

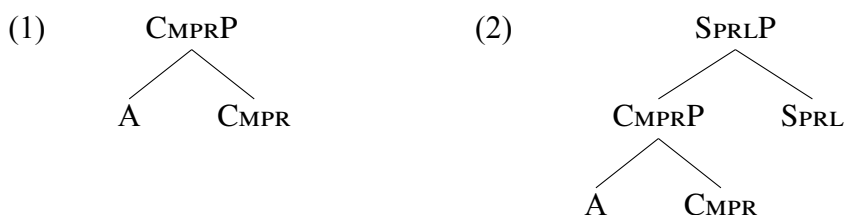
Splitting up the comparative: evidence from Czech

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Abstract We argue that the comparative head that enters into the morphological makeup of the comparative (Bobaljik 2012) is to be split up into two distinct heads (see Caha 2016). Evidence for this claim comes from Czech comparative morphology, root suppletion, and the interaction of Czech suppletion with negation. We further argue that the account for root suppletion that we provide captures the data better than a Distributed Morphology (DM) account.

1 Introduction

Bobaljik (2012) argues that the structure of comparative adjectives is as in (1), and that of superlatives as in (2).



These structures reflect the Containment Hypothesis, which states that ‘the representation of the superlative properly contains that of the comparative’ (Bobaljik 2012:4; see Dunbar and Wellwood 2016 for a recent alternative proposal to Bobaljik’s). An important piece of evidence for this containment structure is found in the fact that in many languages the superlative transparently contains the comparative morphologically, as the data in (3) show (Bobaljik 2012:31).

(3)	Pos	CM _{PR}	SP _{RL}	
Persian	kam	kam-tar	kam-tar-in	‘little’
Cimbrian	šüa	šüan-ar	šüan-ar-ste	‘pretty’
Czech	mlad-ý	mlad-ší	nej-mlad-ší	‘young’
Hungarian	nagy	nagy-obb	leg-nagy-obb	‘big’
Latvian	zil-ais	zil-âk-ais	vis-zil-âk-ais	‘blue’
Ubykh	nüs ^{wə}	ç’a-nüs ^{wə}	a-ç’a-nüs ^{wə}	‘pretty’

A second argument in support of the Containment Hypothesis is that it captures an universal property of comparatives and superlatives, which is that when comparatives have a suppletive form, the superlative will also be suppletive and vice versa, i.e. there are no ABA-patterns as in (4b), nor AAB-patterns as in (4c).

- (4)
- a. good-better-best
 - b. *good-better-goodest
 - c. *good-gooder-best

Bobaljik calls this the Comparative-Superlative Generalisation, and adduces extensive evidence in support of the fact that this generalisation is a language universal. Based on data from the morphology of Czech, root suppletion, and the interaction of suppletion with negation, this paper argues (in line with [Caha 2016](#)) that the CM_{PR} head is to be split up into two distinct heads.

2 Czech morphology

2.1 Data

The proposal we make for splitting CM_{PR} has independently been made by [Caha \(2016\)](#), who adduces some interesting evidence for it from the morphology of Czech, which we shall now review here.¹ The regular comparative in Czech is formed with the suffix *-(ěj)š-*, an exponent that contains an optional element *-ěj-*.²

(5)	Pos	CMPR	SPRL	
	červen-ý	červen-ějš-í	nej-červen-ějš-í	‘red’
	hloup-ý	hloup-ějš-í	nej-hloup-ějš-í	‘stupid’
	moudr-ý	moudř-ějš-í	nej-moudř-ějš-í	‘wise’

The *-ěj-* exponent remains absent in a number of cases, some of which are predictable. For example, with suppletive comparatives, *-ěj-* is systematically lacking.

(6)	Pos	CMPR	SPRL	
	dobr-ý	lep-š-í	nej-lep-š-í	‘good’
	špatn-ý	hor-š-í	nej-hor-š-í	‘bad’
	mal-ý	men-š-í	nej-men-š-í	‘little, small’
	velk-ý	vět-š-í	nej-vět-š-í	‘big’
	star-ý	star-š-í	nej-star-š-í	‘old’

However, *-ěj-* can also remain absent with regular, nonsuppletive, comparatives, as the case of *star-ý* ‘old’ shows. In certain cases, there is a templatic change to the root that correlates with the absence of *-ěj-* (Scheer 2001).

