Polish Comparative Adjectives and Adverbs[*]

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Abstract: The paper investigates the morphosyntax of Polish synthetic comparative adjectives and adverbs. It is argued that we can predict the distribution of different classes of adjectival roots and suffixes if we adopt the idea that both types of morphemes lexicalize syntactic constituents, the central tenet of Nanosyntax. The paper makes a case for two central claims. One is that the syn-sem properties of adjectives can be described with a fine-grained syntactic sequence proposed for Slovak in Vanden Wyngaerd et al. (2020). The other one is that the lexical properties of Polish gradable adverbs follow from the syntactic representation of the adverb as properly containing the syntactic representation of the adjective.

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1. Introduction

The article explores the morphosyntax of Polish synthetic comparative adjectives and adverbs. The investigated forms constitute a paradigm which contains patterns of root identity, suppletion, and allomorphy. Many of these patterns have been described in one way or another in the literature (e.g., Szymanek 1985, 2015; Post 1986), but they have not received a principled account that can explain the distribution of forms in the comparative paradigms. The goal of this paper is to fill this gap.[1]

In order to do so, it is argued that we can predict the distribution of different classes of roots and suffixes if we adopt the idea that both types of morphemes lexically realize syntactic constituents, the central tenet of the approach to the syntax–lexicon interface known as Nanosyntax. Under such an approach, both roots and affixes can differ in the kind and amount of features (heads) of a syntactic sequence that they lexicalize.

Specifically, the paper makes a case for two analytical views on adjectives and adverbs. One is that the syn-sem properties of positive and comparative adjectives can be described with a fine-grained syntactic sequence that has been proposed in the analysis of Slovak in Vanden Wyngaerd et al. (2020). The other is that the lexical properties of Polish gradable adverbs can be captured if the syntactic representation of the adverb properly contains the syntactic representation of the adjective (modulo the adjective's ɸ-agreement features).

The paper is organized as follows. Section 2 details the morphological classes of Polish adjectives and adverbs in the positive and the comparative degree. Sections 3 and 4 discuss two somewhat different approaches to structural containment between positive and comparative forms of adjectives: Bobaljik's (2012) highly influential work on comparative suppletion and a recent exploration of this idea in Vanden Wyngaerd et al. (2020). It is shown how we can capture the properties of the Polish facts with the latter approach. Section 5 discusses the properties and derives the morphological patterns of comparative adjectives. Section 6 shifts the focus to adverbs, showing how proper containment of the syntactic representation of the adjective – both in the positive and the comparative degree – inside the adverb derives the attested morphological patterns in the two degrees. Section 7 concludes the paper with a summary.

2. Morphological classes

With respect to lexical structure, Polish adjectives comprise the stem, which is either lexically simple or complex, which is followed by a portmanteau gender, number and case agreement suffix, as e.g. in *dobr-y* 'good' or *lek-k-i* 'light'. The adjectival agreement marker is irrelevant to the purposes of this paper and, in what follows, the adjective forms will be all marked with the masculine singular nominative suffix *-y/-i*.[2] Adverbs derived from adjectives retain the

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[1] As such, the paper is not concerned with denominal adjectives (like, e.g., *fizyczny* 'physical' or *ręczny* 'manual') or with adverbs that do not have a corresponding adjective (e.g., *potem* 'then', *wczoraj* 'yesterday', or *czasami* 'sometimes'). The morphological structure of these adjectives often differs from property denoting adjectives like *dobry* 'good' or *szeroki* 'wide', which are the focus of this work. For space reasons, this paper also does not extend the discussion to superlative forms, which I hope to return to in a separate work.

[2] The choice between *-i* and *-y* as the marker of masculine singular nominative agreement is determined by the

morphological shape of the adjectival stem but instead of an agreement suffix they have an invariant suffix -*e* or -*o*, as e.g. in *dobrz-e* 'good', *lek-k-o* 'lightly'.

2.1. Positive degree

With respect to morphological complexity of the stem, we can distinguish five classes of adjectives and adverbs in the positive degree. Four classes have complex stems, which include a root and an augment (-*n*, -*k*, -*ok*, or -*ek*), and one class has a simplex stem (a bare root), as illustrated with examples in Table 1 (the *k~c* alternation in front of the adverbial -*e* suffix, as well as consonantal mutations in later tables are marked with shading).

Table 1. Morphological classes of adjectives and adverbs in the positive degree

CLASS	POS A			POS ADV			
	ROOT	AUG	AGR	ROOT	AUG	ADV	
n	jas	n	y	jas	n	o	'bright'
k	lek	k	i	lek	k	o	'light'
	cięż	k	i	cięż	k	o	'heavy'
	wiel	k	i	wiel	c	e	'huge'
ok	wys	ok	i	wys	ok	o	'tall'
	głęb	ok	i	głęb	ok	o	'deep'
ek	dal	ek	i	dal	ek	o	'far'
	mał		y	mał		o	'small'
	duż		y	duż		o	'big'
	młod		y	młod		o	'young'

If we control for consonant mutations in examples like *wiel-k-i – wiel-c-e*, which is an instance of *k~c* alternation and is attested across lexical categories (e.g. *ręk-a – ręc-e* 'hand NOM.SG – NOM.PL'), we can observe that the morphological shape of an adjectival stem is preserved in the corresponding adverb.

Let us consider the distribution of the augments. The -*n* suffix is found in denominal adjectives, both relational and qualitative (a distinction proposed for Polish in Gawełko 1976 and Szymanek 1985; see Szymanek 2015: 79–100 for an overview).[3] Relational adjectives are the ones that retain the meaning denoted by the associated noun. Some examples of those formed with -*n* are given in Table 2 (on the next page). In turn, qualitative adjectives can be divided into possessional and similitudinal. The first are those whose meaning implies the possession of a quality denoted by the associated noun. The second are those that resemble the noun's quality. The relevant examples formed with -*n* are given in Tables 3 and 4, respectively.

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preceding consonant: -*y* comes after [ts] and hard consonants, while -*i* comes after [ɲ, ɕ, l, k, g] (e.g. *lekk-i* 'light').
[3] Apart from -*n*, denominal adjectives are also formed with other affixes, inlcuding -*sk* (e.g. *morz-e* 'sea-NOM.N, n.' – *mor-sk-i* 'marine, adj.'), -*ist* (*kamień* 'stone.M.NOM, n.' – *kamien-ist-y* 'stony, adj.'), or -*ow* (e.g. *samochód* 'car.M.NOM, n.' – *samochod-ow-y* 'car, adj.'). For a discussion of the suffixes that form denominal and deverbal adjectives see Post (1986) and Szymanek (1985, 1996, 2015).

Table 2. Examples of relational adjectives formed with -*n*

ROOT	AGR	ROOT	AUG	AGR	
N		**A**			
drzew	o (N)	drzew	n	y	'tree – arboreal'
płyn	ø (M)	płyn	n	y	'liquid'
las	ø (M)	leś	n	y	'forest'
rzeka	a (F)	rzecz	n	y	'river'
ręk	a (F)	ręcz	n	y	'hand – manual'

Table 3. Examples of possessional adjectives formed with -*n*

ROOT	AGR	ROOT	AUG	AGR	
N		**A**			
głód	ø (M)	głod	n	y	'hunger – hungry'
brud	ø (M)	brud	n	y	'dirt – dirty'
win	o (N)	win	n	y	'wine'
chęć	ø (M)	chęt	n	y	'will – willing'
but	a (F)	but	n	y	'arrogance – arrogant'

Table 4. Examples of similitudinal adjectives formed with -*n*

ROOT	AGR	ROOT	AUG	AGR	
N		**A**			
kamień	ø (M)	kamien	n	y	'stone – stony'
głos	ø (M)	głoś	n	y	'voice – loud'
luz	ø (M)	luź	n	y	'looseness – loose'
barw	a (F)	barw	n	y	'color – colorful'

The presence of -*n* is not restricted to denominal adjectives and the affix is found with canonical adjectival (property denoting) roots. Some examples of these are listed in Table 5.

Table 5. Examples of adjectives formed with property denoting roots and -*n*

ROOT	AUG	AGR	
jas	n	y	'bright'
mar	n	y	'miserable'
świet	n	y	'superb'
intym	n	y	'intimate'
przyjem	n	y	'pleasant'
wzajem	n	y	'reciprocal'
pazer	n	y	'greedy'
okrop	n	y	'horrible'
popular	n	y	'popular' (adapted loan)
smart	n	y	'smart' (adapted loan)

The formation of adjectival -*n* stems comes out as at least partly productive since it is attested in adapted loans: both in the older forms (e.g. *popular-n-y*) as well as those fairly newly introduced into the Polish vocabulary (e.g. *smart-n-y, horyzontal-n-y* 'horizontal', *digital-n-y* 'digital').

There is a contrast regarding root allomorphy in front of *-n* between denominal and canonical adjectival roots. As indicated with shading in Tables 2–4, some nominal roots undergo vocalic and/or consonantal mutations in front of *-n*. At least a subset of these alternations resist a straightforward synchronic phonological explanation. For instance, the *a~e* alternation found in *las – leś-n-y* (in Table 2) is non-productive in present day Polish and is attested only in about 20+ nouns (see Kowalik 1997: 132 and Holst 2012: 67).[4] In turn, the *gł*[u]*d – gł*[o]*d-n-y* example in Table 3 involves the so-called o-Raising, whereby [o] becomes [u] before a voiced word-final consonant.[5] Although the relationship between o-Raising and word-final devoicing is historically grounded, attempts to formalize o-Raising as a synchronically active phonological rule are challenged by many exceptions, such as the preservation of [o] in *t*[o]*ry – t*[o]*r* 'rail, NOM.PL – NOM.SG'.[6] Likewise, the root-final consonant

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[4] Other than the roots of denominal adjectives formed with *-n*, the *a~e* alternation is attested in locative singular forms of nouns, e.g. in (i).

(i)	forest, M	victim, F	summer, N
NOM.SG	l**a**s	ofi**a**r-a	l**a**t-o
LOC.SG	l**e**si-e	ofi**e**rz-e	l**e**ci-e

A vast majority of nominal roots, though, do not show the alternation in this context (modulo the palatalization in front of the locative singular suffix *-e*), as e.g. in (ii).

(ii)	belt, M	lamp, F	kid, N
NOM.SG	pas	lamp-a	dzieck-o
LOC.SG	pasi-e	lampi-e	dzieck-u

[5] From the diachronic perspective, o-Raising is seen as an instance of a more general and well established relation between vowel length and the voicing of a following consonant. Polish lost distinctive vowel length by the end of the XVth century, the process which was accompanied by raising and which resulted in [ɔ:] getting replaced with [u] (with the short [ɔ] remaining unchanged) (see Klemensiewicz et al. 1965; Stieber 1973; Carlton 1991).

