

## Scrambling in Czech: syntax, semantics, and information structure\*

Petr Biskup  
University of Leipzig

Scrambling in Czech affects syntactic, semantic, and information-structural properties of a sentence. To derive these properties, I propose a theory of scrambling based on the unification of Diesing (1992) with Chomsky's phase model (2000, 2001a,b, 2005) and enriched with information structure. I argue that Diesing's splitting of the syntactic tree and its mapping into the restrictor and the nuclear scope can be correlated with the minimalist splitting of sentences into the CP and vP phase and with the splitting of sentences into background and information focus. Thus, scrambling is a narrow syntactic phenomenon driven by the interface condition that backgrounded specific elements are to be linearized and interpreted in the CP phase (the left part of sentences) in scrambling languages like Czech. In the narrow syntactic part of the analysis of scrambling I propose the general principle of Phase Featuring that drives features in successive-cyclic movement and consequently can properly derive syntactic properties of scrambling.<sup>1</sup>

### 1 Introduction

Czech is an SVO language without overtly realized articles that has relatively free word order - scrambling. Case on noun phrases does not reveal anything about definiteness or specificity, neither does it depend on the position of noun phrases in a sentence. The question arises what role scrambling plays in computation. It has been proposed that scrambling is a property peculiar to OV languages (Haider & Rosengren (2003), Neeleman & Reinhart (1998), Saito & Fukui (1998)). Some have also argued that scrambling is a phonological phenomenon (e.g., Neeleman & Reinhart (1998)) or that scrambling is a base-generation process (e.g., Bošković & Takahashi (1998)). In contrast to these

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<sup>1</sup> By scrambling here I mean short scrambling. The term *information focus* is taken from Kiss (1998) and refers to new-information focus, presentational focus, i.e., non-contrastive, non-exhaustive focus. The term *background* here means old information, givenness.

claims, I argue that Czech as a VO language has scrambling as well and that scrambling is narrow syntactic movement driven by interface-related conditions.

The article is organized as follows. In section 2 I discuss semantic and information-structural properties of Czech scrambling. I show that scrambling affects both interface systems, therefore it must be a narrow syntactic process. In section 3 I propose a minimalist model able to derive scrambling building on the observation that the edge of vP is a boundary relevant to syntax, semantics and information structure. In section 4 I lay out conceptual and empirical arguments against Chomsky's (2001a) approach to free word order phenomena and propose the Phase Featuring principle that determines the presence of intermediate features in indirect feature-driven movement. I use Phase Featuring for the narrow syntactic analysis of scrambling and overcoming problems of Chomsky's approach.

## 2 Semantic and information-structural properties of scrambling

In this section I examine how scrambling in Czech affects semantic and information-structural properties of a sentence. Following the standard minimalist approach where the two interface systems do not communicate with each other, I argue that scrambling is a narrow syntactic operation because phonological effects of scrambling at the phonological interface correlate with semantic effects at the semantic interface.

Consider the conversation between two villagers in (1). In sentence (1b), the direct object *psa* occurs in situ in vP.<sup>2</sup> It can be interpreted existentially. This interpretation is possible, e.g., in the case where Marie drove through the village and a dog ran into the road. It could be any dog from the village. Then speaker (a) might continue *Jakého psa?* (What dog?). The direct object in (1b) can also get a specific interpretation. It can be Mary's dog. She did not see it when she backed her car out of the garage. In this case, speaker (a) might continue *To ho asi pěkně oplakala.* (She surely cried over it a lot.) However, when the direct object is scrambled - it is spelled out outside vP and precedes the temporal adverbial (1c), it can be interpreted only specifically.<sup>3</sup>

- (1) a. *Context: Co je Marii?*<sup>4</sup>  
       'What is wrong with Marie?'

<sup>2</sup> Temporal adverbials mark the edge of vP (see Junghanns (in press), Kosta (2003)).

<sup>3</sup> In these contexts some speakers prefer adding demonstrative pronouns heading the backgrounded DPs, which supports the claim that scrambled elements get a specific reading. Although Czech does not have overtly realized articles, one can use demonstrative pronouns or weakly quantified adjectives. In Czech, as in many other languages (see, e.g., Geurts (to appear)), definiteness is closely related to specificity; but not equal.

<sup>4</sup> Examples in this paper do not contain contrastive focus and have a normal intonational contour.

