word and a potential light head, the impossibility of *wh*-word modification by  *jiný*  'else', the unavailability of speaker oriented adverbs like  *asi*  'probably', the unavailability of multiple *wh*-constituents, or non-transparency for A-extraction. Karlík's conclusion is that Czech FRs are [D [CP]] structures, i.e. *wh*-clauses headed by an empty D, as proposed by CAPONIGRO (2002).<sup>7</sup> A plain FR thus semantically corresponds to a light-headed relative (CITKO 2004) with a definite light head, as illustrated in (11).

- (11) *Sním [DP (to), [CP co mi uvaříš]]*  
eat<sub>1SG</sub> that what me<sub>DAT</sub> cook<sub>2SG</sub>  
'I will eat what you will cook for me.'

Karlík also observes that inserting a definite light head to an ever FR leads to ungrammaticality and takes this to suggest that ever FRs are not definite, cf. (12a) vs. (12b). What I would like to add in defense of the present analysis, where ever FRs are definite, is the data in (12c) and (12d). What (12c) shows, I believe, is that (12b) is ungrammatical for a reason different from a semantic incompatibility

7 I have expressed my own reservations towards a D-CP analysis of free relatives in ŠIMÍK (2010) and still consider a bare CP analysis more plausible. Yet, the issue is immaterial to the present discussion.



between the light head and the relative clause: a relative clause with a *wh*-ever-operator is genuinely free, i.e., it cannot be headed, not even by a light head that is, one would think, semantically compatible. Finally, (12d) shows that a free choice light head is non-problematic in principle but it must be combined with a simple *wh*-word in the role of the relative operator.

- (12) a. *Sním, cokoliv mi uvaříš.*  
 eat<sub>1SG</sub> whatever me<sub>DAT</sub> cook<sub>2SG</sub>  
 'I will eat whatever you will cook for me.'
- b. \**Sním to, cokoliv mi uvaříš.*  
 eat<sub>1SG</sub> that whatever me<sub>DAT</sub> cook<sub>2SG</sub>  
 Intended: 'I will eat whatever you will cook for me.'
- c. \**Sním cokoliv, cokoliv mi uvaříš.*  
 eat<sub>1SG</sub> whatever whatever me<sub>DAT</sub> cook<sub>2SG</sub>  
 Intended: 'I will eat anything that you will cook for me.'
- d. *Sním cokoliv, co mi uvaříš.*  
 eat<sub>1SG</sub> whatever what me<sub>DAT</sub> cook<sub>2SG</sub>  
 'I will eat anything that you will cook for me.'

Let us now turn to the semantic analysis of Czech FRs.

### 3. Analytical preliminaries

#### 3.1 Free relatives as definite descriptions

According to JACOBSON (1988, 1995) and much subsequent literature (RULLMANN 1995, GROSU 1996, DAYAL 1997, GROSU – LANDMAN 1998, VON FINTEL 2000, CAPONIGRO 2003, TREDINNICK 2005, GIANNAKIDOU – CHENG 2006, HINTERWIMMER 2008, CONDORAVDI 2008, LAUER 2009), FRs are definite descriptions in the sense of FREGE (1892). That is, a FR introduces the presupposition that there is exactly one (maximal) entity that satisfies the descriptive content of the FR and it denotes that entity. Consider the example (13). The denotation of the FR is given in (13a). It relies on LINK's (1983)  $\sigma$ -operator (used for FRs by CAPONIGRO 2003 or HINTERWIMMER 2008), which integrates a maximalization operator (a partial function from a set *S* to the singleton set *S'* containing the maximal entity in *S*; see, e.g., GROSU – LANDMAN 1998) and the standard Fregean  $\iota$ -operator, which turns a singleton set into its member (see esp. PARTEE 1987). If we consider a model of reality *M* where Mary recommended three books (*A*, *B* and *C*), then the maximal entity and hence the denotation of the FR is the mereological sum *A+B+C*; see (13b). I will make the additional but common assumption that predicates are relativized to a situation



(consequently, a predicate is not of type  $\langle e, t \rangle$ , but rather  $\langle e, \langle s, t \rangle \rangle$ ). Situations are represented as covert pronouns (PERCUS 2000) and consequently behave as variables – they can be bound or assigned a value by the contextually determined assignment function  $g$ . The final denotation of our example FR is in (13c).