[6] Such attempts can be found in Bethin (1978), Gussmann (1980) and Kenstowicz (1994). Buckley (2001) lists exceptions to o-Raising as an active phonological process, which involve both the misapplication of *o~u* alternation in native words ending in a voiced consonant (as for instance in (i)) as well as the unexpected *o~u* alternation in native words that end in a voiceless consonant (as in (ii)):

(i)	a. t[o]r	'rail'		(ii)	a. st[o]p-a	–	st[u]p	'foot NOM.SG – GEN.PL'
	b. kacz[o]r	'male duck'			b. rob[o]t-a	–	rob[u]t	'work NOM.SG – GEN.PL'
	c. grucz[o]ł	'gland'			c. powr[o]t-u	–	powr[u]t	'return GEN.SG – NOM.SG'

Buckley (2001) also cites Zagórska-Brooks (1975: 72), who observes that while o-Raising happens also before consonantal clusters in which the second consonant is voiced (as in (iii)), the raising does not happen when then first consonant in a cluster is a nasal, *z*, *j*, *l*, or *w*, all voiced consonants, as partially shown in (iv):

(iii) a. b[o]br-a – b[u]br 'beaver GEN.SG – NOM.SG'
    b. si[o]str-a – si[u]str 'sister NOM.SG – GEN.PL'
    c. gr[o]źb-a – gr[u]źb 'bulkhead GEN.SG – NOM.SG'

(iv) a. kl[o]mb-u – kl[o]mb 'flowerbed GEN.SG – NOM.SG'
    b. dr[o]zd-a – dr[o]zd 'thrush GEN.SG – NOM.SG'
    c. cz[o]łg-u – cz[o]łg 'tank GEN.SG – NOM.SG'

Buckley finds exceptions also to the latter statement, such as the verb forms in (v):

mutations between *s* and *ś* [ɕ] in *las – leś-n-y* or *głos – głoś-n-y* (in Table 4) or between *k* and *cz* [t͡ʂ] in *rzek-a – rzecz-n-y* or *ręk-a – ręcz-n-y* (in Table 2) are sensitive to the presence of the *-n* morpheme before a nominal root rather than the [n] consonant since *sn* and *kn* sequences are otherwise well attested, as for instance in *ciasn-y* 'tight' or *piękn-y* 'beautiful'. This suggests that (at least certain) root mutations in front of *-n* in denominal adjectives are instances of allomorphy rather than phonological alternation. In contrast to denominal adjectives, we do not observe similar root mutations in front of *-n* in canonical adjectives (like in Table 5), which strongly suggests that *-n* is accompanied by (mild) suppletive allomorphy with nominal but not with adjectival roots.

Regarding the other augments *-k, -ok,* and *-ek*, only the first one is widely attested with adjectival roots with *-ok* and *-ek* attested with just a few examples: those listed in Table 1 plus *szer-ok-i* 'wide'. Just like in the case of the *-n* augment, in the positive degree, *-k, -ok,* and *-ek* are preserved in the stem of the relevant derived adverb.

2.2. Comparative degree

Polish comparative adjectives and adverbs are either synthetic or analytic. The latter are formed with the degree adverb *bardziej* 'more' and an adjective or adverb in a positive degree, e.g., *bardziej jasny* 'more bright' or *bardziej jasno* 'more brightly'. The analytic forms are beyond the scope of this paper.

All synthetic comparative forms of adjectives are construed by the addition of either *-ejsz* or *-sz* to the comparative stem. In turn, all synthetic comparative forms of adverbs are formed by the addition of *-ej* to the comparative stem. Depending on the lexeme, the stem of the comparative can be different than the stem of the associated positive: it can have a suppletive root, drop an augment, or both. With this respect, we can identify ten different lexical patterns, illustrated with representative examples in Table 6 (with suppletive roots marked with shading).

Table 6. Morphological patterns of positive and comparative adjectives and adverbs

PTRN	CLASS	POS A			POS ADV			CMPR A				CMPR ADV			
		ROOT	AUG	AGR	ROOT	AUG	ADV	ROOT	AUG	CMPR	AGR	ROOT	AUG	CMPR	
I	*n*	jas	n	y	jas	n	o	jaś	ni	ejsz	y	jaś	ni	ej	'bright'
II		lek	k	i	lek	k	o	lż		ejsz	y	lż		ej	'light'
III	*k*	cięż	k	i	cięż	k	o	cięż		sz	y	cięż		ej	'heavy'
IV		wiel	k	i	wiel	c	e	więk		sz	y	więc		ej	'huge'
V	*ok*	wys	ok	i	wys	ok	o	wyż		sz	y	wyż		ej	'tall'
VI		głęb	ok	i	głęb	ok	o	głęb		sz	y	głębi		ej	'deep'
VII	*ek*	dal	ek	i	dal	ek	o	dal		sz	y	dal		ej	'far'
VIII		mał		y	mał		o	mni		ejsz	y	mni		ej	'small'
IX		duż		y	duż		o	więk		sz	y	więc		ej	'big'
X		młod		y	młod		o	młod		sz	y	młodzi		ej	'young'

(v)   a.   wioz-ł-em   –   wi[u]z-ł 'carried 1SG.M – 3SG.M'

    b.   sp[o]jrz-ę   –   sp[u]jrz 'look 1SG.PERF – IMP'

For these reasons, Buckley (2001) and Baranowski and Buckley (2003) take the instances of *o~u* alternation to be lexical rather than derived by phonology in present day Polish.

Let us spotlight some readily discernible observations about these patterns. First, just like in the case of the positive degree, the associated pairs of adjectives and adverbs in the comparative degree have the same stem, without an exception. That is, they share the *-n* stem (pattern I) or the bare root (all other patterns). This makes comparative forms of adjectives and adverbs differ only in the shape of the suffixes that are added to the comparative stem: *-(ej)sz* vs. *-ej* (modulo the adjectival agreement suffix). Let us here point out that *-n* is the only augment that is retained in the comparative (pattern I). More specifically, if an *-n* class adjective forms a synthetic comparative, then the synthetic comparative will have the *-n* augment.[7] Regarding the other augments, the reverse is true: *-k*, *-ok*, and *-ek* are not retained in the comparative, no matter if the comparative root is suppletive or not, or if it is followed by *-ejsz* or by *-sz* (patterns II–IV).

The next observation concerns suppletive roots, which are found both with *-ejsz* (patterns II, VIII) and with *-sz* (patterns IV, V, IX). Root suppletion is also attested with those adjectives that have either a simplex, a *-k*, or an *-ok* stem in the positive, though non-suppletive comparative roots are attested in these classes as well (patterns III, VI, X). The only adjective in the Polish vocabulary that is formed with the *-ek* augment, *dal-ek-i* 'far', does not have a suppletive root in the comparative.

Another fact concerns comparative roots in the *-n* class, namely:

 (1)   All *-n* stems have the same root in the positive and in the comparative.

This generalization, which complements pattern I, comes with the proviso that we can control for the softening of a root-final *s* and *z* into, respectively, *ś* [ɕ] and *ź* [ʑ] before the adjectival comparative *-ejsz* and the adverbial *-ej*, as observed e.g. in the examples in (2).

(2)

POS A			CMPR A				
ROOT	AUG	AGR	ROOT	AUG	CMPR	AGR	
jas	n [n]	y	jaś	ni [ɲ]	ejsz	y	'bright'
żyz	n [n]	y	żyź	ni [ɲ]	ejsz	y	'fertile'

The softening appears to be a result of the assimilation of the Polish dental/alveolar fricatives with a following augment *-ni* [ɲ], which itself gets palatalized in front of the comparative *-ejsz*.[8]

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[7] This statement holds also for those adjectives that can felicitously form both analytic and synthetic comparatives, e.g. *bardziej intym-n-y* / *intym-ni-ejsz-y* 'more intimate', *bardziej popular-n-y* / *popular-ni-ejsz-y* 'more popular', *bardziej pazer-n-y* / *pazer-ni-ejsz-y* 'more greedy'.

[8] This root assimilation before the palatalized *-n* augment is not observed with other consonants, as for instance in:

(i)

POS A			CMPR A				
ROOT	AUG	AGR	ROOT	AUG	CMPR	AGR	
mar	n	y	mar	ni [ɲ]	ejsz	y	'miserable'
podat	n	y	podat	ni [ɲ]	ejsz	y	'vulnerable'
ład	n	y	ład	ni [ɲ]	ejsz	y	'nice'
cen	n	y	cen	ni [ɲ]	ejsz	y	'precious'

In other words, the mutations in the root result from the interaction of two phonological processes: the suffix *-ejsz* triggers the palatalization of the augment *-n*, whereby [n] becomes [ɲ], and [ɲ] triggers the palatalization of preceding *s* and *z* of the root, whereby [s, z] become [ɕ, ʑ].

That the *-ejsz* suffix—or, more precisely, its initial *ej* cluster—is a source of palatalization for ɕ and ʑ in our examples in (2) is independently observed in a different morphological environment, namely before the adjectival genitive singular suffix *-ej*, as in:

(3) pie[s] – p[ɕ]-ej 'dog, N.M.NOM.SG – A.M.GEN.SG'
     ko[z]-a – ko[ʑ]-ej 'goat, N.F.NOM.SG – A.F.GEN.SG'

Both inflected adjectives (on the right side of the pairs) in (3) are denominal and, given that the nominal roots end in *s* and *z*, we can safely assume that they palatalize in front of *-ej*.[9]

What indicates that we are dealing in (2) with a phonological effect rather than mild suppletive allomorphy is that we observe the same kind of assimilation also in other morphological contexts. For instance, we find *-ni* [ɲ] to be palatalized by a masculine nominative plural agreement marker *-i* as, for example, in:

(4)

POS A		
ROOT	AUG	AGR
jaś	n [ɲ]	i	'bright, M.NOM.PL'
żyź	n [ɲ]	i	'fertile, M.NOM.PL'

Without the palatalizing suffix after the *-n*, neither the *-n* itself nor the root get palatalized in this environment, which we can see for example in:

(5)

POS A		
ROOT	AUG	AGR
jas	n [n]	a / ą / ym	'bright, F.NOM.SG / F.INST.SG / M.INST.SG'
żyz	n [n]	a / ą / ym	'fertile, F.NOM.SG / F.INST.SG / M.INST.SG'

We can, thus, conclude that the difference between *-n* and *-ni* seen in pattern I is phonological, not lexical.

The consonants other than *s* and *z* remain unchanged in this environment despite the fact that the dental *s, z, t, d, n* all undergo coronal palatalization when they immediately precede the front vowels *i, e* (Rubach 1984), as in:

(ii) a. płat   – pła[t͡ɕ]-e   'sheet, NOM.SG – LOC.SG'
      b. wstyd   – wsty[d͡ʑ]-e 'shame, NOM.SG – LOC.SG'
      c. pompon – pompo[ɲ]-e 'pom pom, NOM.SG – LOC.SG'

[9] Looking beyond our immediate concern of the source of palatalization for ɕ and ʑ in front of the *-ni-ejsz* sequence, we can observe a more general palatalizing effect before the *ej* cluster in *głębi-ej* 'deeper' or *mni-ejsz-y* 'smaller', both seen in Table 6, where the root-final consonants *b* and *n* become platalized into *bʲ* and *ɲ*.

2.3. Superlative degree

While the focus of the present paper is on the comparative forms, which show a number of peculiarities vis-à-vis the positive forms, let us point out that, descriptively speaking, the Polish lexical superlatives are formed straightforwardly. Namely, all lexical adjectival and adverbial superlatives are formed by the addition of the prefix *naj-* to the comparative form, as shown in Table 7.