- b. Marie<sub>1</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>1</sub> zajela psa]].  
 Marie-NOM in the afternoon ran over dog-ACC  
 ‘Marie ran over her/the dog in the afternoon.’  
 ‘Marie ran over a dog in the afternoon.’
- c. # Marie<sub>1</sub> psa<sub>2</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>1</sub> zajela t<sub>2</sub>]].<sup>5</sup>  
 Marie-NOM dog-ACC in the afternoon ran over  
 ‘Marie ran over her/the dog in the afternoon.’

Let us turn to the information-structural status of the direct object. It is a fact that there exists a question-answer correlation. Given this fact and the pragmatic felicity of the answer in (1b) to the question in (1a), the direct object in vP is informationally focused. In contrast, when the object scrambles – precedes the adverbial (1c), the sentence is pragmatically inappropriate in the context in (1a). It follows that here the object is not focused; it is backgrounded.

Subjects can scramble as well, consider the dialog in (2). In sentence (2b) the subject *soused* occurring inside vP can be interpreted existentially. It could be anybody from the neighborhood<sup>6</sup> who kicked Pavel. However, if the subject is scrambled – spelled out outside vP, as in (2c), it must get a specific interpretation, it refers to some particular person from the neighborhood. On closer inspection, the subject DP in (2b), although overtly inside vP, can also have a specific reading, which is obvious from the fact that (2b) might be continued, e.g., by *Viš, koho myslím.* (You know whom I mean.)

- (2) a. *Context:* Co je Pavlovi?  
 ‘What is wrong with Pavel?’
- b. Pavla<sub>1</sub> nakopal [<sub>VP</sub> odpoledne [<sub>VP</sub> soused t<sub>1</sub>]].  
 Pavel-ACC kicked in the afternoon neighbor-NOM  
 ‘A neighbor kicked Pavel in the afternoon.’
- c. # Pavla<sub>1</sub> soused<sub>2</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>2</sub> nakopal t<sub>1</sub>]].  
 Pavel-ACC neighbor-NOM in the afternoon kicked  
 ‘The neighbor kicked Pavel in the afternoon.’

As far as the information-structural status of the subject is concerned, the same pattern as in (1) emerges. In (2b) the subject occurring in situ in vP is informationally focused, as indicated by the appropriateness of the answer to question (2a). In contrast, when the subject is scrambled (spelled out outside vP), it is backgrounded, as shown by the pragmatic infelicity of (2c) in the context in

<sup>5</sup> The hash indicates pragmatic infelicity of the sentence in the given context. However, in another context the sentence is appropriate. Because of lack of space, I do not show the appropriate contexts in examples.

<sup>6</sup> The DP *soused* (neighbor) introduces a context variable, therefore it can refer to a neighbor of Pavel or a neighbor of the speaker.

(2a). Thus, as with example (1), the edge of vP divides the sentence into two parts: background and information focus.

So far, I have treated singular noun phrases. Now I will turn to plural DPs. Take, for example, sentence (3b). Given the context question, it is obvious that the bare plural *lvy* occurs in the domain of information focus. It stays in situ, hence it can get both readings, existential and specific. In this case, it is generic specificity because the bare plural object here refers to the kind of lions and kinds are considered to denote some particular set of entities. However, in (3c) where the object is scrambled (backgrounded, as evidenced by the pragmatic infelicity of the answer in (3c) to the question in (3a)) the only possible interpretation of the object is generic. As expected, these data show that plural DPs are ambiguous as well between an existential interpretation and a presuppositional interpretation only in a vP-internal position.

- (3) a. *Context: Co dělá tamhleten lovec?*  
           ‘What is that hunter doing?’  
           ‘What does the hunter do?’
- b. Tamhleten lovec<sub>1</sub> [<sub>vP</sub> ted’ [<sub>vP</sub> t<sub>1</sub> loví lvy]].  
    that hunter-NOM now hunts lions-ACC  
    ‘That hunter is hunting lions now.’  
    ‘That hunter hunts lions now.’
- c. # Tamhleten lovec<sub>1</sub> lvy<sub>2</sub> [<sub>vP</sub> ted’ [<sub>vP</sub> t<sub>1</sub> loví t<sub>2</sub>]].  
    that hunter-NOM lions-ACC now hunts  
    ‘That hunter hunts the lions now.’