- (13) *Dave read what(ever) Mary recommended.*
- $[[\text{what(ever) Mary recommended}]] = \sigma x [\text{Mary recommended } x]$
  - $[[\text{what(ever) Mary recommended}]]^M = A+B+C$
  - $[[\text{what(ever) Mary recommended in } s_j]]^{M,g} = \sigma x [\text{Mary recommended } x \text{ in situation } g(1)] = A+B+C$

### 3.2 The variation requirement contributed by the ever-morpheme

The present proposal builds on the foundational ideas of DAYAL (1997) (and subsequent work by von FINTEL 2000 and TREDINNICK 2005), but in its generality leans on LAUER (2009). The idea is that the ever-morpheme, be it the English *-ever* or the Czech *-koli(v)*, contributes a requirement that the FR reference vary (i.e., not be constant) in one way or another.<sup>8</sup>

#### (14) Variation requirement imposed by the ever-morpheme

The denotation of an ever FR varies along a certain dimension.

DAYAL (1997) showed how this kind of requirement produces the ignorance effect if the variation dimension corresponds to the epistemic state of the speaker (or potentially another individual). Consider example (15). The plain FR in (15a) denotes the movie *Titanic*, as we learn from the *namely*-continuation. Its reference is constant. The referent of the corresponding ever FR in (15b), on the other hand, remains unknown to the speaker, as shown by the infelicity of the *namely*-continuation. The reason for the speaker's ignorance about the identity of the FR referent is the variation requirement introduced by the ever-morpheme, DAYAL argues: the identity of the referent varies across the speaker's epistemic state; in slightly more technical terms, it is not the case that in all the worlds that the speaker knows to be actual-world candidates, the identity of what they were showing on HBO yesterday at 8 is the same.<sup>9</sup>

8 I abstract away from the non-trivial problem of what constitutes the identity of two referents. For discussion, see HELLER – WOLTER (2008, 2011) and LAUER (2009).

9 DAYAL (1997) assumes that the ever-morpheme introduces what we could call a weak variation requirement: there must be at least two worlds in which the identity of the FR referent differs. Strong variation would require the identity to be different in each of the worlds (which is unlikely for epistemic states but possible for other, more restricted types of variation domains). For a related issue in the domain of free choice items, see ALONSO-OVALLE – MENÉNDEZ-BENITO (2010).

- (15) a. *Yesterday at 8pm, Dave was watching what they were showing on HBO, namely the Titanic.*  
 b. *Yesterday at 8pm, Dave was watching whatever (it was that) they were showing on HBO (#namely the Titanic).*

On this account, the denotation of both FRs above is the same, namely (16a), but the ever FR, in addition, conveys the variation requirement in (16b).<sup>10</sup>

- (16) a.  $[[\text{what(ever) they were showing on HBO yesterday at 8pm}]] = \sigma x[x \text{ was on HBO yesterday at 8pm in the actual world } w_0]$   
 b.  $[[\text{whatever they were showing on HBO yesterday at 8pm}]]$  conveys that there are at least two worlds,  $w, w'$ , in the epistemic state of the speaker, such that  $\sigma x[x \text{ was on HBO yesterday at 8 in } w] \neq \sigma x[x \text{ was on HBO yesterday at 8 in } w']$

The variation dimension can correspond to the domain of quantifiers, such as the quantificational adverb *always* in (17). The bracketed continuation is included to indicate that in this case, the referent(s) can be constant across the epistemic state of the speaker. This is because the variation requirement is satisfied with respect to a different domain.