(7)	Pos	CMPR	
	blízk-ý	bliž-š-í	‘close’
	dlouh-ý	del-š-í	‘long’
	vys-ok-ý	vyš-š-í	‘tall’
	hloup-ý	hloup-ěj-š-í	‘stupid’
	div-ok-ý	div-oč-ěj-š-í	‘wild’

In the first three of these examples, we see a shortening of the root in the comparative as compared with that in the positive degree, which involves the vowel and/or the consonantic template (*blízk-bliž*, *dlouh-del*), or the *-ok-* suffix (*vysok-vyš*). The final two examples show the absence of these shortening phenomena in the presence of *-ěj-*. The presence of this shortening is arbitrary, in that it cannot be predicted from the phonological makeup of the root.

Conversely, the *-š-* exponent is systematically missing from comparative adverbs:

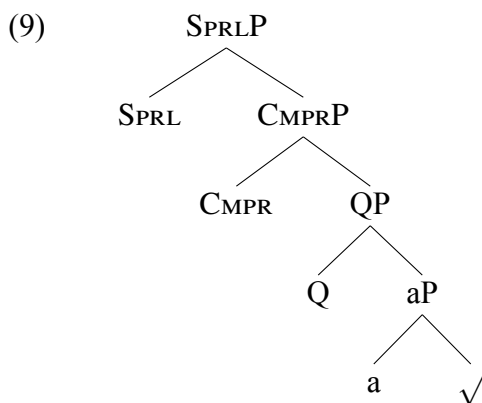
(8)	CMPR ADJ	CMPR ADV	
	červen-ěj-š-í	červen-ěj-i	‘redder, in a redder manner’
	hloup-ěj-š-í	hloup-ěj-i	‘more stupid(ly)’
	moudř-ej-š-í	moudř-ej-i	‘wiser, more wisely’

The adjectives in the first column contain the regular endings, but in the presence of the adverbial suffix *-i*, the *-š-*exponent disappears.³

These data provide rather transparent morphological evidence that the Czech comparative suffix needs to be decomposed into two separate ones, the *-ěj-*exponent on the one hand, and the *-š-*exponent on the other.

2.2 Proposal

Before we present an analysis of the Czech data, and in particular our proposal for two distinct comparative heads, we want to first discuss a sample Nanosyntactic derivation of a regular comparative and superlative, as it will present the necessary background against which the rest of the analysis will be set. For expository purposes, we assume a structure that is closely similar to that of Bobaljik given in (1) and (2) above, with a few minor modifications. We assume that gradable adjectives contain a Q head, which is responsible for gradability (cf. De Clercq and Vanden Wyngaerd 2017b). QP dominates a categorial *a*-head and a root. The complete structure is therefore as follows:



A gradable adjective like *smart* is the phrasal spellout of the QP-node in the structure above, whereas the comparative suffix spells out only the

CMPR feature; the superlative suffix spells out both the SPRL and CMPR features. The corresponding lexical entries are given in (10):

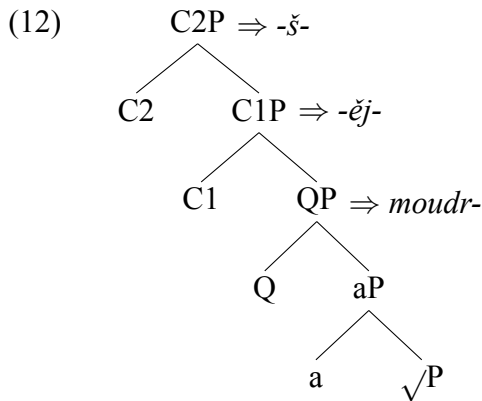
- (10) a. </smɑ:rt/, [_{QP} Q [_{aP} [_{√P} √]]] >
 b. </ər/, [_{CMPRP} CMPR] >
 c. </əst/, [_{SPRLP} SPRL [_{CmpRP} CMPR]] >