In the preceding examples I treated bare noun phrases. Let us try modified DPs. It is possible to use the weak quantifier *nějaký* (some, a) as an indefinite article in Czech.<sup>7</sup> Keeping that in mind, consider example (4). The vP-internal DP stays in the focus domain and gets an existential reading. On the other hand, if the subject is spelled out outside vP, it is backgrounded and it must be interpreted specifically, as demonstrated in (4b). There seems to be yet another type of specificity (in addition to the epistemic one) involved in sentence (4b), namely, partitive specificity.<sup>8</sup> Under this interpretation, the DP *nějaké děti* picks out only a few members from the presupposed set of children and they are placed on the roof and it is presupposed that there is another group of children. The sentence might then be followed, e.g., by *Ty další se schovaly ve sklepě*. (The others hid in the cellar.)

<sup>7</sup> The quantifier *nějaký* is morphologically an adjective. The question of whether it is an instantiation of D or not is not relevant here; for discussion, see Bošković (2004) and references cited there.

<sup>8</sup> The notion of epistemic specificity is taken from Farkas (2002), on the topic of partitivity, see, e.g., Enç (1991).

- (4) a. Na střeše byly [<sub>vP</sub> včera [<sub>vP</sub> nějaké děti]].  
 on roof were yesterday some children-NOM  
 ‘There were children on the roof yesterday.’
- b. Nějaké děti<sub>1</sub> byly [<sub>vP</sub> včera [<sub>vP</sub> t<sub>1</sub> na střeše]].  
 some children-NOM were yesterday on roof  
 ‘Some children were on the roof yesterday.’  
 ‘Some of the children were on the roof yesterday.’

To show that it is necessary to differentiate between specificity - as a referential property of DPs (e.g., Heusinger (2002)) - and backgrounding, as a discourse pragmatic property of DPs, consider (5). If you want to report about an accident in the bar, you cannot say to your friend (5b) as an out-of-the-blue utterance, even if your friend knows who you are talking about. Although it is referential (specific), the proper name DP *Pavel* cannot move and be backgrounded (preceding the adverbial). If it is not introduced into the discourse before, it must stay in situ in vP - in the domain of information focus, as illustrated by (5a).<sup>9</sup>

- (5) a. Nějaký kovboj<sub>1</sub> [<sub>vP</sub> včera [<sub>vP</sub> t<sub>1</sub> zastřelil Pavla]].  
 A cowboy-NOM yesterday shot Pavel-ACC  
 ‘A cowboy shot Pavel.’
- b. # Nějaký kovboj<sub>1</sub> Pavla<sub>2</sub> [<sub>vP</sub> včera [<sub>vP</sub> t<sub>1</sub> zastřelil t<sub>2</sub>]].  
 A cowboy-NOM Pavel-ACC yesterday shot  
 ‘A cowboy shot Pavel.’

To sum up this section, I showed that scrambling in Czech feeds both the semantic and the phonological interface. While vP-internal elements are informationally focused and can be interpreted existentially or specifically, scrambled elements are spelled out outside vP, they are backgrounded and can have only a specific interpretation. Thus, backgrounding implies specificity but specificity does not imply backgrounding. Backgrounding means that the referent has been introduced into the discourse before. Specificity, which can be epistemic, partitive or generic, means that the existence of a set of referent(s) is presupposed.

### 3 The analysis

In this section I address the relationship between scrambling as a part of narrow syntax and the semantic and phonological interface. The discussion in the preceding section showed that the edge of vP is a computational boundary that is relevant to syntax, semantics and information structure. Building on this

<sup>9</sup> Movement of the subject in maximally focused sentences is ‘formal’ - driven by the EPP-feature on T, therefore the subject can reconstruct for focus, see also example (12).

observation and the generalization drawn from the data in the previous section, I propose a theory of scrambling that is based on the unification of Diesing's Mapping Hypothesis (1992) with Chomsky's phase model (2000, 2001a,b, 2005) and enriched with information structure.

Diesing, following Heim (1982)<sup>10</sup> and the theory of generalized quantifiers<sup>11</sup> (see Barwise & Cooper (1981)) proposes that the syntactic clause structure can be split into two parts - VP and IP - which correspond to the nuclear scope and the restrictive clause of the tripartite quantificational representation, respectively, see Diesing (1992, 10):

- (6) Mapping Hypothesis  
 Material from VP is mapped into the nuclear scope.  
 Material from IP is mapped into a restrictive clause.