- (17) *At 8pm, Dave always watches whatever is on HBO. (Yesterday it was the Titanic.)*

The meaning of (17) is provided in (18).

- (18) a.  $[[\text{(17)}]] = \forall s [s \text{ takes place at 8pm} \rightarrow \text{Dave watches } \sigma x[x \text{ is on HBO in } s]]$   
 b.  $[[\text{whatever is on HBO}]]$  conveys that there are at least two situations,  $s, s'$ , such that they take place at 8pm and  $\sigma x[x \text{ is on HBO in } s] = \sigma x[x \text{ is on HBO in } s']$

### 3.3 The variation requirement contributed by the Czech *-koli(v)*

The variation requirement introduced by the Czech ever-morpheme *-koli(v)* is more specific than (14): the variation dimension must correspond to the domain of a quantificational operator.

- (19) Variation requirement imposed by *-koli(v)*  
 The denotation of a Czech ever FR co-varies with a variable bound by a quantificational operator.

<sup>10</sup> I remain agnostic with respect to the question whether the requirement is a presupposition, a conventional implicature, or yet something else. See CONDORAVDI (2008) and LAUER (2009) for a recent discussion.

This variation requirement effectively renders Czech ever FRs dependent definites, i.e., definite counterparts of FARKAS's (1997, 2002) dependent indefinites. Dependent expressions are expressions whose reference covaries with a clausemate quantifier-bound variable.<sup>11</sup> The proposal that ever FRs are dependent definites in Farkas's sense was hinted at but turned down for English by LAUER (2009). For Lauer, the main reason not to treat English ever FRs as dependent definites is the fact that they also exhibit "independent" uses or, what he calls conversation-oriented uses. The prototypical example of a conversation-oriented use of an ever FR is the ignorance ever FR, exemplified in (3) (repeated below as (20a)) and discussed in the previous subsection. But this reading is unavailable in Czech, as shown above in (4c) and repeated in (20b).

- (20) a. *Yesterday at 8pm, Dave was watching whatever they were showing on HBO.*  
 b. #*Včera v 8 David sledoval, **cokoliv** dávali na HBO.*  
*Yesterday at 8 David watched whatever gave on HBO*  
 Intended: 'Yesterday at 8, David was watching whatever they were showing on HBO.'

Another instance of an "independent" use of an ever FR is an identity ever FR that expresses indifference (see VON FINTEL 2000, TREDINNICK 2005).<sup>12</sup> Consider example (21). In this case, the ever-morpheme does not indicate ignorance (neither of the speaker, nor of Martin), as shown by the felicitous continuation in brackets. Rather, it indicates that Martin behaved indifferently in the moment – he did not care about the identity of the thing he grabbed. VON FINTEL (2000) and TREDINNICK (2005) argue that the indifference inference arises as a consequence of the variation requirement, satisfied by considering counterfactual identities in the case at hand: had the identity of the available thing been different, Martin would still have grabbed it.

- (21) *Martin got annoyed by the fly, so in order to kill it ...*  
*he grabbed whatever was handy. (He later told me that it was my passport.)*

The corresponding Czech example is not felicitous, at least not under the intended (and plausible) reading where there was a single grabbing instance. It gets better when one is willing to coerce a reading with multiple actual grabbing instances,

11 Examples of dependent indefinites include Hungarian indefinites with reduplicated determiners, e.g. *egy egy NP* (FARKAS 1997), but also the English *some/sm NP* (FARKAS 2002), and the Russian *nibud' NP* (PERELTSVAIG 2008). A detailed empirical and theoretical comparison of Farkasian dependent (in)definites and Czech ever FRs is left for another occasion.

12 LAUER (2009, section 5.2) attempts to subsume identity indifference ever FRs under conversation-oriented uses.

in each of which the thing that Martin grabbed was different. Considering counterfactual possibilities in an attempt to satisfy the variation requirement is clearly not sufficient: the source of variation is semantically contingent on the clausal material. This confirms the dependent nature of Czech ever FRs.