Nanosyntax (Starke 2009; Caha 2009) has cyclic phrasal spellout: after each Merge step in syntax, the lexicon is consulted for spellout, and if a suitable lexical entry is found, the node is spelled out, i.e. paired with a phonology. After the syntax has merged QP, it consults the lexicon and finds a match in *smart*, which leads to the spellout of QP as *smart*.⁴ The derivation may stop here, or may proceed to Merge CMPR, creating CMPRP; the lexicon is consulted again, but no lexical entry matches the structure of CMPRP in (9); in particular, the lexical entry for *-er* in (10b) does not contain QP and the material dominated by QP in (9). Movement must therefore take place so that CMPRP may be spelled out: the complement of CMPR (QP) moves to the left, adjoining to CMPRP. This is a case of spellout-driven movement. Now (the lower segment of) CMPRP matches (10b), and CMPRP spells out as *-er*, yielding *smart-er*. If the syntax proceeds to Merge SPRLP, the same procedure is repeated: QP moves leftward to adjoin to SPRLP, which now comes to dominate SPRL and CMPRP; as a result, *-est* spells out SPRLP, overwriting the earlier spellout *-er*, and deriving *smart-est*. In languages where the comparative and superlative affixes are stacked onto one another (such as those in (3)), the lexicon has slightly different entries: in particular, the superlative affix only spells out the SPRL feature and not the CMPR feature. As a result, there will be two distinct exponents stacked onto one another for the CMPR and the SPRL features in these languages. This analysis illustrates the nanosyntactic tenet that language variation can be reduced to the size of lexically stored trees (Starke 2011).

The Czech evidence discussed above suggests that there are two morphemes involved in the comparative. We take this to mean that the structure in (9) is not fine-grained enough, and we propose to decompose CMPR into two different heads, which we call C1 and C2.⁵ We first consider a regular Czech comparative (*moudr-ěj-š-(i)* ‘wiser’), where the two heads (C1 and C2) correspond to the two distinct exponents *-ěj-*

and *-š-*, respectively. Spellout is informally represented by the double arrows in (12).

- (11) a. $\langle /-š-/ , [_{C2P} C2] \rangle$
 b. $\langle /-ěj-/ , [_{C1P} C1] \rangle$
 c. $\langle /moudr-/ , [_{QP} Q [_{aP} a [_{\sqrt{P}} \sqrt{ }]]] \rangle$



The adjectival root *moudr-* spells out the QP-node, whereas *-ěj-* only spells out the C1 -feature, and *-š-* only spells out the C2-feature. This will require (successive) spellout-driven movements of the QP to the left in a roll-up fashion, as in the case of languages like the ones in (3) above, where the superlative affix stacks onto the comparative one, thus deriving *moudr-ěj-š-*. In English, C1 and C2 are spelled out differently. Following [Caha \(2016\)](#), we assume that the lexical root of adjectives that take a morphological comparative spells out C1P, whereas the regular comparative suffix spells out the C2 feature. This means that the lexical entries we gave in (10) need to be updated to those in (13):

- (13) a. $\langle /smɑ:rt/ , [_{C1P} C1 [_{QP} Q [_{aP} a \sqrt{ }]]] , SMART \rangle$
 b. $\langle /əɹ/ , [_{C2P} C2] \rangle$
 c. $\langle /əst , [_{SPRLP} SPRL [_{C2P} C2 [_{C1P} C1]]] \rangle$

Because of the Superset Principle, which allows lexical entries to spell out subtrees contained in them ([Caha 2009](#)), the lexical entry for *smart* in (13a) will be able to spell out both the positive degree (i.e. QP) and C1P, which enters into the derivation of the comparative. In the following

section, we shall show how this analysis provides an elegant account of root suppletion.

3 Root Suppletion

Root suppletion provides a second argument for the existence of two separate heads C1 and C2 in the comparative. In this section, we first present some necessary background on the analysis of suppletion in both Nanosyntax and DM. Next, we show that the Czech root suppletion data provide support for our analysis, and how the Nanosyntactic analysis does a better job at capturing the data.

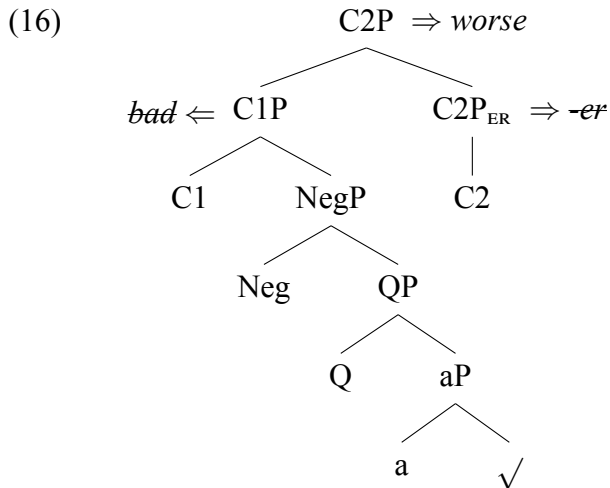
There are two different kinds of suppletion, both of which are found with comparatives. On the one hand, there are cases of root suppletion like (4), where the endings *-er* and *-st*, which are typical of regular comparatives and superlatives, are also found attached to the suppletive root. The other type of suppletion is portmanteau suppletion, where no (regular) affix is recognisable in the suppletive form, as in (14):