Table 7. Superlative forms of adjectives and adverbs

SPRL A					SPRL ADV				
SPRL	ROOT	AUG	CMPR	AGR	SPRL	ROOT	AUG	CMPR	
naj	jaś	ni	ejsz	y	**naj**	jaś	ni	ej	'bright'
naj	lż		ejsz	y	**naj**	lż		ej	'light'
naj	wyż		sz	y	**naj**	wyż		ej	'tall'
naj	dal		sz	y	**naj**	dal		ej	'far'
naj	mni		ejsz	y	**naj**	mni		ej	'small'

In other words, the comparative is lexically contained in the superlative, which means that Polish adjectives and adverbs adhere to Bobaljik's (2012) Containment Hypothesis.

(6)   The Containment Hypothesis (Bobaljik 2012: 138)
       The representation of the superlative properly contains that of the comparative.

Given that the procedure of the formation of Polish superlatives with the prefix *naj-* applies to all comparatives including the suppletive ones (i.e. those seen in patterns II, IV, V, VIII, and IX in Table 6), Polish adjectives and adverbs adhere also to Bobaljik's (2012) second cross-linguistically established generalization:

(7)   The Comparative-Superlative Generalization (Bobaljik 2012: 169)
       If the comparative degree of an adjective is suppletive, then the superlative is also suppletive (i.e., with respect to the positive).

3. Structural containment and lexicalization

3.1. Proper containment in Bobaljik (2012)

The Containment Hypothesis and the Comparative-Superlative Generalization follow from a decompositional analysis of gradable adjectives in (8) where the superlative degree properly contains the comparative and the positive degree.

(8)   [[[POSITIVE] COMPARATIVE] SUPERLATIVE]

Such an arrangement has been argued to capture the distribution of root syncretism in adjectival degrees in agreement with the so-called *ABA generalization, whereby syncretism targets only neighbouring cells of a paradigm.

The rationale behind *ABA is that syncretism anchors structural containment since it only

targets contiguous layers of a syntactic structure.[10] (9) shows cross-linguistic examples of root syncretism when degrees are ordered according to (8).

(9)

	pattern	POS	CMPR	SPRL	
English	AAA	**smart**	**smart**-er	**smart**-est	
Persian	AAA	**kam**	**kam**-tar	**kam**-tar-in	'little'
Polish	AAA	**dal**-ek-i	**dal**-sz-y	naj-**dal**-sz-y	'far'
Danish	ABB	god	**bed**-re	**bed**-st	'bad'
Basque	ABB	on	**hobe**	**hobe**-(r)en	'good'
Polish	ABB	lek-k-i	**lż**-ejsz-y	naj-**lż**-ejsz-y	'light'
Welsh	ABC	da	gwell	gor-au	'good'
Latin	ABC	bon-us	mel-ior	opt-imus	'good'
English	ABC	bad	worse	wor-st	
unattested	ABA				

The above comes with three caveats, the first two noted by Bobaljik. The first one involves a potential example of adjectival root ABA pattern in Basque, which has an alternative superlative form in the 'good' paradigm, along the one given in (9), namely *on-en* 'best'. Bobaljik (2012: 113–15) offers a potential explanation of *on-en* as a derivative of the nominal equivalent of 'a good one' which, if correct, perhaps does not involve a genuine example of an adjectival root.

The second one is the lack of attested root AAB patterns in adjectival degree paradigms. Their lack is not controlled by the *ABA generalization.

The third one involves the observation based on the data coming from a survey of over 300 languages reported in Bobaljik (2012), namely that in adjectival degree paradigms root syncretism is only attested with at least one accompanying affix. That is, a syncretic root alone is not found to be enough to cover more than one category/cell in (9). This contrasts, for instance, with verb root syncretisms between the English present tense verb forms, participles and preterites, where syncretic triplets like *put – put – put* or pairs like *come – come – came* are attested along cases of root syncretism plus an affix like in *take – tak-en – took.* The latter ones are also instances of root AAB syncretism.[11]

These three concerns, however, are going to be largely orthogonal to the analysis of the Polish forms, for which we will adopt an alternative to the decomposition in (8), the one where the positive is non-trivially contained in the comparative. An important benefit for adopting the

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[10] Outside the adjectival degree paradigms, the *ABA generalization has been argued to hold, among others, in the domains of participles (Starke 2006), case (Caha 2009), Polish verbal prefixes (Wiland 2012), Germanic wh-pronouns (Vangsnes 2013), demonstratives (Lander, Haegeman 2016), personal pronouns (Vanden Wyngaerd 2018), ontological categories (Baunaz, Lander 2018a), pronouns and anaphors (Middleton 2020), kinship terms (Truong 2020), negation markers (De Clercq 2020), indefinite pronouns (Dekier 2021, 2022), or complementizers (Baunaz, Lander 2018b).

[11] Suffice it to say, the statement that paradigms like *come – come – came, take – tak-en – took, run – run – ran,* etc. are genuine examples of root AAB relies on the assumed containment relation between the verbal categories. The relevant sequence 'present < participle < preterite' has been proposed to hold for Germanic verbs in Wiese (2004, 2008) and picked up in Bobaljik (2012: 159–161) and Andersson (2018).

alternative to Bobaljik's decomposition is the way it will allow us to elegantly derive the fact that the -*n* augment of pattern i adjectives is preserved in the comparatives while the -(V)*k* augment of adjectives in patterns II–VII is lost in the comparatives.
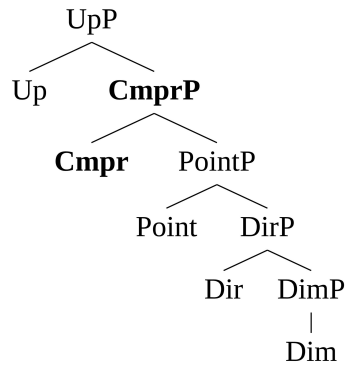
3.2. Containment in Vanden Wyngaerd et al. (2020)

Such a decomposition of a gradable adjective is proposed in Vanden Wyngaerd et al. (2020), where a positive structure involves a gap with respect to the comparative structure:
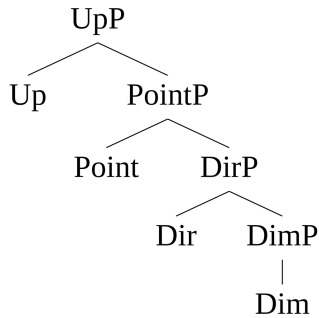
(10) a.   The positive   b.   The comparative

In Vanden Wyngaerd et al.'s description, the bottom Dim(ension) is a property ingredient, which corresponds to size, color, velocity, or other property that is expressed by an adjective. A scalar property is equipped with a Dir(ection), which introduces an ordering for the scale denoted by Dim(ension).[12] That ordering is responsible for antonymic pairs of adjectives like *fast – slow, big – small*, etc. in that it is either positive or negative.[13] The next feature Point introduces a point on what is by now a directed scale. This functor, in Vanden Wyngaerd et al.'s terms (p. 13), is itself unspecified in the positive degree but it divides the scale into the part that exceeds the relevant Point and the part that does not, in which sense it serves as a definiendum (see Cresswell 1976; Klein 1980; Von Stechov 1984 for a similar idea about gradable adjectives).

The relevant structural difference between the positive and the comparative degree comes with the part that exceeds the Point, and which denotes a degree of the property of the argument

---

[12] Representing scalar adjectives as comprising Dimension and Direction opens up the possibility to represent non-gradable adjectives like *dead* or *complete* as a subset structure of the gradable adjectives, whereby the non-gradable adjectives have Dimension, the basic property ingredient, but lack Direction. See Vanden Wyngaerd et al. (2020: 13, fn 11) for a related discussion.

[13] The statement that Direction can be either positive or negative is an intentional simplification. In Vanden Wyngaerd et al.'s formulation, what distinguishes between antonymic pairs of adjectives is a reversal operator called Neg (following De Clercq, Vanden Wyngaerd 2019a), which is optionally projected on top of Direction, as in:

(i)   [Up [Point [(Neg) [Dir [Dim]]]]]

The reversal operator introduces a negative value for the Direction of the scale provided by Dimension for adjectives like *slow, small, short, light*, etc. Since these adjectives in Polish can be represented assuming a negative value of Direction and no ingredient of the analysis in the present paper depends on the presence of a separate NegP on top of DirP, the NegP is left out of the representation in (8).

predicated by the adjective. In the positive degree, in (10a), the relevant Point is exceeded with the feature Up, which results in the positive reading of the adjective. As such, this feature syntactically corresponds to the *Up* functor present in the semantic composition of degree expressions in Neeleman et al. (2004). In turn, in the comparative degree, in (10b), it is the comparative feature Cmpr that projects on top of PointP to the effect that the Point ingredient becomes specified by the standard of comparison (provided by the *than*-phrase). To put it differently, the Cmpr-layer provides the position of the Point on a directed scale. The next feature Up is retained and provides the degree of the property that exceeds the comparative point.

### 3.3. Lexicalization of the sequences as roots and affixes

What determines the amount of morphemes that lexically realize the sequences in (10a,b) is phrasal spellout, that is a scenario where a lexical item (a root or an affix) realizes a phrasal constituent.[14] Such a set up means that we are going to experience size trade-offs between roots and affixes (the term borrowed from Vanden Wyngaerd 2019) whereby syntactically bigger roots will come with syntactically smaller affixes and vice versa.

In order to illustrate this idea, let us consider the following abstract syntactic sequence:

(11)

```
        CP
       /  \
      C    BP
           / \
          B   AP
              |
              A
```
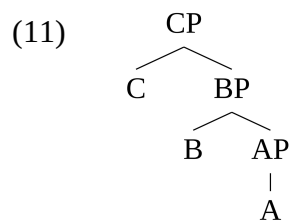
The are two ways to lexicalize this tree with a root and a suffix such that each feature A, B, C is realized only once in either morpheme. One way is to lexicalize AP as the root (let us call it *root1*) and the rest of the sequence as the affix (let us call it *affix1*). With spellout restricted to phrasal constituents, this can be achieved by lexicalizing AP as *root1* (as illustrated in (12a)) and subsequently moving it on top of the structure that remains yet to be spelled out, i.e. CP, the step shown in (12b). (Such a movement will result in the formation of a non-projecting node, i.e. the specifier).

---

[14] Phrasal spell-out, which can be traced back to McCawley's (1968) pre-lexical decomposition of the verb *kill* as comprising abstract structure [CAUSE [BECOME [DEAD]]], has been applied to the analyses of a number of distinct grammatical categories including, but not limited to, pronouns (Weerman, Evers-Vermeul 2002; Neeleman, Szendrői 2007; Vanden Wyngaerd 2018; Wiland 2018), case and declension (Caha 2009, 2021), Bantu class markers (Taraldsen 2010; Taraldsen et al. 2018), verbs and participles (Jabłońska 2007; Taraldsen Medovà, Wiland 2018, 2019; Wiland 2019; Caha et al. 2023), demonstratives (Lander, Haegeman 2016), or complementizers (Baunaz, Lander 2018a; Wiland 2019).