- (22) *Ta moucha už Martina otravovala, tak aby ji zabil, ...*  
 the fly already Martin annoyed so in.order.to it kill  
 ‘Martin got annoyed by the fly, so in order to kill it ...’  
*#popadl, cokoliv bylo po ruce. (Později mi řekl, že to byl můj pas.)*  
 grabbed whatever was at hand (Later me<sub>DAT</sub> said that it was my passport)  
 Intended: ‘he grabbed whatever was handy. (Later he told me that it was my passport.)’

## 4. Semantics of Czech ever FRs

Having probed the core contribution of the Czech ever-morpheme *-koli(v)*, we can now get to a more explicit analysis of Czech ever FRs and inspect the nature of the quantifiers that can license them.

Consider the schema in (23a). The ever FR is licensed if there is a quantifier *Q* somewhere in the CP such that the denotation of the FR covaries with the value of the variable *x* bound by the quantifier. The covariation is achieved by relativizing the meaning of the FR to the bound variable, as indicated in (23b).

- (23) a.  $[_{CP} \dots Q \dots [_{FR} \text{wh-}koli(v) \dots]]$   
 b.  $Qx \dots \sigma\gamma [ [[FR]] (\gamma)(x) ]$

I first illustrate how (23) works on the example of adverbial quantification (Section 4.1 and then turn to other types of quantifiers (Section 4.2). I finish by discussing the universal-like behavior of ever FRs and how it can be handled in the definiteness analysis (Section 4.3).

### 4.1 Adverbial quantifiers

Let us start with a simple case, reiterated from above: covariation with a variable bound by an explicit adverbial quantifier.<sup>13</sup> The semantics of the ever FR in (24) is given in (25a) and the truth conditions of the whole example (24) are in (25b). The

<sup>13</sup> Covariation of *wh*-clauses, including FRs, was first thoroughly discussed in BERMAN (1991), who took the covariation possibility to be an argument for the indefiniteness of FRs. Yet, definite DPs lend themselves readily to covarying interpretations, too (see, e.g. ELBOURNE 2005, SCHWARZ 2009). See HINTERWIMMER (2008) for the analysis of covarying interpretations of FRs under the definiteness analysis.

FR satisfies the variation requirement by covarying the thing bought by Kamila with the situation variable bound by the quantificational adverb *vždycky* ‘always’ or *většinou* ‘mostly’ as captured in (25c).<sup>14</sup>

- (24) *Kamila vždycky / většinou koupila, cokoliv našla v reklamním letáku.*  
Kamila always / usually bought whatever found in ad-flyer  
‘Kamila always/usually bought whatever she found in an/the ad-flyer.’
- (25) a.  $[[\text{cokoliv} [\text{Kamila}] \text{ našla v reklamním letáku in } s_i]]^g = \sigma x[\text{Kamila found } x \text{ in the ad-flyer in } g(1)]$  (where 1 is the index of the variable bound by ALL/MOST)
- b.  $[[\text{(24)}]] = \text{ALL/MOST } s[s \text{ is a situation where Kamila inspected an/the ad-flyer (and went shopping afterwards)} \rightarrow \exists s' [s' \geq s \ \& \ \text{Kamila bought } \sigma x[\text{Kamila found } x \text{ in the ad-flyer in } s] \text{ in } s']]$
- c.  $\exists s, s' \in D(\text{ALL/MOST}_{(25b)}) [\sigma x[\text{Kamila found } x \text{ in the ad-flyer in } s \text{ (and later bought } x)] \neq \sigma x[\text{Kamila found } x \text{ in the ad-flyer in } s' \text{ (and later bought } x)]]$