(14) bad-worse-worst

In Nanosyntax, portmanteau suppletion is accounted for by the mechanism of pointers inside lexical entries, which point to, or contain, other lexical entries (Starke 2009; 2014). For example, in the case of *bad-worse* suppletion, the lexical entry of *worse* (given in (15a)) contains (a pointer to) the lexical entries for *bad* (given in (15b)), on the one hand, and the comparative suffix *-er* (in (15c)), on the other. The pointer in the lexical item is a way of formalising the lexical relatedness of *worse* and *bad*.⁶

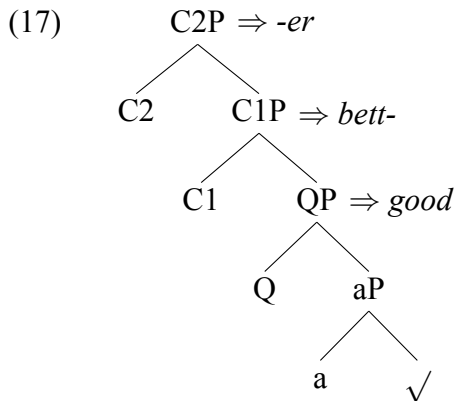
- (15) a. $\langle_{\text{WORSE}} /wɜːts/, [C2P \text{ BAD ER}] \rangle$
 b. $\langle_{\text{BAD}} /bæd/, [C1P [NegP \text{ Neg} [QP \text{ Q} [aP \text{ a } \surd]]]]], \text{BAD} \rangle$
 c. $\langle_{\text{ER}} /əɪ/, [C2P \text{ C2}] \rangle$

After C1P and C2P_{ER} have been merged and spelled out in the manner discussed above, the lexicon is consulted again for C2P, and the item (15a) is found. C2P is spelled out as *worse*, overwriting the earlier spell-out of *bad* and *-er*.



This analysis formalises the common sense observation that *worse* suppletes for, or overwrites, the regular form *bad+er*.

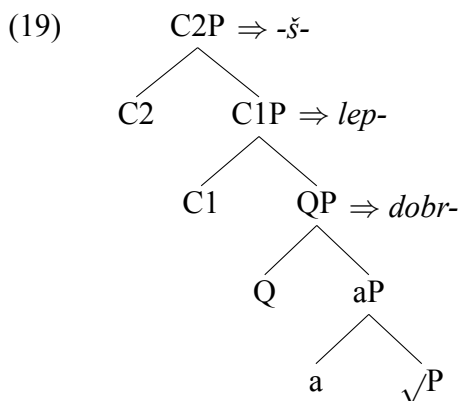
Root suppletion requires a slightly different analysis. On the one hand, the mechanism of the pointer is also needed, in order to capture the lexical relatedness of *good* and the suppletive root *bett-*. On the other hand, we do not want *bett-* to overwrite the comparative suffix *-er* in the manner of *worse*. Our proposal is that the suppletive root in comparatives spells out C1P, a node that is slightly smaller than C2P (thus making it different from a case like *worse*), but slightly larger than QP (see also [Caha 2016](#)). The syntactic tree and the corresponding lexical items are given below:



- (18) a. $\langle /b\text{et}/, [{}_{\text{C1P}} \text{C1 GOOD}] \rangle$
 b. $\langle {}_{\text{GOOD}} /g\text{od}/, [{}_{\text{QP}} \text{Q} [{}_{\text{aP}} \text{a} \checkmark]] , \text{GOOD} \rangle$
 c. $\langle /\text{er}/, [{}_{\text{C2P}} \text{C2}] \rangle$

What (18a) states is that *bett-* is the (suppletive) spellout of the C1-feature and the adjective *good*. This lexical entry expresses the lexical relatedness of *bett-* to *good*, as in the case of *bad-worse*. The main difference with *worse*, however, is that *bett-* does not spell out C2P. In order to derive the full comparative form, then, a different lexical item (i.e. (18c)) is needed to spell out the C2 feature. This explains the presence of the regular *-er* suffix in *bett-er*. The way the derivation works is that, when QP is merged, the lexicon is consulted, and *good* spells out QP. Then, at the merger of C1P, *good* is overwritten by the suppletive form *bett-*; due to the presence of the pointer this can only happen if at a prior stage QP was spelled out as *good*. At the merger of C2P, the comparative suffix *-er* is spelled out, modulo the raising of C1P to adjoin to the left of C2P.