(12) a.
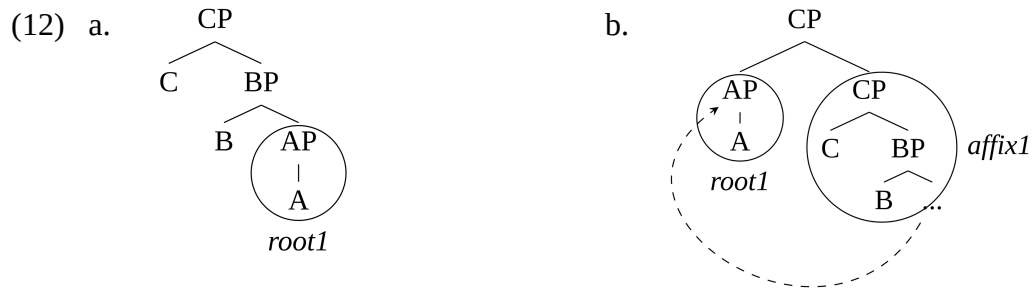
Following the AP movement seen in (12b), the remnant constituent [C [B]] will get lexicalized as *affix1*. Note that the specifier-creating movement of AP not only facilitates the insertion of the lexical material into a remnant constituent (rather than a non-constituent span of B and C seen at the stage in (12a)) but it also correctly predicts that the remnant will get linearized as the suffix when we assume (a version of) Kayne's (1994) Linear Correspondence Axiom.[15]

The other way to lexicalize the sequence in (11) is to have a bigger root and a smaller affix, that is, to lexicalize the [B [A]] constituent as *root2* (shown in (13a)) and subsequently move it on top of the CP and lexicalize the remnant as *affix2* (as in (13b)).

(13) a.
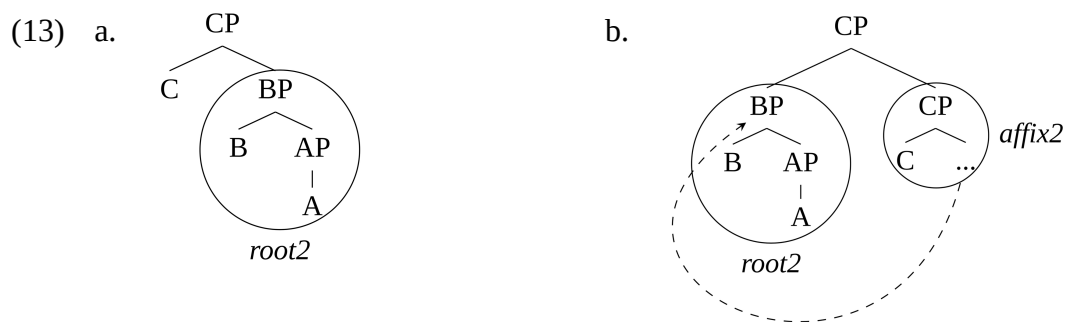
The trees and the lexicalization scenarios can be represented in the form of a lexicalization table:

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[15] Kayne's (1994) formulation of the LCA refers to both terminal and non-terminal nodes but it allows only terminals to linearize:

(i)   If a non-terminal X asymmetrically c-commands a non-terminal Y, then all terminal nodes dominated by X will precede all terminal nodes dominated by Y.

Phrasal spell-out requires a reformulation of the linearization axiom which will rely only on non-terminal nodes. Such a simplified formulation of the LCA for phrasal spell-out is offered in Pantcheva (2011: 135):

(ii)   If a non-terminal X asymmetrically c-commands a non-terminal Y, then whatever spells out X precedes whatever spells out Y.

For the tree in (10b), this means that the spell-out of AP as *root1* and the spell-out of the (lower segment of) CP as *affix1* will map onto the following linear statement: *root1* precedes *affix1*.

(14)

A	B	C	
root1	affix1		(12b)
root2		affix2	(13b)

Such an approach will enable us to capture different morphological classes of the Polish adjective, both in the positive and in the comparative degree, as involving different lexical items that realize constituents of different sizes of the respective sequences in (10a) and (10b).

4. Positive adjectives

4.1. (*n*) < diminutive < *k*

As seen in Table 1, complex adjectives in the positive degree can be formed with different augments, -*n* and -(V)*k*. Given the approach to lexicalization outlined above, we expect the different roots and their augments to differ with respect to the kind and amount of features of the sequence in (10a) that they realize.

What can help reveal the relative sizes of the roots and their augments in the positive degree is the inclusion of a diminutive suffix -*ut,* which can be optionally added to a range — but not all — of positive adjectives. Some relevant examples with the added diminutive -*ut* are given in Table 8 (with palatalizations attested in front of -*ut* marked with shading).

Table 8. Examples of diminutive forms of adjectives in the positive degree

CLASS	ROOT	AUG	DMT	AUG	AGR	
	jaś	ni	ut	k	i	'bright'
n	drob	ni	ut	k	i	'fine'
	pulch	ni	ut	k	i	'plumpy'
	leci		ut	k	i	'light'
k	nizi		ut	k	i	'shorty'
	gładzi		ut	k	i	'smoothy'
ok	głębi		ut	k	i	'deep'
	mal		ut	k	i	'tiny'
	młodzi		ut	k	i	'young'
	cich		ut	k	i	'silent'

We see that with all stem classes the addition of the diminutive -*ut* requires the presence of the -*k* augment to its immediate right. Moreover, in the -*n* class, the -*n* augment appears before the diminutive marker -*ut.* This suggests a hierarchy ROOT < AUG1 < DMT < AUG2, which maps rather straightforwardly onto the sequence of (10a) when we assume one additional optional diminutive-forming head Dmt that is projected above Dir, as in:

(15) The diminutive sequence

```
              UpP
             /   \
           Up     PointP
                  /    \
               Point    DmtP
                        /   \
                     Dmt     DirP
                             /   \
                           Dir    DimP
                                   |
                                  Dim
```
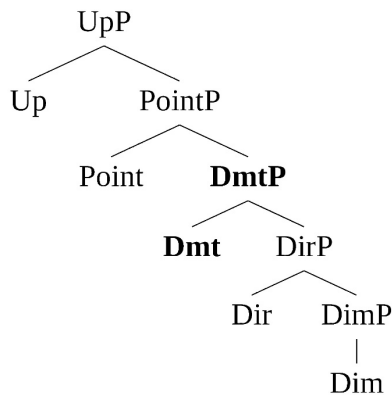
With such a sequence, the diminutive *-ut* will surface after *-n* but before *-k* if it lexicalizes Dmt, *-n* lexicalizes the structure from Dir upwards, and *-k* lexicalizes the structure from Point upwards. Such a scenario is illustrated with the lexicalization table in (16)(modulo the palatalizations), which juxtaposes the 'non-diminutive' positive degree (with the Dmt cell blackened) and the diminutive.[16]

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[16] An alternative possibility that can capture the (*n*) < *ut* < *k* order is given in (i), where the diminutive is optionally merged on top of Point and the augments *-n* and *-k* start in a notch higher position than what is indicated in (16), i.e., *-n* lexicalizes the structure from Point upwards and *-k* lexicalizes Up, as in (i)(modulo the platalizations):

(i)

Dim	Dir	Point	**Dmt**	Up
jas		n	■	
jas		n	ut	k
lek			■	k
lek			ut	k
młod			■	
młod			ut	k

 While both options achieve the relevant result, what suggests the preference for the option illustrated in (16) is the fact that, unlike in other classes, we do not observe any kind of lexical change between the roots and the *-n* augment in the positive or the comparative, except for the palatalization (cf. Table 6). Such a lack of lexical variation between the root and *-n* naturally follows from (16), where the root lexicalizes only Dim, while Dir gets lexicalized by *-n*, which leaves no more features in between to be subject to a different lexicalization possibility.

   Also, as pointed out by an anonymous reviewer, the table in (16) is similar to the one argued for in a recent talk on Czech adjectives by Vanden Wyngaerd et al. (2023). Such a converging evidence from Czech seems to provide additional support for the analysis of Polish diminutives in (16).

(16)

Dim	Dir	**Dmt**	Point	Up	
jas	n				'bright'
jas	n	ut	k		'bright' DMT
lek			k		'light'
leci		ut	k		'light' DMT
młod					'young'
młod		ut	k		'young' DMT

The result in (16) holds with the following lexical entries for roots and the suffixes:

(17) a. *jas* 'bright'   ⇔   [Dim]
    b. *lek* 'light'   ⇔   [Dir [Dim]]
    c. *młod* 'young' ⇔ [Up [Point [Dir [Dim]]]]
    d. *n*   ⇔ [Up [Point [Dir]]]
    e. *k*   ⇔ [Up [Point]]
    f. *ut*   ⇔   [Dmt]

The superset structures of these lexical items are found in the positive forms of adjectives without the diminutive (i.e., in *jas-n-y, lek-k-i, młod-y*). However, with the diminutive-forming feature Dmt merged right on top of Dir as in (16), the use of the superset structures for the root *młod* and the *-n* augment becomes blocked.[17] This is so since both of them include Dir and Point as adjacent features in their entries (as in (17c) and (17d), respectively). This is not the case with the root *lek* and the *-k* augment, whose lexical entries (in (17b) and (17e), respectively) do not include the boundary between Dir and Point.

    Instead, the root *młod* and the augment *-n* found in the diminutives correspond to their subset structures in (17c) and (17d). The use of an exponent of a lexical item (LI) to realize a syntactic constituent that corresponds to the LI's subset structure follows from the major tenet of Nanosyntax, the Superset Principle, which governs a post-syntactic lexical insertion.[18]

(18) The Superset Principle (Starke 2009)
    An exponent of a lexical item (LI) is inserted into a syntactic node if the LI's entry has a subconstituent that matches that syntactic node.

On the strength of (18), the exponent of the LI *młod*, whose entry is specified as in (17c), will

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[17] The term 'superset structure' is understood here and later in the paper as the syntactic structure that corresponds exactly to the lexically stored tree (e.g., *młod* in *młod-y* in the table in (16) is a superset structure of the lexically stored tree in (17c)). This term differs from a 'subset structure', which is understood later in the paper as a syntactic tree that is a proper subtree of the lexically stored tree (e.g., *młod* in *młodzi-ut-k-i* as represented in the table in (16) corresponds only to a proper subtree of the lexically stored tree in (17c): [Dir [Dim]]).