I argue that Diesing's mapping of the syntactic tree into the restrictive clause and the nuclear scope can be correlated with the minimalist splitting of sentences into the CP and vP phase and with the splitting of sentences into the domain of background and the domain of information focus. Under this approach, from the syntactic point of view, the edge of vP marks the boundary between the two phases. From the semantic point of view, the edge of vP marks the boundary between the restrictive clause and the nuclear scope; and from the information-structural point of view, it marks the boundary between the domain of background and the domain of information focus. At the semantic interface, the elements from the vP phase are mapped into the nuclear scope and the elements from the CP phase are mapped into the restrictive clause of the quantificational structure.<sup>12</sup> Thus, in the present model the mapping process reflects the phase structure of a sentence.

More concretely, the specific interpretation of a DP in situ arises, see, e.g., (1b), when it is QR-ed and bound in the domain of the restrictive clause (the CP phase). Under the copy theory of movement, it means that the upper copy is interpreted at the semantic interface (it results in specificity) and the lower copy is spelled out (it results in focused interpretation).<sup>13</sup>

The existential interpretation of a DP arises, see again, e.g., (1b), if the variable introduced by the DP is not inherently quantified and if there is no

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<sup>10</sup> Heim (1982) proposes that at LF, quantificational elements trigger the partition of a sentence in three parts, an operator, a restrictor (the domain of quantification) and a nuclear scope (predication, assertion).

<sup>11</sup> The theory of generalized quantifiers takes DPs (generalized quantifiers) to be predicates over predicates (properties) and determiners to be predicates quantifying over two predicates (the restrictive clause and the nuclear scope).

<sup>12</sup> I also assume something like the Quantifier Construal rule that forms a tripartite quantificational structure, as Heim (1982) and Diesing (1992).

<sup>13</sup> It is also possible to interpret indefinites in situ by means of choice function. This question I leave aside here. In the case of the generic interpretation, the element can be mapped into the restrictor of an implicit generic operator.

quantificational operator binding it in the sentence. To achieve the binding of free variables in the nuclear scope, the nuclear scope is existentially closed off by the existential closure. Thus, the DP is both spelled out and interpreted in the vP phase.

What scrambling does is that it moves elements to the CP phase across the edge of vP in narrow syntax, see, e.g., (1c). Then, the upper copy is both mapped into the restrictive clause (the element is interpreted specifically) and spelled out (interpreted as backgrounded).

It is standardly assumed that movement must be triggered, see Chomsky (1995, 253):

- (7) Last Resort  
'Move is driven by feature checking ...'

The data in the preceding section show that noun phrases can receive case in situ. That no movement is necessary for DPs to get a case is illustrated by (1b) for the direct object and (2b) for the subject.<sup>14</sup> Since I make the usual assumption that elements get theta roles in their first-merge positions, theta roles cannot motivate scrambling either. One might conclude that backgrounding is an ideal candidate for the feature triggering scrambling because also specifically interpreted DPs can stay in situ, as demonstrated, e.g., by the b examples in (1), (2) and (3), hence specificity does not trigger scrambling either. However, as discussed above, specific elements in situ can QR. The point I want to make here is that specificity can trigger both types of movement overt and covert. I therefore make use of a Specificity-feature (as, e.g., Hinterhölzl (2002)). In the case of overt movement - scrambling, the Specificity-feature has the 'strong' property. Thus, I assume that the Specificity-feature can have the generalized EPP-feature as its subfeature, following Pesetsky & Torrego's proposal (2001) that the EPP-feature can be a property of other features. In the case of covert movement, there is a Specificity-feature without the EPP property.