This analysis directly explains why in Czech suppletive roots are systematically incompatible with the *-ěj-* exponent, as shown by the examples in (6) above. The tree and the lexical entries below illustrate this for the Czech pair *dobr-lep-* ‘good-bett-’:



- (20) a. $\langle {}_{\text{LEP}} /l\text{ep}/, [{}_{\text{C1P}} \text{C1 DOBR}] \rangle$
 b. $\langle {}_{\text{DOBR}} /d\text{obr}/, [{}_{\text{QP}} \text{Q} [{}_{\text{aP}} \text{a} [{}_{\sqrt{\text{P}}} \checkmark]]] \rangle$
 c. $\langle /-ěj-/ , [{}_{\text{C1P}} \text{C1}] \rangle$
 d. $\langle /-š-/ , [{}_{\text{C2P}} \text{C2}] \rangle$

Here too, *lep-* is the spellout of the C1-feature and the adjective *dobr-*. Since the suppletive root *lep-* already spells out C1, *-ěj-* cannot also spell out the same feature, and must remain absent. The suppletive root ‘eats up’ the *-ěj-*-suffix, as it were.

The analysis extends straightforwardly to the cases in (7) above, where the comparative exponent *-š-* attached directly to a shortened version of the stem, without an intervening *-ěj-* exponent. Here, too, we assume that the shortened stem spells out C1P, and that the shortened stem is related to its long version by means of a pointer.

There are also adjectives like *star-š-i* ‘older’, which have a comparative without *-ěj-*, but no suppletion. Which adjectives belong to this class is unpredictable. We account for them by assuming that their lexical entry has the same size as that of suppletive roots, i.e. C1P, but without a pointer, which explains why such adjectives are not suppletive:⁷

(21) $\langle /star/, [_{C1P} C1 [_{QP} Q [_{aP} a [_{\sqrt{P}} \sqrt{\quad}]]]] \rangle$

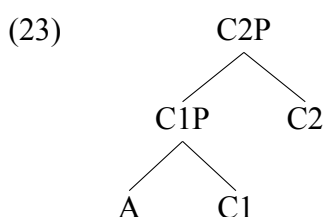
The fact that *star-* can spell out C1P explains why the *-ěj-*-exponent remains absent. The fact that it does not contain a pointer explains why there is no suppletion.

The DM account of root suppletion in terms of context-sensitive Rules of Exponence (Halle and Marantz 1993; Harley and Noyer 1999; Bobaljik 2012) faces a difficulty here, specifically in explaining the incompatibility of *-ěj-* with suppletive and shortened roots. In DM, insertion of vocabulary items takes place after syntax by means of Rules of Exponence, which take the form in (22), referring to the syntactic structure in (1) above.⁸

(22) a. $\sqrt{GOOD} \rightarrow good$
 b. $\sqrt{GOOD} \rightarrow be(tt)- / \text{ ____ }]_{CMPR}$

What these rules say is that *good* will be inserted under the terminal that dominates the root \sqrt{GOOD} in all contexts, except in the more specific context of CMPR, where the suppletive root *bett-* will be inserted. The exception follows from the context-sensitive rule (22b).

Assume for concreteness the following DM-structure for the comparative, which minimally differs from the one in (1) above in the fact that C_{MPRP} is split up into C1P and C2P:



The rule for the insertion of the suppletive *lep-* would need to be slightly modified from (22b) above to make reference to the adjacent C1-head rather than C_{MPRP} :

$$(24) \quad \sqrt{\text{GOOD}} \rightarrow \text{lep} / \text{ ___ }] \text{ C1 }]$$

The problem is with the rule for C1. In the general case, C1 will spell out as *-ěj-* in Czech; this is achieved by (25a). But the insertion of a suppletive root at A has to pre-empt the rule that inserts *-ěj-* at C1. One way of achieving that is to supplement the general rule (25a) with the context-sensitive rule in (25b), which says that C1 is spelled out as zero if the preceding head has been spelled out as *lep-*.