[18] Both phrasal spell-out and the Superset Principle constitute essential ingredients of the lexicalization mechanism in Nanosyntax. For overviews of the framework see Baunaz and Lander (2018c: 16–29), Wiland (2019: 8–23), De Clercq (2020: 15–25), or Caha (to appear).

be in principle able to lexicalize the following syntactic constituents:

(19) a.
```
    DimP
     |
    Dim
```
b.
```
       DirP
      /    \
    Dir    DimP
            |
           Dim
```
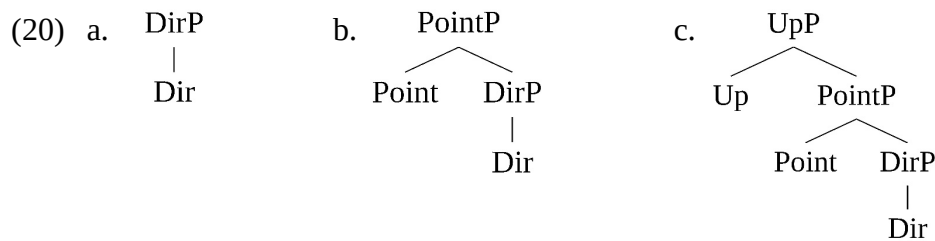c.
```
        PointP
       /      \
    Point     DirP
             /    \
           Dir    DimP
                   |
                  Dim
```
d.
```
        UpP
       /   \
     Up    PointP
          /      \
       Point     DirP
                /    \
              Dir    DimP
                      |
                     Dim
```
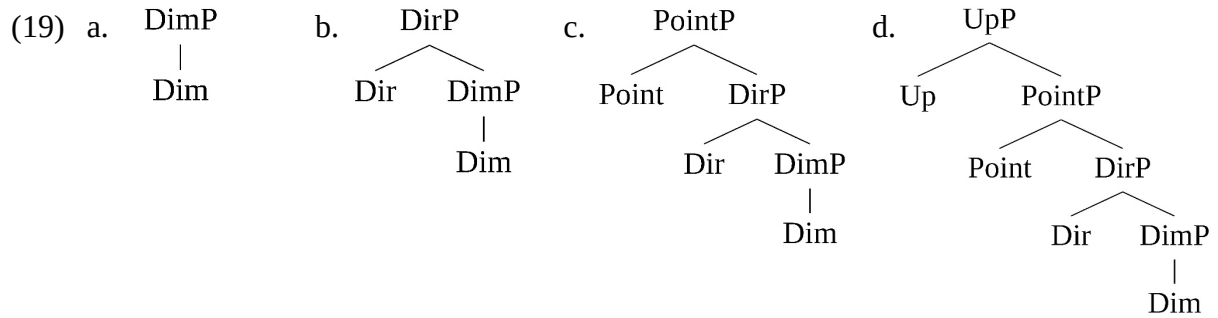
Thus, in the non-diminutive positive form *młod-y*, the exponent of the root *młod* lexicalizes the superset structure in (19d), while in the diminutive form *młodzi-ut-k-i*, the same exponent lexicalizes the structure in (19b).

Exactly the same logic applies in the case of the *-n* augment, as seen in (16) in the non-diminutive form *jas-n-y* and the diminutive forms *jaś-ni-ut-k-i*. Given its lexical entry in (17d), *-n* can in principle lexicalize the following syntactic constituents:

(20) a.
```
    DirP
     |
    Dir
```
b.
```
       PointP
      /     \
   Point    DirP
             |
            Dir
```
c.
```
        UpP
       /   \
     Up    PointP
          /      \
       Point     DirP
                  |
                 Dir
```

In *jas-n-y*, the exponent *n* lexicalizes the syntactic structure in (20c), which perfectly matches the *-n*'s entry in (17d). In *jaś-ni-ut-k-i*, it lexicalizes the tree in (20a) as the subset structure of (17d).

As indicated in Table 8 with shading, the addition of the diminutive *-ut* can result in the palatalization of the preceding consonant, either of the *-n* augment, which gets palatalized into *-ni* [ɲ], or of the root-final consonant. What suggests that we are dealing with a phonological mutation rather than allomorphy is the fact that while *-ut* palatalizes a range of preceding consonants, as shown in, e.g., (21a–g), it systematically leaves roots with the final [x] and [r] unaffected, as shown in, e.g., (21h–k).

(21)

	ROOT	AUG	AGR	ROOT	DMT	AUG	AGR	
a.	le[k]	k	i	le[tɕ]	ut	k	i	'light'
b.	ni[s]	k	i	ni[ʑ]	ut	k	i	'short'
c.	mło[d]		y	mło[dʑ]	ut	k	i	'young'
d.	ma[w]		y	ma[l]	ut	k	i	'small'
e.	gru[b]		y	gru[bʲ]	ut	k	i	'fat'
f.	głu[p]		i	głu[pʲ]	ut	k	i	'stupid'
g.	no[v]		y	no[vʲ]	ut	k	i	'new'
h.	ci[x]		y	ci[x]	ut	k	i	'silent'
i.	kru[x]		y	kru[x]	ut	k	i	'fragile'
j.	mok[r]		y	mok[r]	ut	k	i	'wet'
k.	cho[r]		y	cho[r]	ut	k	i	'sick'

This means that *-ut* triggers the palatalization of (a subset of) preceding consonants rather than requires the presence of a different lexical item than the one that we see in the associated non-diminutive form.[19]

Let us also point out that not all adjectives can form diminutives. Nonexistent *-ut* diminutives can be found in all five stem classes, some examples of which are given in Table 9.

Table 9. Examples of unattested diminutive forms of adjectives in the positive degree.

CLASS	ROOT	AUG	DMT	AUG	AGR	
n	*wielgach	ni	ut	k	i	'humongous'
k	*wiel		ut	k	i	'huge'
ok	*wys	(ok)	ut	k	i	'tall'
ek	*dal	(ek)	ut	k	i	'far'
	*duż		ut	k	i	'big'

The fact that we can find examples of nonexistent *-ut* diminutives in all lexical classes suggests

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[19] The palatalizing property of *-ut* must be lexical rather than phonetic since 'before [u]' is a phonetically nonpalatalizing environment (as in, e.g., [d]*uży* 'big, A.M.NOM', [p]*ulchny* 'plump, A.M.NOM', [m]*ucha* 'fly, N.F.NOM', *pa*[w]*uje* 'beat with a club, V.PRS.2SG', [s]*unąć* 'glide, V.INF.'). The palatalizations before -*ut* constitute an example of a more general situation in Polish where consonant softening appears before suffixes with initial non-front vowels like [u, o, a], as illustrated with the following selected examples from Szpyra-Kozłowska (2003: 97).

(i) a. sło[m]-a – sło[mʲ]-any 'straw, n. – straw, adj.'
   b. ka[s]-a – ka[ɕ]-arz 'safe deposit box, n. – safe-breaker, n.'
   c. [sp]-a-ć – [ɕpʲ]-och 'sleep, v. – sleepyhead, n.'

In the phonology literature, these kinds of examples have been sometimes treated in terms of morphologically-conditioned palatalizations, formalized either as an intrinsic property of a morpheme (e.g. Czaykowska-Higgins 1988) or in terms of an abstract phonological feature [−back], whose presence is morphologically determined (Gussmann 1992). For a detailed discussion see Szpyra-Kozłowska (2003). What is relevant for present purposes is that the source of palatalizations on the root-final consonants is the diminutive suffix -*ut*, rather than an alternative scenario where the merger of -*ut* requires the presence of a (mildly) suppletive root.

that they are paradigmatic gaps rather than cases of lexical blocking. That is, if the presence of *-n* or *-k* blocked the addition of *-ut* in **wielgach-ni-ut-k-i* or **wiel-ut-k-i* or the addition of *-ut* blocked the use of the root found in the associated non-diminutive as in **duż-ut-k-i*, we would expect it to apply across the board, contrary to fact, as seen in Table 8.[20]

4.2. *-k, -ek,* and *-ok* stems

Let us zoom on three stem classes of the positive degree (cf. Table 1 for reference): the *-k*, the *-ok*, and the *-ek* class. Of these three only the *-k* class is numerously represented in the Polish vocabulary, with *-ok* and *-ek* classes constituting only a few examples, listed in Table 10.[21]

Table 10. *-ok* and *-ek* adjectives

CLASS	ROOT	AUG	AGR	
ok	wys	ok	i	'tall'
	głęb	ok	i	'deep'
	szer	ok	i	'wide'
ek	dal	ek	i	'far'

Despite this quantitative disparity, all three augments exhibit the same morphological properties, as seen in Table 6 (*passim*). Namely, they are retained in an unchanged form in the associated adverbs in the positive degree but, unlike the *-n* augment, they are not retained in the adverbs in the comparative degree. They do not cause palatalization on the root. Also, both root identity (patterns III, V, and VII in Table 6) and suppletion (patterns III and VI) are attested with *-k* and *-ok* stems in comparative adjectives and adverbs (with the sole *-ek* example *dal-ek-i* showing root identity). For this reason, I will not offer a specific analysis of the lexical idiosyncrasy of *-ok* and *-ek* augments in this paper and will, instead, treat the three suffixes as closely related variants of the *-(V)k* augment.[22]

4.3. Interim summary

The approach to morphemes as lexically stored trees allows us to represent the roots and their augments, *-n* and *-(V)k*, as individual constituents. These constituents differ with respect to the

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[20] The existence of such gaps can perhaps be informed by the fact that all the roots of the (nonexistent) diminutive forms in Table 9 refer to concepts of a large measurement (size or distance). If diminutivization is a type of evaluation through an expression of smallness (cf. Grandi, Körtvelyessy 2015) then perhaps these examples resist this type of modification on the conceptual, rather than morphological, level.

[21] The four examples in Table 10 are the ones that I have been able to obtain from a corpus search using the Poliqarp search engine for the National Corpus of Polish (Narodowy Korpus Języka Polskiego) data, which comprised 1800mln annotated segments (URL: http://nkjp.pl, accessed 7.07.2023).

[22] An immediate possibility is to treat *-ok* and *-ek* as 'private' affixes, in the sense that they are accessible for selection only to a special list of roots. Within the analytical paradigm adopted for this paper, such a situation can be modeled using pointers, that is lexical entries that include reference to a specific lexical item (see, for instance, De Clercq, Vanden Wyngaerd 2019b for the application of the pointer technology to unproductive negative prefixes in French). Alternatively, the *-Vk* suffixes may be special variants of *-k*, whose selection is motivated by a template whereby the adjectival stem must weigh exactly two moras. In that case, the four examples in Table 10 would be special not so much because they select *-Vk* instead of the expected *-k* but that they are templatic (as opposed to non-templatic stems such as in, e.g., *lek-k-i* 'light'). For reasons of space, I will not explore this problem further.

kind and amount of features/heads of a syntactic sequence that captures the lexical semantic properties of positive gradable adjectives proposed in Vanden Wyngaerd et al. (2020). In particular, the distribution of the diminutive *-ut* suffix indicates that the foot of the *-n* augment starts lower in the sequence than the foot of the *-k* augment.

5. Comparative adjectives

As discussed in Section 2.2, all lexical comparative forms of adjectives contain *-ejsz* (patterns I, II, and VIII in Table 6) or *-sz* (other patterns), which appear either after the *-n* augment or as the only suffix in the stem. The *-(V)k* augment is not retained in the lexical comparatives. Both root syncretism and suppletion are attested before *-ejsz* and *-sz* (cf., e.g., patterns II, III, IV, and VI). This distributional similarity raises the question about the status of these two affixes, with two immediate options to consider: *-ejsz* and *-sz* are allomorphs or *-ej* and *-sz* are two separate suffixes.

5.1. *-(ej)sz*

The issue how to treat these two affixes has been addressed in the literature and the suggested answer has been that they are phonologically conditioned allomorphs rather than two separate affixes.[23] Namely, according to Rubach and Booij (1990) and Bethin (1992), the comparative suffix *-sz* gets augmented with *ej* after an extrasyllabic consonant (C*), in agreement with the following rule:[24]

(22) Comparative Allomorphy
      $\varnothing \rightarrow \varepsilon j / C^*\_\varsigma$

The rule correctly predicts that *-ejsz* will appear not only after *-n* stems, as for instance in (23), but also directly after roots like the ones in (24).