The fact that (24) is felicitous even without any quantificational adverb, as in (26), seems *prima facie* problematic for the claim that Czech ever FRs must covary with a clausemate quantifier. The crucial observation relevant here is that the FR lacks the identity reading (having found and bought a single thing). The example entails that there were more instances of something that she found in an/the ad-flyer and bought. I will follow TREDINNICK (2005) in assuming that ever FRs can, in a sense, “self-license” themselves. As long as nothing prevents it (cf. the discussion of (20b)), a universal quantifier over situations is inserted into the semantic representation, yielding the truth conditions in (27). It is this process that prevents Czech ever FRs from having the identity reading and makes them obtain the universal-like reading.<sup>15</sup>

14 Concerning quantificational adverbs: I assume standard generalized quantifier semantics (BARWISE & COOPER 1981) for them;  $\text{ALL}(P)(Q) = P \subseteq Q$  and  $\text{MOST}(P)(Q) = |P \cap Q| > 1/2|P|$ . Concerning situations: The domain of situations is partially ordered by the part-of relation ( $\leq$ ) and thus forms a semi-lattice with the maximal element corresponding to a possible world (KRATZER 1989). I follow the general trend and assume that the quantificational domain consists of minimal situations (without explicitly stating this in the semi-formalizations, for the sake of readability), taking it that the benefits outweigh the problems (see VON FINTEL 1994, ELBOURNE 2005, 2013, KRATZER 2008, SCHWARZ 2009, a.o.). Relativizing definite DP (and FR) denotations to situations is instrumental in satisfying their uniqueness presupposition.

15 Notice that the analysis is flexible enough to capture the plausible scenario where Kamila found a number of things (one after another) in a flyer and then bought them all at once. I.e., there need not be multiple instances of the buying event. This is captured if the single buying situation is a supersituation of each of the finding situations.

- (26) *Kamila včera koupila, cokoliv našla v reklamním letáku.*  
 Kamila yesterday bought whatever found in ad-flyer  
 '(Yesterday,) Kamila bought whatever she found in an/the ad-flyer.'
- (27)  $[[[(26)]] = \forall s[s \text{ is a situation where Kamila found something in an/the ad-flyer (yesterday)} \rightarrow \exists s' [s' \geq s \ \& \text{ Kamila bought } \sigma x[\text{Kamila found } x \text{ in the ad-flyer in } s] \text{ in } s']]]$

Depending on the nature and temporal distribution of the situations in the domain of the quantifier, (26) can but need not be truth-conditionally equivalent to (24). In (24), the adverb *vždycky* 'always' seems to introduce the inference that the situations in its domain are temporally relatively distant from one another (e.g. days or weeks). No such inference is present in (26), where, esp. if the sentence is modified by *včera* 'yesterday', the situations can be temporally adjacent and can span over, say only a minute.

## 4.2 Further types of quantifiers

### 4.2.1 Generic/habitual

One of the prototypical licensors (satisfiers of the variation requirement) of Czech ever FRs is the habitual or generic operator (GEN), which is a universal operator with certain special properties, which need not concern us here (see CARLSON & PELLETIER 1995). The operator is covert but its presence is particularly salient in sentences with habitually interpreted simple present tense, as in (28a), whose truth conditions are in (28b). The variation requirement, (28c), is satisfied readily in this case. Compare (28a) with (29), which is formally similar but involves a present progressive interpretation, made salient by the adverbial *právě teď* 'right now'. In this case, no quantification over situations is involved and hence there is nothing to license the FR.

- (28) a. *O víkendech jím, cokoliv manželka uvaří.*  
 at weekends eat<sub>1SG</sub> whatever wife cooks  
 'At weekends, I eat whatever my wife cooks.'
- b. GEN  $s[s \text{ is a weekend lunchtime situation} \rightarrow \text{I eat } \sigma x[\text{my wife has cooked } x \text{ in } s]]$
- c.  $\exists s, s' \in D(\text{GEN}_{(28b)})[\sigma x[\text{my wife cooked } x \text{ in } s] \neq \sigma x[\text{my wife cooked } x \text{ in } s']]$
- (29) *#Právě teď jím, cokoliv manželka uvařila.*  
 right now eat<sub>1SG</sub> whatever wife cooked  
 Intended: 'I'm eating right now whatever (it is that) my wife cooked.'