The minimalist framework assumes that the narrow syntactic computation meets the conditions imposed by the interface systems. Consequently, Last Resort can be viewed as a satisfaction of these interface requirements. Thus, the semantic interface determines that elements in the CP phase are mapped into the restrictive clause of the quantificational structure, hence interpreted specifically. In addition, I argue that the phonological interface requires that backgrounded elements are spelled out in the CP phase - the left part of a sentence - in scrambling languages. From this point of view, the Specificity-feature with the EPP property triggering scrambling is determined by the interface requirement that backgrounded specific elements are to be linearized in the left part of sentences (the CP phase) in scrambling languages

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<sup>14</sup> To control that the elements are not moved and right-adjoined to their case positions in sentences like these, one could add a directional adverbial (where the sentence interpretation allows), which is generated in the lowest VP-shell position. The linear order of the DPs and the adverbial would reveal that the DPs really stay in situ.

like Czech. This proposal is in line with Chomsky's claim (2001b, 2005) that internal merge brings about semantic effects; that it is discourse-related.

#### 4 Syntactic properties of scrambling

This section focuses on the narrow syntactic part of the analysis of scrambling. As a starting point I take Chomsky's (2001a) approach to object shift (scrambling) and show that this approach is not empirically adequate and runs into certain conceptual problems. I argue that the difficulties are the consequence of the more general problem with intermediate features in successive-cyclic movement. Then I propose the Phase Featuring principle that can put right the features in indirect feature-driven movement and that consequently can overcome the problems of Chomsky's approach.

Comparing different types of languages and concentrating on Scandinavian object shift, Chomsky proposes an analysis of various optional movements that have semantic effects. He makes a difference between the interpretation of an object in situ and the interpretation imposed on the object shifted to the edge of vP. If the object remains in situ, it can get both semantic interpretations, the 'surface' Int and the 'non-surface' Int'.<sup>15</sup> In contrast, if the object moves, it will get only the Int interpretation.<sup>16</sup> Chomsky's object shift consists of two steps. The first one is EPP-driven movement of the object to the edge of vP yielding Int. The second step is movement of the shifted object to a higher position by a phonological rule Disl(ocation).

##### 4.1 Movement to the edge of vP

There are the following problems with this first step driven by the EPP-feature. First, there in fact exist two types of the EPP-feature. The first one is present in a Subarray and can be checked by external merge. It is the EPP on T checked by an expletive. The second one can be added after exhausting a Subarray and is checked by movement. It is the 'peripheral' EPP-feature on v.

Second, since the second type of the EPP-feature can be assigned to v after exhausting a Subarray, i.e., in the narrow syntactic computation, it violates the Inclusiveness Condition, 'which bars introduction of new elements (features) in the course of computation...' (Chomsky 2001a, 2).

Third, to restrict optionality in assigning the EPP-feature to v, Chomsky (2001a, 35) proposes principle (8).

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<sup>15</sup> Int(erpretive complex) is the name for the semantic interpretation of the shifted object that in Holmberg (1999) has to do with specificity-definiteness, new/old information, topic and focus. Int' is its set complement.

<sup>16</sup> Chomsky also proposes a parameter that distinguishes +/- object shift languages, but this is not relevant to our discussion here.

- (8)  $v^*$  is assigned an EPP-feature only if that has an effect on outcome.<sup>17</sup>

Thus, the presence of the EPP-feature is driven by its consequence because this feature can be used only if it brings about something. To avoid looking ahead, one can let the derivation work freely with the EPP-feature(s) and let the semantic interface decide whether the EPP-feature brought an effect or not. But note that this way of derivation is computationally inefficient (see Frampton & Gutmann (2002)). It also means that the derivation must be able to look back or remember the fashion of the original copy to recognize the effect. It is not a problem in the case of intraclausal movement because Chomsky claims that a strong phase is interpreted at the next higher strong phase, but it does pose a problem for long movement. Take, e.g., wh-movement of an object to the matrix CP. The wh-object does not have to get Int in the EPP position, i.e., it does not have to be D-linked. So, the final decision must wait until the matrix CP. But in this case, there are three phase edges between the head and the tail of the chain.

Fourth, the movement driven by the EPP-feature is not based on Agree because the goal element does not carry a matching feature. However, according to Chomsky, movement is composed of Agree + pied-piping + Merge.

Fifth, the movement driven by the EPP-feature on  $v$  violates locality, as illustrated by object shift in Czech. Both objects are able to scramble in (9). In (9b) where the lower object is moved, there is at least one XP (*dětem*) closer to  $v$  with the EPP-feature than the shifted object *dopisy*.