(23) a. jaś-ni-**ejsz**-y (*jas-n-**sz**-y) 'brighter'
      b. mar-ni-**ejsz**-y (*mar-n-**sz**-y) 'more miserable'
      c. popular-ni-**ejsz**-y (*popular-n-**sz**-y) 'more popular'

(24) a. lż-**ejsz**-y (*lż-**sz**-y) 'lighter'
      b. ostrz-**ejsz**-y (*ostrz-**sz**-y) 'sharper'
      c. uprzej[mʲ]-**ejsz**-y (*uprzej[m]-**sz**-y) 'kinder'

---

[23] In this respect, Polish seems to be more similar to Slovak then to Czech. As pointed out in Vanden Wyngaerd et al. (2020: 1 fn 3), in Slovak, the adjectival comparative allomorph *-ejš* has been traditionally described as appearing after consonant clusters and sibilants and the *-š* allomorph appearing elsewhere (Dvonč et al. 1966). In contrast, the Czech *-ej* and *-š* have been argued to be separate affixes in Caha et al. (2019), who analyze them in terms of a 'split' comparative structure, comprising two syntactic heads C(mpr)1 and C(mpr)2. Similarly to Vanden Wyngaerd et al.'s (2020) analysis of Slovak, I will continue to assume a morphologically simplex *-(ej)sz* in Polish and an 'unsplit' Cmpr head, as in (10b).

[24] An extrasyllabic consonant is the one that falls outside the syllable. In the domain we are considering, it means the syllable that cannot be syllabified with the root.

Assuming that the augmentation with *ej* is phonologically conditioned allows us to represent the adjectival comparative affix as a single lexically stored syntactic constituent. Given the syntactic representation of the comparative in (10b), the lexical entry for -(*ej*)*sz* must minimally contain not only the feature Compr but also the feature Up in its structure, as in:

(25) *(ej)sz* $\Leftrightarrow$ [Up [Cmpr]]

This is because -(*ej*)*sz* is the final suffix in all adjectival comparatives (modulo the agreement suffix) so if it realized only Cmpr, the final Up feature would remain unlexicalized.[25]

5.2. Lexicalization

With the list of the lexical entries in (17) and (25), we can update the lexicalization table with the comparatives:
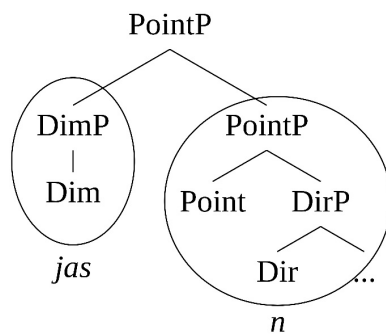
(26) Lexicalization of positive and comparative adjectives (1st approximation)

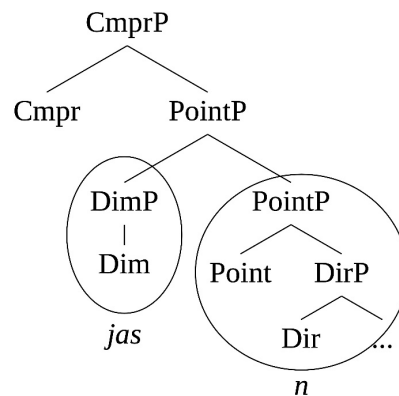| PTRN	Dim	Dir	Point	Cmpr	Up	
I	jas	n				'bright' POS
	jas	n		(ej)sz		'bright' CMPR
II	lek		k			'light' POS
	lż			(ej)sz		'light' CMPR
III	cięż		k			'heavy' POS
	cięż			sz		'heavy' CMPR
IV	wiel		k			'huge' POS
	więk			sz		'huge' CMPR
V	wys		ok			'tall' POS
	wyż			sz		'tall' CMPR
VI	szer		ok			'wide' POS
	szer			sz		'wide' CMPR
VII	dal		ek			'far' POS
	dal			sz		'far' CMPR
VIII	mał					'small' POS
	mn			(ej)sz		'small' CMPR
IX	duż					'big' POS
	więk			sz		'big' CMPR
X	młod					'young' POS
	młod			sz		'young' CMPR

---

[25] In the Nanosyntax framework adopted for this paper, every feature that is present in the syntactic representation must be realized, which leaves no possibility for the feature Up to be skipped in the lexicalization procedure. This principle goes by the name Exhaustive Lexicalization in Fábregas (2007).

5.2.1 The *-n* class. In the positive forms of pattern I adjectives like *jas-n-y*, the *-n* augment lexicalizes the constituent [Up [Point [Dir]]], which matches the superset of features of its lexical entry in (17d), while in the comparative forms like *jaś-ni-ejsz-y*, it lexicalizes a constituent that is one notch smaller, which matches the subset of features of its lexical entry. The subset spellout of *-n* in comparatives is, therefore, similar to the situation we have seen in the case of diminutives in (16), where the merger of Dmt causes the *-n* to shrink. Importantly, as visualized in the lexicalization table in (26), the merger of Cmpr delimits the span that can be lexicalized with *-n* to [Point [Dir]] and the lexicalization must restart with a LI with Cmpr as its base, as detailed in (27b).
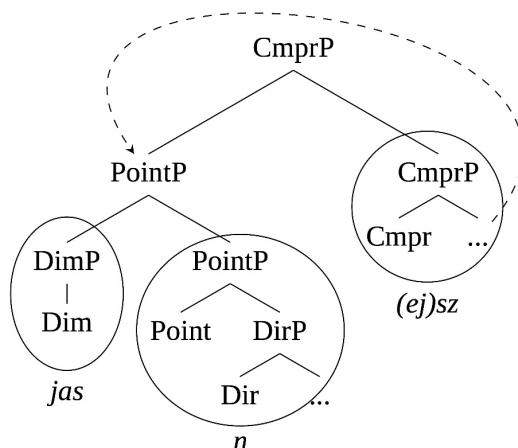
(27) a. Subset spellout of *-n*   b. Merger of Cmpr

```
        PointP                              CmprP
       /     \                             /     \
  (DimP)   (PointP)                    Cmpr    PointP
    |      /    \                             /     \
   Dim  Point  DirP                      (DimP)   (PointP)
                /  \                        |      /    \
              Dir  ...                     Dim  Point  DirP
   jas            n                                     /  \
                                            jas        Dir  ...
                                                            n
```

Lexicalizing Cmpr with a LI that has the Cmpr feature as its base is made possible following the evacuation movement of PointP, the sister to Cmpr, as illustrated in (28), which results in a subset spellout of *-(ej)sz.*

(28) Evacuation movement and subset spellout of *-(ej)sz*

```
                CmprP
               /     \
          PointP    (CmprP)
          /    \     /   \
     (DimP)  (PointP) Cmpr ...
       |      /    \      (ej)sz
      Dim  Point  DirP
                  /  \
                Dir  ...
       jas           n
```
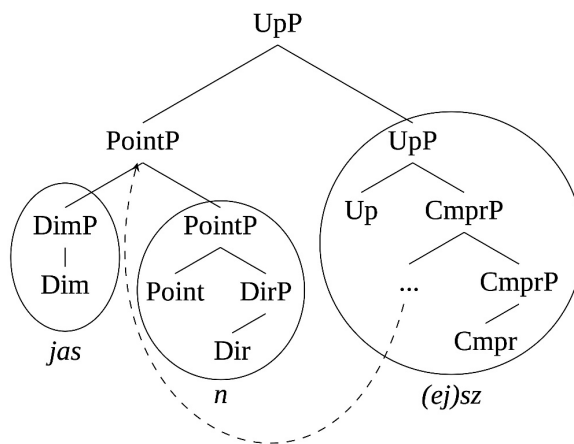
The merger of the last feature Up, as in (29a), and its subsequent lexicalization takes place following the evacuation movement of PointP, which results in the superset spellout of *-(ej)sz.*
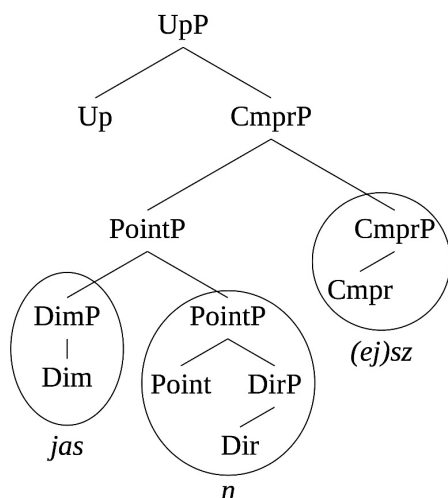
(29) a. Merger of Up   b. Evacuation movement and superset
   spellout of *-(ej)sz*

    Let us zoom on the difference between (28) and (29b) with respect to the types of evacuation movements. In (28), the lexicalization of Cmpr takes places following the evacuation of its sister node PointP, whereas in (29b) the lexicalization of Up takes place following the evacuation movement of PointP – the specifier of CmprP. Recent work on lexicalization driven movement submits that the application of both types of moving constituents follows from the lexicalization algorithm (due Starke 2018 and adopted in much subsequent work on Nanosyntax, e.g. Wiland 2019; De Clercq 2020, Vanden Wyngaerd et al. 2020; Caha 2021; Dekier 2022, among many others). The procedure can be summarized as in (30), where each next step applies if the previous one fails to result in lexicalization, that is when the resulting tree structure does not match any lexically stored constituent.[26]

(30) a. 'Stay' (merge a feature F_n and try to lexicalize the resulting tree as is).
     b. 'Move spec' (evacuate the specifier node of the complement of F_n and try to lexicalize the remnant).
     c. 'Move sister' (evacuate F_n's sister node and try to lexicalize the remnant).
     d. 'Backtrack and retry' (undo the lexicalization of F_{n-1} and try next option for that cycle).
     e. 'Subderive' (spawn a different syntactic sequence with F_n, a complex left branch, and try to lexicalize it separately from the main syntactic sequence).

---

[26] The formulation in (30), while sufficient for our discussion, is a simplified version of the current state of the algorithm, which has been argued to comprise also a third type of phrasal movement, namely extraction from within the specifier node (Wiland 2019; Starke 2022). Also, the exact way 'subderive' of (30e) proceeds is open for debate. This last resort step creates a separate tree marker with the feature F_n, which later becomes merged with the main tree as a complex left branch and, in agreement with Kayne's (1994) LCA, surfaces a pre-modifier or a prefix. This prefix-creating function is central to the morphosyntactic analysis of Polish superlatives, which are formed with the addition of *naj-* to the comparative stem (e.g., *naj-jaśniejszy*, cf. section 2.3), but since superlatives are not the focus of this paper, I leave this issue at this point.

With the lexicalization algorithm, the contrast in the application of evacuation movements between (28) and (29b) can be explained in the following way. After the merger of the feature Cmpr, the stage seen in (27b), the attempt is made to lexicalize Cmpr in the tree as is (by 'stay' in (30a)), as the least complex operation in the list of possibilities. Since no existing LI matches (27b), the next attempt to lexicalize Cmpr takes place following the evacuation of its specifier (by 'move spec' in (30b)). But the remnant constituent created in this way, as in (31), does not match any LI, either.