## 4.2.2 Future (vs. past)

The future tense also licenses Czech ever FRs. Future can be expressed in two ways in Czech – by present tense + perfective aspect or by the future auxiliary *budu* ‘will(be)’ + imperfective infinitive. Both of these can license ever FRs, as shown in (30a). I follow ENÇ (1996), COPLEY (2002), and others and assume that the future is in fact a universal quantifier over possible worlds (I stick to the more general situation ontology for consistency), namely over possible continuations of the reference situation, (30b). Therefore, the satisfaction of the variation requirement proceeds in parallel to the above examples: the identity of the thing cooked by my wife tonight differs from one possible continuation to another, (30c).

- (30) a. *Dnes večer sním / budu jíst, cokoliv manželka uvaří.*  
 today evening eat<sub>pf,1SG</sub> / will<sub>1SG</sub> eat<sub>impf.inf</sub> whatever wife cooks<sub>pf</sub>  
 ‘Tonight I will eat whatever my wife will cook.’
- b.  $\forall s$  [s is a possible continuation of the present situation, which takes place tonight and in which my wife cooks  $\rightarrow$  I eat  $\sigma x$ [my wife has cooked x in s]]
- c.  $\exists s, s' \in D(\text{FUT}_{(30b)}) [\sigma x$ [my wife cooked x in s]  $\neq \sigma x$ [my wife cooked x in s']]

It is instructive to directly contrast (30a) with an analogous FR involving the simple past, as in (31). In the previous section, I demonstrated that Czech ever FRs can “self-license” themselves. This is exactly what happens in (31): multiple instances of cooking/eating (and hence things cooked/eaten) are inferred in order to license the FR, making it similar in nature to FRs licensed by the generic operator, as in (28a). In this respect, the FR in (31) (and in (28a)) contrasts with the one in (30a): in the former case, there are multiple actual instances of the relevant situation, whereas in the latter case, only one of the possible situations will turn out to be the actual one (unless an additional operator is inferred in the scope of the future one). Only in the former case is the variation requirement satisfied by multiple actual identities, giving rise to the universal-like reading of the FR.

- (31) *Včera večer jsem snědl, cokoliv manželka uvařila.*  
 yesterday evening (AUX<sub>1SG</sub>) ate whatever wife cooked  
 ‘I ate yesterday whatever my wife cooked.’

The contrast between past and future can best be observed with predicates which only allow single instances, such as ‘be born’. In (32a), the ever FR is felicitous (variation over potential decision/birth situations) but sounds awkward in (32b), where multiple actual decision/birth instances are obligatorily inferred in order to license the FR.<sup>16</sup>

16 A speaker I consulted senses the multiple-instance reading even in (32a). I leave it for future re-



- (32) a. *Jejich dcera se narodí, kdykoliv lékaři rozhodnou, že je nejlepší čas.*  
 Their daughter REFL be.born whenever doctors decide that is best time  
 ‘Their daughter will be born whenever the doctors decide is the best time.’
- b. *Jejich dcera se narodila, kdykoliv lékaři rozhodli, že je nejlepší čas.*  
 Their daughter REFL was.born whenever doctors decided that is best time  
 Intended: ‘Their daughter was born whenever the doctors decided was the best time (whenever it was).’