- (9) a. Pavel<sub>3</sub> dětem<sub>1</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>3</sub> poslal t<sub>1</sub> dopisy<sub>2</sub>]].  
 Pavel-NOM children-DAT in the afternoon sent letters-ACC  
 ‘Pavel sent the children letters in the afternoon.’
- b. Pavel<sub>3</sub> dopisy<sub>2</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>3</sub> poslal dětem<sub>1</sub> t<sub>2</sub>]].  
 Pavel-NOM letters-ACC in the afternoon sent children-DAT  
 ‘Pavel sent the letters to children in the afternoon.’

For (9b) to be properly derived, the scrambled element must carry a feature that is not present on the intervening elements. In the present approach, this is a Specificity-feature. Otherwise it is necessary to ask why  $v$  does not always move the higher object.<sup>18</sup> Chomsky (2001b) is aware of this problem,

<sup>17</sup> Chomsky uses the star to indicate a strong verbal phase. Such a phase has full argument structure (transitive and experiencer constructions, in contrast to passive and unaccusative  $v$ ). In my approach I omit the star because I only distinguish between phases and non-phases and follow Legate (2003) and Richards (2004) who show that all verbal projections in fact are phases.

<sup>18</sup> Depending on theoretical assumptions (whether VP itself is equidistant or closer to  $v$  than the specifier of VP and whether VP as a complement of  $v$  can check the EPP-feature of  $v$  by movement to its specifier position) one might also ask why the edge-feature (the EPP-feature) on  $v$  does not induce movement of VP.

therefore he suggests that some feature of the XP moving to the edge of vP matches the OCC-feature (the EPP-feature). However, in (2005, 17) he tries to avoid the locality problem claiming that the edge-feature is ‘indiscriminate: it can seek any goal in its domain.’<sup>19</sup> This way, Chomsky tests different ways how to cope with the problem of indirect feature-driven movement.

Sixth, both objects can be shifted. Consider sentence (10):

- (10) Pavel<sub>3</sub> dětem<sub>1</sub> dopisy<sub>2</sub> [<sub>vP</sub> odpoledne [<sub>vP</sub> t<sub>3</sub> poslal t<sub>1</sub> t<sub>2</sub>]].  
 Pavel-NOM children-DAT letters-ACC in the afternoon sent  
 ‘Pavel sent the children the letters in the afternoon.’

It appears that there is a need for more than one EPP-feature on v (or more applications) or at least every moved element must carry a feature matching the EPP-feature on v if one assumes one-to-many relation. Otherwise it would be difficult to explain why in sentences (9a,b) in contrast to (10), the EPP-feature triggers just one movement. Consequently, I assume that every scrambled element carries a Specificity-feature.

Seventh, I showed, e.g. (1b), that adverbials can be included in focus at the edge of vP. Nothing forbids an adverbial to merge with vP after movement of an object to the edge. Then, the focused adverbial precedes the object with Int (specific, old = backgrounded). However, this configuration is excluded by the interface conditions. Informationally focused elements may not precede backgrounded elements. Thus, it is not the edge of vP where elements get their Int, but a higher position in the phase CP, as proposed in section two.

## 4.2 Disl movement

If the dislocation rule Disl that moves shifted objects really is a phonological movement, one is led to the conclusion that there are no semantic effects induced by this rule. The prediction is that object movement from the edge of vP to a higher position that crosses Neg should not affect the scope properties established before the movement.<sup>20</sup> Negation thus should always take scope over the scrambled quantified object. But this is not the case, as shown in (11) where the quantified object can take scope over the negation operator.

- (11) a. *Context:* Víš, že Pavel studoval několik škol?  
 ‘Do you know that Pavel studied at a number of universities?’

<sup>19</sup> Chomsky claims that the edge-feature probe does not involve Agree, see also the fourth problem above.

<sup>20</sup> NegP is claimed to be placed between TP and vP in Czech, see Junghanns (in press), Kosta (2003), Veselovská (2004).

- b. Taky všechny školy<sub>1</sub> [<sub>NegP</sub> nedodělal t<sub>1</sub>]. (∇>Neg)  
 anyway all universities-ACC NEG-finished  
 ‘Anyway, he did not finish any university.’

Thus, the second step is not a phonological movement but a process that takes place in narrow syntax.<sup>21</sup> In the present approach this movement is driven by the Specificity-feature present on a head in the CP phase. Following the standard minimalist syntactic structure, I will place the Specificity-feature on T.