- (25) a. $C1 \rightarrow \text{ěj}$
 b. $C1 \rightarrow \emptyset / \text{lep ___}$

The more specific rule takes precedence over the more general one, and thus prevents the insertion of *-ěj-* with *lep-*. The problem with (25b) is that it is logically independent of suppletion. The Czech lexicon could contain a suppletive root *lep'*, which would be identical to *lep* in (24), but minimally differ from it in lacking the counterpart of (25b). The outcome would be *lepější*, i.e. a suppletive root with *-ěj-*. It is a pure coincidence under this approach that suppletive and shortened roots are systematically incompatible with *-ěj-*.⁹ In the Nanosyntactic approach that we have presented, there is a principled explanation for this systematic restriction: the feature C1 may either be spelled out by *-ěj-* or by the suppletive/shortened root, from which fact their complementary distribution follows.

In sum, the Nanosyntactic account of root suppletion provides a principled account for a systematic fact of Czech comparative morphology, namely the absence of *-ěj-* in comparatives with suppletive and shortened roots. In a DM account, this has to be stipulated on a per item basis, i.e. for each suppletive root individually, rather than as a general rule.

4 Root suppletion and negation

In this section, we discuss an interaction between negation and root suppletion, which provides further confirmation for our analysis. We start out by considering a minimal contrast in Czech suppletive comparatives that feature the negative prefix *ne-* ‘un, not’. One case is that of *dobr-ý* ‘good’, which has root suppletion in the comparative. The positive degree can be prefixed with the negative prefix *ne-* (*ne-dobr-ý* ‘bad’, lit. ‘un-good’). Interestingly, with this *ne-*prefixed form, root suppletion in the comparative is blocked:

(26)	POS	CMPR	
	dobr-ý	lep-š-í	‘good’
	ne-dobr-ý	*ne-lep-š-í	‘bad’
		ne-dobř-ej-š-í	

The minimal contrast is with the adjective *mal-ý* ‘small’, which also features root suppletion in the comparative. Like *dobr-ý* ‘good’, *mal-ý* ‘small’ can be prefixed with the negative prefix *ne-* to yield *ne-mal-ý* ‘not small’, but *ne-mal-ý* does have root suppletion in the comparative:

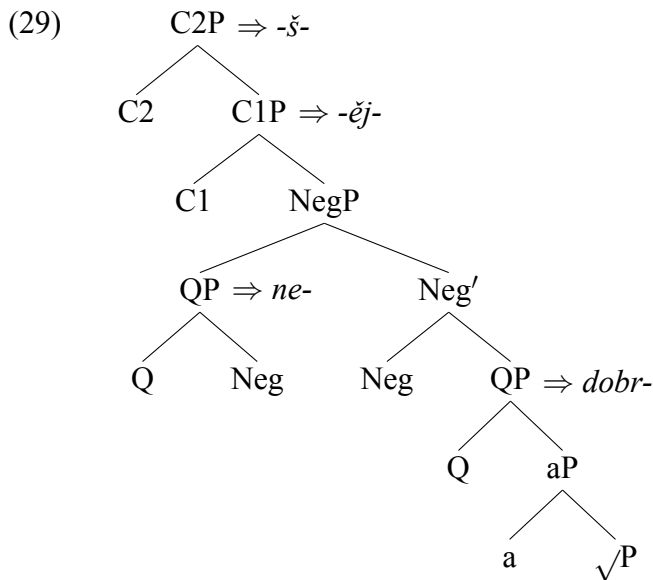
(27)	POS	CMPR	
	mal-ý	men-š-í	‘small’
	ne-mal-ý	ne-men-š-í	‘not small, big’
		*ne-mal-š-í	

We shall present an account for this minimal contrast in terms of the presence of an underlying Neg feature in *mal-* ‘small’, which is absent from *dobr-* ‘good’. The presence of this Neg feature forces the negative prefix to take a higher scope in *ne-men-š-í* ‘not smaller’ than in *ne-dobř-ej-š-í* ‘worse’.

The case of *ne-dobř-ejš-í* ‘worse, lit. ungooder’ has the same structure as that of the well-known bracketing paradox *unhappier*, except that it also has root suppletion. With respect to *unhappier*, it has been observed that semantically the comparative takes scope over the negation (i.e. the meaning of *unhappier* is [MORE [NOT happy]]). This means that we need a position for negation between QP and C1P. A greatly simplified structure representing this idea is given in (28):¹⁰

(28) [-er [un [happy]]]

This position for negation is given in the analysis of De Clercq and Vanden Wyngaerd (2017b), who argue that the negative prefix *un-* spells out a complex specifier that is merged in a NegP that immediately dominates QP. The structure of the comparative *ne-dobř-ejš-í* accordingly looks as in (29).