#### 4.2.3 Modals

Czech ever FRs can be licensed by modal operators, such as the necessity modal *muset* ‘must’ (deontic) or *chtít* ‘want’, as illustrated in (33a) and (34a), respectively. The examples have parallel structures and truth-conditions and differ only in the modal base contributed by the modal: a deontic modal base in (33a) and a bouletic one in (34a), as expressed in (33b)/(34b). The variation requirement is satisfied by varying the identity of the person that Marie has married in the situations quantified over by the modal. Since only one of the people will turn out to be the one, the ever FRs have identity rather than universal-like readings.<sup>17</sup>

- (33) a. *Marie si musí vzít, kohokoliv jí vyberou rodiče.*  
 Marie REFL must marry<sub>inf</sub> whoever her<sub>DAT</sub> choose parents  
 ‘Marie has to marry whoever her parents choose for her.’
- b.  $\forall s$ [the (actual) marriage-related obligations imposed on Marie by her parents are satisfied in  $s \rightarrow$  Marie has married  $\sigma x$ [Marie’s parents chose  $x$  for Marie to marry in  $s$ ]]
- (34) a. *Marie si chce vzít, kohokoliv jí vyberou rodiče.*  
 Marie REFL wants marry<sub>inf</sub> whoever her<sub>DAT</sub> choose parents  
 ‘Marie wants to marry whoever her parents choose for her.’
- b.  $\forall s$ [Marie’s (actual, marriage-related) wishes are satisfied in  $s \rightarrow$  Marie has married  $\sigma x$ [Marie’s parents chose  $x$  for Marie to marry in  $s$ ]]

search which factor is responsible for the speaker-variation. It could be the type of operator involved (future not being licenser for some speakers), but also the type of *wh*-word (*kdykoliv* ‘whenever’ vs. *co-koliv* ‘whatever’ or *kdokoliv* ‘whoever’). That it is the latter receives support from the fact that the same speaker accepts (i), describing a single-marriage situation:

- (i) *Vezmu si, kohokoliv mi vyberou rodiče.*  
 marry<sub>pf,1SG</sub> refl whoever me choose<sub>pf,3PL</sub> parents  
 ‘I will marry whoever my parents choose for me.’

17 Again, speaker-variation is possible here.



Not all modals are equally good licensors of Czech ever FRs. Consider (35), which involves epistemic modals: the adverb *určitě* ‘for sure’ and the predicate *být přesvědčen (že)* ‘be convinced (that)’.

- (35) a. #*Marie si určitě vzala, kohokoliv jí vybrali rodiče.*  
 Marie REFL for.sure married whoever her<sub>DAT</sub> chose parents  
 Intended: ‘For sure, Marie married whoever her parents chose for her.’
- b. #*Jsem přesvědčen, že Marie si vzala, kohokoliv jí vybrali rodiče.*  
 I.am convinced that Marie REFL married whoever her<sub>DAT</sub> chose parents  
 Intended: ‘I’m convinced that Marie married whoever her parents chose for her.’

This finding matches the observation that Czech ever FRs do not exhibit the ignorance reading (as already noted in the introduction), which is also the most prominent intended reading of the examples in (35). The fact that these examples pattern in acceptability with the unembedded ignorance cases (as in (4c)) rather than with embedded non-ignorance ones (as, e.g., in (33a)) opens up the possibility that the variation requirement of Czech ever FRs is not defined by covariation with a variable that is bound (as in (19)) but rather with a variable that ranges over a certain domain. The investigation so far would suggest that covariation with variables ranging over epistemic states is unavailable. The issue is left for future research.

### 4.3 Universal-like behavior of ever FRs

The definiteness analysis of ever FRs is *prima facie* problematic in view of their universal-like behavior. Not only do some ever FRs readily allow for universal paraphrases, as noted in the introduction, there is even a range of empirical diagnostics that classify ever FRs as universal, including the modification by *almost*-type adverbs and the capacity to license negative polarity items (NPIs), illustrated below.<sup>18</sup> In (36a), the ever FR is modified by *téměř* ‘almost’ and in (36b), the ever FR contains the NPI *kdy* ‘ever’ (lit. ‘when’).<sup>19</sup> The control in (37a) shows that these expressions are indeed sensitive to universal quantification and (37b) shows that they are not licensed/supported in plain FRs.