The question arises whether the Specificity-feature on the head T is not the same as the EPP-feature of T, as proposed, e.g., by Miyagawa (2001). Thethetic sentence in (12) where the subject of the unaccusative verb satisfies the EPP-feature of T shows that this is not the case. Since there is still need for an EPP-feature on T inthetic sentences and since they lack background, the Specificity-feature cannot be identical with the EPP-feature.

- (12) Dopis<sub>1</sub> [<sub>VP</sub> přišel t<sub>1</sub>].  
 a letter-NOM came  
 ‘A letter came.’

In the case of multiple scrambling of objects, there is no Superiority, both orders of scrambled objects are possible, compare sentence (10) with (13):

- (13) Pavel<sub>3</sub> dopisy<sub>2</sub> dětem<sub>1</sub> [<sub>VP</sub> odpoledne [<sub>VP</sub> t<sub>3</sub> poslal t<sub>1</sub> t<sub>2</sub>]].  
 Pavel-NOM letters-ACC children-DAT in the afternoon sent  
 ‘Pavel sent the children the letters in the afternoon.’

It holds also for scrambling of the subject and object, consider (14).

- (14) a. V Praze Pavel<sub>1</sub> Marii<sub>2</sub> [<sub>VP</sub> včera [<sub>VP</sub> t<sub>1</sub> políbil t<sub>2</sub>]].  
 in Prague Pavel-NOM Marii-ACC yesterday kissed  
 ‘In Prague, Pavel kissed Marie yesterday.’

<sup>21</sup> Note that also the second step of object shift in Scandinavian, more specifically Icelandic, is not phonological movement. According to Bobaljik and Thráinsson (1998, 53), sentence (ia) where the shifted object crosses negation marking the left edge of VP may only get the interpretation that it holds for three specific books that I did not read them. In contrast, (ib) only means that the number of books that I did not read is three.

- (i) a. Ég las þrjár bækur<sub>i</sub> ekki t<sub>i</sub>  
 I read three books not  
 ‘I didn’t read three books.’  
 b. Ég las ekki þrjár bækur  
 I read not three books  
 ‘I didn’t read three books.’

- b. V Praze Marii<sub>2</sub> Pavel<sub>1</sub> [<sub>VP</sub> včera [<sub>VP</sub> t<sub>1</sub> políbil t<sub>2</sub>]].  
 in Prague Marii-ACC Pavel-NOM yesterday kissed  
 ‘In Prague, Pavel kissed Marie yesterday.’

It follows that the head T must have the ability to attract lexical items with a Specificity-feature in such a way that they result in any order.<sup>22</sup> Given locality principles, in the attract model of movement this is possible - without any other stipulation - only when there are more attracting features.

It appears that lexical items can scramble to some projection higher than TP. Evidence for additional specifier positions comes from data as in (15).

- (15) a. [<sub>ΔP</sub> Marii<sub>1</sub> na ruku<sub>3</sub> bude [<sub>TP</sub> Pavel<sub>2</sub> líbat  
 Marii-ACC onto hand-ACC will Pavel-NOM kiss  
 [<sub>VP</sub> zítra [<sub>VP</sub> t<sub>2</sub> t<sub>1</sub> t<sub>3</sub>]]].<sup>23</sup>  
 tomorrow  
 ‘Pavel will kiss Marie onto her hand tomorrow.’
- b. [<sub>ΔP</sub> Na ruku<sub>3</sub> Marii<sub>1</sub> bude [<sub>TP</sub> Pavel<sub>2</sub> líbat  
 onto hand-ACC Marii-ACC will Pavel-NOM kiss  
 [<sub>VP</sub> zítra [<sub>VP</sub> t<sub>2</sub> t<sub>1</sub> t<sub>3</sub>]]].  
 tomorrow  
 ‘Pavel will kiss Marie onto her hand tomorrow.’