The spellout *ne-dobř-ejš-* ‘worse’ is derived by successive cyclically moving the NegP that dominates *ne-dobr-* to the left, adjoining it first to C1P, then to C2P, allowing the suffixes to spell out, and yielding *ne-dobř-ejš-*. Given the structure in (29), we see why we cannot get the suppletive root *lep-* here: there is no constituent in (29) that could spell out the lexical item *lep-*, given in (20a) above. In particular, The C1P

of (29) contains a Neg-feature which is absent from *lep-*; as a result, the syntactic tree is not a subtree of the lexical tree, in violation of the Superset Principle. A different way of putting this is to say that the Neg head intervenes between Q and C1, and in doing so blocks the spellout of the suppletive root *lep-* ‘bett-’.¹¹

Let us next look at the adjective *malý* ‘small’. A crucial element of our analysis is that negative adjectives spell out a NegP.

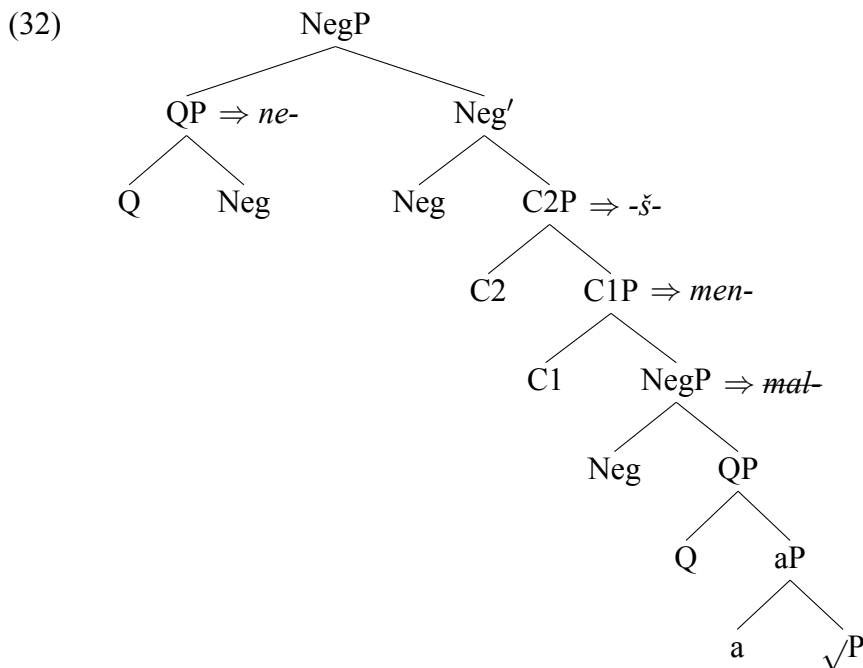
(30) < /mal/, [_{NegP} Neg [_{QP} Q [_{aP} a [_{√P} √]]]] >

A consequence of this is that the negative prefix *ne* can no longer take scope under the C2-head, since it can be shown independently that negative adjectives cannot take a negative prefix with low scope, i.e. there can be no stacking of low scope negative markers (e.g. **unbreathless*, **unimpossible*, **unsad*; see Horn 1989; De Clercq and Vanden Wyngaerd 2017b for discussion). Since *malý* ‘small’ already spells out a Neg feature, the negative marker *ne-* must take scope higher than the C2 head, with a concomitant change in meaning. The structural difference in the position and scope of the negative marker is represented in (31):

- (31) a. [[*ne-dobr-*]ejší] = [MORE [NOT-GOOD]] i.e. ‘worse’
 b. [*ne-*[*men-ší*]] = [NOT [MORE SMALL]] i.e. ‘not smaller’ (rather than ‘bigger’)

These two comparatives differ in whether they can describe a situation where A and B are equally good/small: (31a) cannot describe a situation in which A is as good as B, whereas (31b) can describe a situation in which A is as small as B. For example, if Mary had a bad (*ne-dobr-ý*) lunch, John can say he had an (even) worse (*ne-dobř-ej-š-í*) one; *ne-dobř-ej-š-í* ‘worse’ cannot be used in a situation where both lunches are equally bad. The comparative *ne-men-š-í* ‘not smaller’, on the other hand, is possible in a context where John donated a big sum to a charity, and Mary a not smaller (*ne-men-ší*) one. This comparative is compatible with a situation where John and Mary donated equal amounts of money. In the latter reading, the scalar focus marker *ještě* ‘even’ is not possible, whereas in the former one it is (and in fact preferred).