18 The reader is referred to TREDINNICK (2005) for a detailed discussion.

19 The capacity of Czech ever FRs to license the NPI ‘ever’ is confirmed by naturally occurring examples, e.g. (i).

(i) *Znám jeho srdce; cokoliv kdy řekl, jsem psala sestře.*  
 know<sub>1SG</sub> his heart whatever ever said<sub>3SG</sub> AUX<sub>1SG</sub> wrote sister  
 ‘I know his heart. I wrote to his sister anything he ever said.’

On the other hand, naturally occurring modification by *almost*-type adverbs is hard to find. This corresponds to the intuition: despite some felicitous examples, the majority of instances of ever FRs in Czech resist such modification.



- (36) a. *Sním, téměř cokoliv mi uvaříš.*  
 eat<sub>pf.1SG</sub> almost whatever me<sub>DAT</sub> cook<sub>pf.2SG</sub>  
 'I eat almost anything you cook for me.'
- b. *Sním, cokoliv mi kdy uvaříš*  
 eat<sub>pf.1SG</sub> whatever me<sub>DAT</sub> ever cook<sub>pf.2SG</sub>  
 'I eat anything you ever cook for me.'
- (37) a. *Sním téměř všechno / \*to / \*něco, co mi kdy uvaříš.*  
 eat<sub>pf.1SG</sub> almost everything / that / something what me<sub>DAT</sub> ever cook<sub>2SG</sub>  
 'I eat almost everything / \*the thing / \*something that you ever cook for me.'
- b. *Sním, téměř cokoliv / \*co mi kdy uvaříš.*  
 eat<sub>pf.1SG</sub> almost whatever / what me<sub>DAT</sub> ever cook<sub>pf.2SG</sub>  
 'I eat almost whatever / \*what you ever cook for me.'

I follow TREDINNICK (2005) and assume that if these expressions occur, they are not licensed by the ever FR itself (which is definite), but rather by the covert (generic) operator inferred to satisfy the variation requirement. There are a number of reasons to believe that this is indeed the case. First, both (36a) and (36b) are, indeed, interpreted generically/habitually. Second, once a future and single-instance interpretation is forced by an adverbial, as in (38a), the very same ever FR loses the capacity to support almost-type adverbials and license NPIs. Third, a similar effect is observed even if the generic/habitual interpretation is kept but is expressed by an overt adverbial, as in (38b).<sup>20</sup>

- (38) a. ***Dnes večer*** *sním, (\*téměř) cokoliv mi (\*kdy) uvaříš.*  
 Today evening eat<sub>pf.1SG</sub> almost whatever me<sub>DAT</sub> ever cook<sub>pf.2SG</sub>  
 'Tonight, I will eat (almost) whatever you will (ever) cook.'
- b. ***Vždycky / Většinou*** *sním, (\*téměř) cokoliv mi (\*kdy) uvaříš.*  
 always / mostly eat<sub>pf.1SG</sub> almost whatever me<sub>DAT</sub> ever cook<sub>pf.2SG</sub>  
 'I always / mostly eat (almost) whatever you will (ever) cook for me.'

20 For some speakers, modification by *téměř* 'almost' in (38b) might produce a grammatical result, but crucially, with a different reading, one where an additional layer of genericity is inferred in the scope of the one contributed by the overt adverbial.

## 5. Conclusion

I argued that the standard definiteness analysis of free relatives, including ever free relatives, accounts for Czech facts, despite the high salience of universal-like readings and the limited availability of identity readings of ever FRs in this language. The differences between English and Czech were argued to follow from the stricter variation requirement imposed on the denotation of ever FRs in Czech: the denotation has to vary with a variable bound by a clausemate quantifier, effectively making Czech ever FRs dependent definites.

The present article is merely the first step towards a deeper investigation of Czech ever FRs. Many issues remain open: Why should the variation requirement be stricter in Czech than in English? Should the stricter variation requirement be specified in terms of covariation with a bound variable, in line with the present proposal, or rather covariation with a specific sort of variable (e.g. root vs. epistemic) — a possibility raised in Section 4.2.3? What is the exact connection between ever FRs and the corresponding free choice items?

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