(31)   Unsuccessful lexicalization of Cmpr following 'move spec'
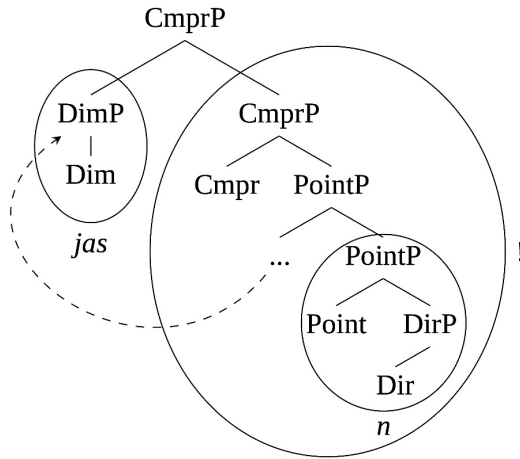
That is, while 'move spec' does result in a successful lexicalization in (29b), it fails to do so in (31) as no LI listed in (17) and (25) matches [Cmpr [Point [Dir]]]. Consequently, the derivation backtracks to the stage in (27b) and the lexicalization of Cmpr is attempted following 'move sister', as seen in (28).

The data set under consideration does not require us to employ 'subderive', the last resort step of the algorithm, as this operation results in the formation of a prefix, which is not attested in any positive or comparative form. The application of 'backtrack and retry', however, is at play in the case of constituents that become realized as roots in the *-k* class.

5.2.2 The -(V)*k* class. In the comparative form of a pattern II adjective, the root *lż* lexicalizes the sequence of features from Dim to Point by a cyclic application of 'stay' after each merge (with the later merged Cmpr and Up getting lexicalized as *ejsz* following evacuation movements as seen in (28) and (29b)). We can, thus, immediately update the list of root LIs in (17) with *lż* in (32a)(and put it next to the LI for *lek* in (32b), which is repeated from (17b)).

(32)   a. *lż* ⟺ [Point [Dir [Dim]]]
       b. *lek* ⟺   [Dir [Dim]]

With this in mind, we can assume that up to the merger of Cmpr, the same range of features gets lexicalized as *lż* also in the positive form despite the fact that it is the root *lek* that surfaces at the end of the derivation. The reason for this is the merger of the last feature in the positive sequence, Up, which cannot be lexicalized as part of *lż* (nor as part of any other root that means

'light'). Since the application of 'move sister' does not lead to a lexicalization of Up either, as there is no LI in (17) or (25) with a foot in Up, the next option is to 'backtrack and retry' of (30d). This step, illustrated in (33a), results in the lexicalization of the 'shrunk' root as *lek*, which is revealed as a better match for [Dir [Dim]] than *lż*.

(33) a. *lek* as a subset spellout of *lż*   b. Evacuation movement and superset
                                                    spellout of *-k*
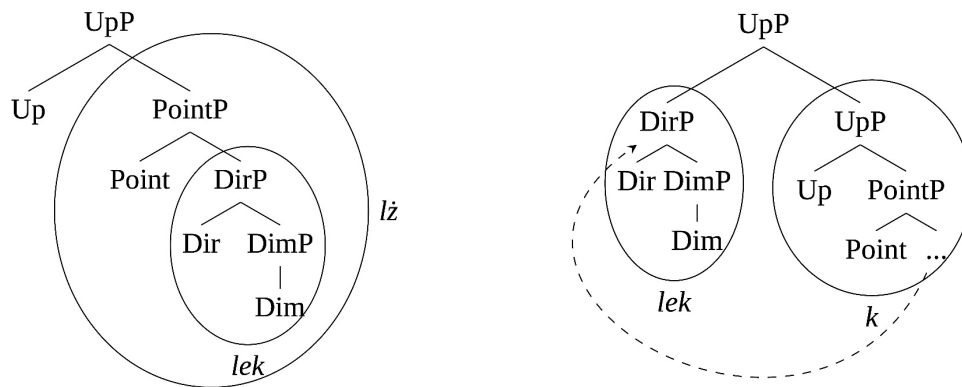
This follows from the application of the Best Fit Principle in (34), a version of the well-known Elsewhere Condition adopted for lexicalization mechanism in Nanosyntax, which makes sure that a more specific LI will take precedence over a more general LI.[27]

(34) The Best Fit Principle
      At each cycle, if several LIs match the syntactic node, the one with the fewest superfluous features is chosen.

      As shown in (33b), following the backtracking and the evacuation movement, Up becomes lexicalized jointly with Point as *-k* as its superset structure (cf. the LI for *-k* in (17e)). Let us go step-by-step through the process that leads to it. With DirP *lek* uncovered in (33a) we try the next available option for that cycle: 'move spec' of (30b). But since there is no specifier in the complement of Point, we cannot apply this step and need to go to the next one, 'move sister' of (30c). This step is shown in (33b) and involves the evacuation of DirP *lek* .
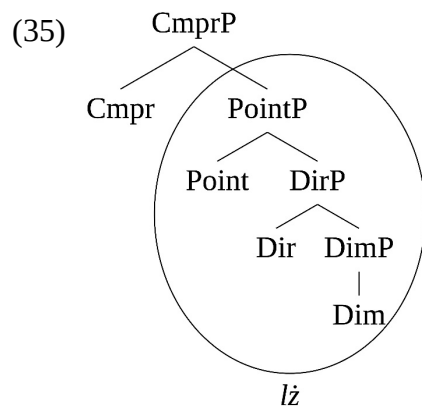   The derivation outlined above can be supported by the fact that -(V)*k* is found only in the positive forms and is never retained in front of the comparative -(*ej*)*sz*, which we can therefore informally call the *-(V)k-(ej)sz* generalization.[28] This generalization follows from the

---

[27] For this reason, the Best Fit Principle is sometimes referred to in the Nanosyntax literature as 'minimize junk' (see, e.g., Starke 2009: 4; Baunaz, Lander 2018c: 30; Wiland 2019: 11, fn 8).

[28] The only examples of comparative adjectives with the *ksz* sequence immediately before the agreement suffix (other than pattern IX adjective *większy*) that I have managed to attest in the National Corpus of Polish (NKJP) with the Pelcra search engine (accessed 10.04.2021) were *mięk-sz-y* 'softer' and a denominal *dzik-sz-y* 'wilder'. In both examples the *k* belongs to the root, as seen in the positive form *mięk-k-i* 'soft' and the noun *dzik* 'boar, M.SG.NOM'. We can therefore rather safely assume that the *k* in *więk-sz-y* is part of the suppletive root *więk*, as classified in Table 6 and represented as in (26), rather than the only exception to the *-(V)k-(ej)sz* generalization.

reasoning above that -(V)*k* does not get a chance to surface in comparatives since all comparative roots except those in the -*n* class lexicalize Point, that is the foot of -*k*.
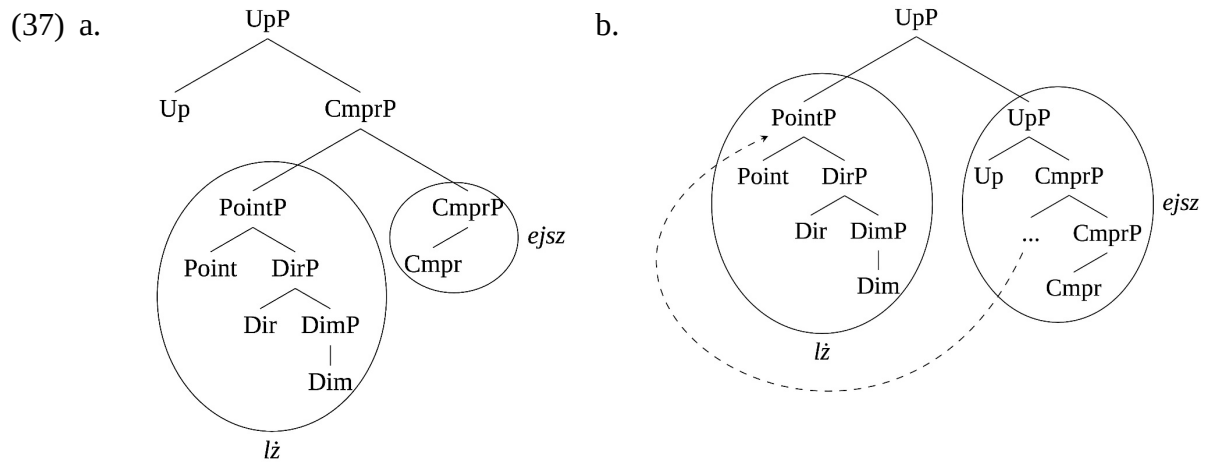
With the *lż~lek* alternation explained, let us return to the tree that is lexicalized as the root *lż*, i.e. the PointP. The formation of the comparative involves the merger of the next feature in line, Cmpr, as in:

(35)

```
            CmprP
           /    \
       Cmpr    PointP
              /      \
          Point      DirP
                    /    \
                  Dir    DimP
                          |
                         Dim
                         lż
```

Since no LI in the Polish lexicon (including *lż*) can lexicalize this tree 'as is' (the 'stay' step of the lexicalization algorithm in (30a), the next step is to resort to movement. With no specifier of the complement of Cmpr available for evacuation in (35)(i.e., 'move spec' in (30b)), the next option to try is to move PointP (i.e., 'move sister' in (30c)). This stem is exactly the same as already seen in (28) and, hence, produces the same result: the lexicalization of the resulting remnant CmprP as *ejsz* as a subset spellout of the LI in (25), as illustrated in:

(36)

```
              CmprP
             /     \
         PointP    CmprP      ejsz
         /    \    /    \
     Point   DirP Cmpr  ...
            /    \
          Dir    DimP
                  |
                 Dim
                 lż
```
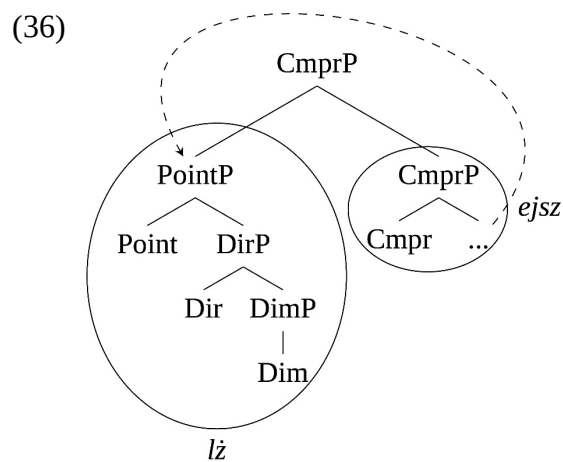
Similarly to what we have seen in (29), the merger of the last feature Up (in (37a)) and its subsequent lexicalization takes place following the evacuation movement of PointP, the specifier of the complement of the newly added feature, which results in the superset spellout of -*(ej)sz* (as in (37b)).

(37) a.

UpP
- Up
- CmprP
  - PointP
    - Point
    - DirP
      - Dir
      - DimP
        - Dim

  lż
  - CmprP
    - Cmpr

  ejsz

b.

UpP
- PointP
  - Point
  - DirP
    - Dir
    - DimP
      - Dim

  lż
- UpP
  - Up
  - CmprP
    - ...
    - CmprP
      - Cmpr

  ejsz

Let us point out that the situation observed with pattern II roots *lż* and *lek* where backtracking results in the appearence of a suppletive, or 'more fitting', root is attested also in patterns patterns IV and V, which differ only with respect to the phonologically conditioned variants of -(V)*k* and -(*ej*)*sz*. Patterns III, VI, and VII also involve backtracking of the same type, however, in these cases, there are no competing roots. That is, the backtracking that applies in the lexicalization of Point does not uncover a more fitting suppletive root as in the case of *lż* and *lek.* Instead, it only results in the subset spellout of roots in the positive degree whose superset structures are attested in the comparative.