Having established that the negative marker *ne-* can take scope in different positions, we now proceed to explain the possibility of root suppletion in the case of *ne-mal-ý* ‘not small’. The relevant tree structure is given in (32). Negative adjectives like *mal-* ‘small’ spell out a larger structure than positive ones, namely NegP; due to this fact, *ne-* cannot be merged at this level anymore, and has to be merged above C2P. The fact that *mal-* spells out NegP also voids the intervention effect that this Neg head triggered in the case of *ne-dobr-*: after C1 is merged, creating C1P, the spellout *mal-* is overwritten by the suppletive root *men-*, in the usual fashion. Subsequently, C1P raises to the left of C2, allowing the suffix to spell out. The *ne-* marker is spelled out independently and attaches as a complex specifier higher in the structure, creating *ne-men-š-* ‘not smaller’.



5 Conclusion

In this paper we presented three types of evidence in support of splitting up of the C2 head of Bobaljik (2012) into two distinct heads. The first type of evidence came from Czech comparative morphology, which

gives evidence for two different pieces, each spelling out a distinct head. The second type of evidence involved root suppletion. The analysis was shown to provide an elegant account of root suppletion, which directly explains the systematic absence of *-ěj-* with suppletive and shortened roots in Czech. Finally, we discussed a minimal contrast in the domain of the interaction of suppletion and negation, showing how it provided further support for our analysis.

Acknowledgment

This paper owes its existence to a friendly comment by Pavel Caha after reading a handout of a paper about our work on negative adjectives. It was he who pointed us to the minimal contrast we discuss in section 4 of this paper. This made us think about a way to represent root suppletion, which led to conclusions remarkably similar to his own (Caha 2016). We also are grateful to both Pavel Caha and Radek Šimík for the informant data on Czech.

Notes

- ¹ As Caha notes, Bobaljik (2012) similarly assumes two comparative heads for the analysis of Bulgarian.
- ² When *-ěj-* appears in the suffix, it can cause palatalisation of the preceding consonant (e.g. alveolar *r*, *s*, *z*, and velar *k*, *h*); this is indicated by writing the suffix as *-ěj-* in isolation. The final *i/j* in the examples below is an agreement suffix, that spells out Case, number and gender features. We shall henceforth ignore this agreement marker; given its peripheral position in the linear order, we take it to be merged in a very high position in the adjectival tree.
- ³ The question is why this should be so. An obvious answer to this question is that the adverbial ending *-i* spells out both the C2 feature and an ADV feature. We shall not go into this issue any further here, as it would lead us too far afield.
- ⁴ Actually, any positive gradable adjective will be a candidate for spellout. We assume that in such a case, any one is insertable; cf. De Belder (2011).
- ⁵ We are at this point agnostic on the semantics of these heads, in particular, the question whether each syntactic head should be compositionally interpreted, or whether semantic interpretation composes spellouts.
- ⁶ We assume that negative adjectives spell out a Neg feature; see De Clercq and Vanden Wyngaerd (2017a) and section 4 below for discussion.

- ⁷ Adjectives like *star-ý* ‘old’ are like English adjectives taking a morphological comparative in that they spell out C1P, as argued above.
- ⁸ Rules of Exponence are subject to locality constraints, which allow an account of the absence of ABA-patterns noted in (4) above. A discussion of these would lead us too far in the present context (see Embick 2010; Bobaljik 2012; Moskal 2013).
- ⁹ An alternative solution is to have Fusion (Halle and Marantz 1993; Bobaljik 1997) or local dislocation under linear adjacency (Embick 2010), which would result in a single head dominating the features A and C1, which would then be spelled out by the suppletive root. While this allows a principled account of the absence of *-ěj-* in the presence of suppletive roots, it suffers from the derivational look-ahead problem discussed in Caha (to appear). For portmanteau suppletion as in *bad-worse*, DM needs to adopt either phrasal spellout as in Nanosyntax (Radkevich 2010), or Fusion.
- ¹⁰ DM and Nanosyntax assume that morphology, both inflectional and derivational, is part of syntax.
- ¹¹ Bobaljik (2012:200) mentions an analogous case of an intervening head blocking suppletion, viz. that of *good-li-er*, where the intervening *-ly* blocks the root suppletion normally induced by the comparative ending. Moskal (2015:371) also discusses a similar case in Serbo-Croatian, where root suppletion in the plural is blocked in the presence of a diminutive suffix. We hope to return to cases like this in future work.

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