### 4.3 Phase Featuring

To accommodate scrambling properties and get over the problems discussed above, I propose the general principle of Phase Featuring. This principle determines the presence of intermediate features in successive-cyclic movement. Before going on, let us briefly look at Chomsky’s (2001a) notion of Subarray. In this model, the computation works in such a way that first, a Lexical Array (LA) is chosen from the Lexicon. Then a Subarray (SA) is chosen from the LA and the computation works on this SA. After its exhausting, a new SA is chosen from the LA and the computation works on this new SA and so on until the LA is exhausted. The Phase Featuring principle that I would like to propose applies to Subarrays as stated in (16):

- (16) Phase Featuring  
 If a matching feature F does not have its probe feature F with the EPP-property in its current phase Subarray (workspace)<sup>24</sup>, add an F<sub>EPP</sub>-feature onto the phase head.<sup>25</sup>

<sup>22</sup> This holds for any number of elements.

<sup>23</sup> ΔP is the name for a discourse-related projection, see Lambova (2003), Reglero (2003), here placed between CP and TP.

<sup>24</sup> The notion of workspace here means that elements moved to the edge of a phase belong to the next higher Subarray for the sake of Phase Featuring.

It is necessary to define the “matching feature F”. I make use of Müller’s Feature Balance (2004, 9) and modify it as follows:

- (17) Feature Balance  
For every probe feature F, there must be exactly one matching feature F in the Lexical Array.<sup>26</sup>

More concretely, the computation of the relevant parts of (15a,b) looks like (18). After selecting a LA from the Lexicon, Feature Balance applies, i.e., it checks whether every probe Specificity-feature has an appropriate matching Specificity-feature. If the principle is satisfied (18a), the derivation continues and  $SA_{vP}$  is selected from the LA. Phase Featuring applies (18b) and adds the  $Specificity_{EPP}$ -features onto the phase head  $v$ , in accordance with the Inclusiveness Condition. These features agree with the matching Specificity-features on lexical items and attract them to the edge of  $vP$ . It follows that there is no violation of locality principles. Then,  $SA_{CP}$  is chosen and Phase Featuring applies. However, the matching Specificity-features now have their probe  $Specificity_{EPP}$ -features in their current phase workspace, therefore no features are added. When T is merged, the  $Specificity_{EPP}$ -feature on T probes and attracts the DP *Pavel* with the matching feature to TP. After the merger of  $\Delta$ ,  $Specificity_{EPP}$ -features on  $\Delta$  attract both elements (*Marii, na ruku*) to  $\Delta P$ . In the absence of evidence to the contrary, I assume that features on the same head can apply in any order. This fact and the 1-to-1 relation between probe and matching features give the desired non-superiority effect (15a,b).

- (18) a. LA: {Sp1<sub>EPP</sub>-F on  $\Delta$ , Sp2<sub>EPP</sub>-F on  $\Delta$ , Sp3<sub>EPP</sub>-F on T ... ..  
Sp1-F on *Marii*, Sp2-F on *na ruku*, Sp3-F on *Pavel*}<sup>27</sup>
- b.  $SA_{vP}$ : {Sp1<sub>EPP</sub>-F on  $v$ , Sp2<sub>EPP</sub>-F on  $v$ , Sp3<sub>EPP</sub>-F on  $v$  ... ..  
Sp1-F on *Marii*, Sp2-F on *na ruku*, Sp3-F on *Pavel*}

## 5 Conclusion

In this paper I argued that scrambling in Czech is narrow syntactic movement that moves elements to the domain of the restrictive clause and to the domain of background. In the proposed model this means movement to the CP phase because scrambling is determined by the interface requirement that backgrounded specific elements are to be interpreted and spelled out in the CP

<sup>25</sup> Note that although this principle is defined for overt movement, it can also be restated for covert movement.

<sup>26</sup> In Chomsky’s terms, the probe feature is an uninterpretable or unvalued feature. Müller’s Feature Balance (2004, 9) states that ‘For every feature specification [ $*F:\alpha$ ], there must be a matching feature specification [ $F:\alpha$ ].’

<sup>27</sup> Specificity-features are here abbreviated as Sp-F. The indices mark the identity between probe and goal features.

phase (the left part of a sentence) in scrambling languages like Czech. Since movement must be triggered, I employed a Specificity-feature with the EPP property. I further proposed the Phase Featuring principle regulating features in successive-cyclic movement. This principle combined with the Specificity-feature can successfully derive all properties of scrambling in the proposed model and solve the problems of Chomsky's (2001a) approach.

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Petr Biskup  
[biskup@rz.uni-leipzig.de](mailto:biskup@rz.uni-leipzig.de)  
<http://www.uni-leipzig.de/~biskup/>