5.2.3 The bare root class: pattern VIII

In contrast to patterns I–VII, the syntactic sizes of the roots in patterns VIII–X allows them to lexicalize all four features of the positive degree. In this set of large roots, the structure of the pattern VIII root *mał* 'small' stands out as particularly interesting.

What reveals a non-trivial shape of *mał* is that it appears in the diminutive form *mal-ut-k-i* 'tiny' but not in the comparative form *mni-ejsz-y* 'smaller', which has a suppletive root *mn*.[29] In order to visualize this problem, let us juxtapose all three relevant forms of the positive, comparatve and the diminutive in a lexicalization table:

(38)

Dim	Dir	Dmt	Point	Cmpr	Up	
mał						'small' POS
mał		ut	k			'small' POS, DMT
mn				(ej)sz		'small' CMPR

The attested diminutive *mal-ut-k-i* is unexpected if the lexical entry for the root *mał* looks like it is suggested in the lexicalization tables in (26) and (38), namely:[30]

---

[29] Thanks to the anonymous reviewer for pointing this out.

[30] Recall from section 4.1 that the diminutive -*ut* triggers the palatalization on the preceding root, which results in the change from *mał* [maw] to *mal* [mal] in the diminutive. Similarly, the suppletive root *mn* [mn] becomes palatalized into *mni* [mɲ] in front of the comparative suffix -*ejsz*. This is to say that there is no lexical difference between *mał* and *mal* or *mn* and *mni*.

(39) Impossible lexical entry for the root *mał* 'small'
    **mał* ⇔ [Up [Point [Dir [Dim]]]]

This is so because *mał* defined in this way would contain the suppletive root *mn*, which is used in the comparative:
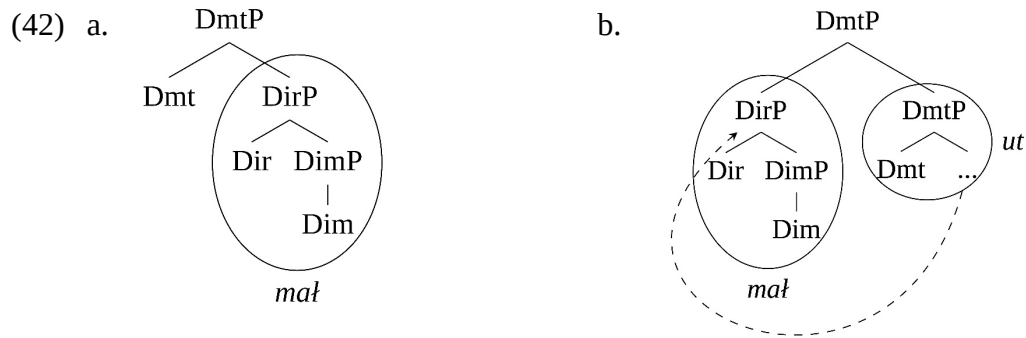
(40) *mn* ⇔ [Point [Dir [Dim]]]

With these two lexical entries, we correctly predict that *mn* will be selected over *mał* in the comparative *mni-ejsz-y* 'smaller', as indicated in the table in (26), due to the application of the Best Fit Principle in (34). But the same logic does not apply to the diminutive form *mal-ut-k-i*, which realizes the diminutive sequence in (15), since we expect the constituent [Dir [Dim]] to be realized as *mn*, not as *mał*, as a better fit. The expected diminutive is, thus, the unattested form **mni-ut-k-i* 'small, DMT', with *mn* lexicalizing [Dir [Dim]] as the subset spellout of (40) (with one superfluous feature versus a less fitting *mał* defined as in (39) as a subset spellout with two superfluous features).

    A solution to this problem is a lexical entry for *mał* that includes a tree with two complex branches (sometimes referred to as a movement-containing tree), as in:
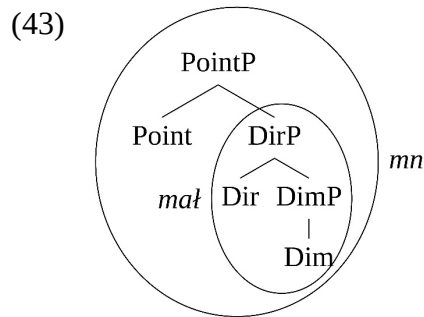
(41) *mał* ⇔
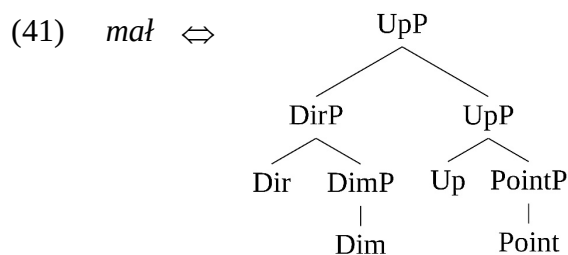
Given the sequence in (10a), such a tree structure is derived by moving DirP on top of UpP. An essential consequence of a lexical item that includes two complex daughters has been explored in Blix (2021) and relies on the fact that its complex (specifier) branch – DirP in our case —is a proper subset strucutre of the lexically stored tree. This is exactly what is needed to explain why *mał* but not *mn* appears in the diminutive *mal-ut-k-i*. Let us go through the relevant parts of the derivation of the diminutive, the comparative and the positive, to see that.

    The structure up to the diminutive-forming feature Dmt in (n4) is lexicalized by *mał* as the subset spellout of (41)(its left branch). Since there is no LI that matches the entire tree in (42a), DirP becomes evacuated and the remnant DmtP becomes lexicalized as *ut* (cf. the LI in (17f)), as shown in (42b).

(42) a.

```
        DmtP
       /    \
    Dmt     DirP
           /    \
         Dir    DimP
                  |
                 Dim
                 mał
```

b.

```
              DmtP
            /      \
        DirP        DmtP
       /   \       /    \     ut
     Dir   DimP  Dmt    ...
             |
            Dim
            mał
```
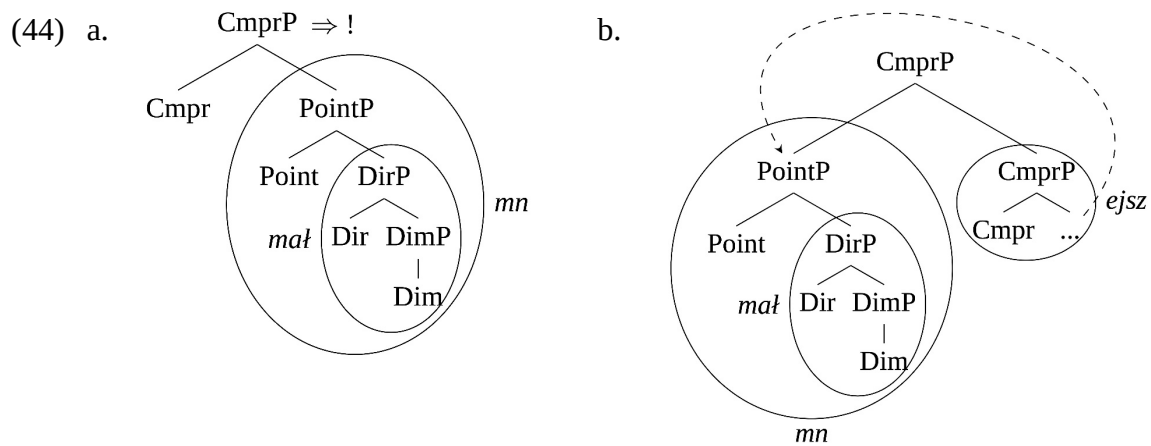
(The merger of higher features on top of DmtP in (42b), i.e., Point and Up, will result in their lexicalization as *-k* exactly like in (33b)).

In contrast, in the case of a non-diminutive adjective, the next feature in line on top of DirP is Point. When it is merged, the suppletive root *mn* of (40) will over-ride the subset structure of *mał,* as in:

(43)

```
          PointP
         /     \
      Point    DirP
      mał     /    \
            Dir    DimP     mn
                     |
                    Dim
```

In the case of the comparative, the merger of the next feature from the sequence in (10b), Cmpr, does not match any existing LI (as in (44a)) and, hence, requires the evacuation movement of PointP (as in (44b)). The remnant CmprP becomes lexicalized as *ejsz*, as the subset spellout of the LI in (25) (i.e., the same lexicalization situation as in (28) and (36)).

(44) a.

```
        CmprP ⇒ !
       /     \
    Cmpr    PointP
           /     \
        Point    DirP
        mał     /   \         mn
              Dir   DimP
                      |
                     Dim
```

b.

```
                  CmprP
                /       \
           PointP        CmprP
          /    \        /    \    ejsz
       Point   DirP   Cmpr   ...
       mał    /   \
            Dir   DimP
                    |
                   Dim
                   mn
```

(The merger of the higher feature on top of PointP, i.e., Up, will result in its lexicalization as the superstructure of *-ejsz*, exactly as in (29b) and (37b)).

In the case of the positive form, however, the feature that merges directly on top of PointP is Up, as in (45a) (cf. the sequence in (10a)). Rejecting the lexical entry for *mał* in (39) in favor of the one in (41) means that (45a) cannot be lexicalized 'as is' and requires the evacuation movement of PointP as the next available lexicalization option to try, the step shown in (45b).

(45) a.

b.
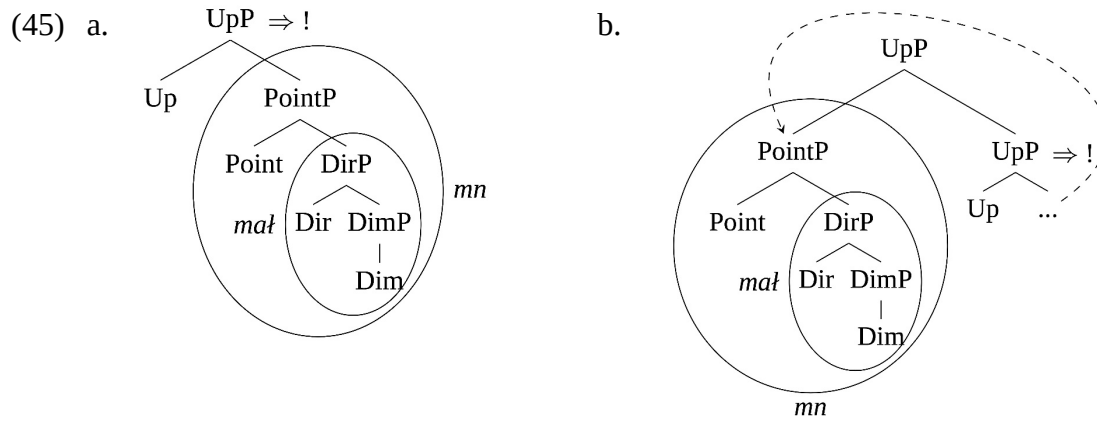
The remnant UpP in (45b), however, does not match any LI (i.e., there is no lexical entry with a foot in Up in the lexicon). Thus, in agreement with (30d), backtracking takes place: the lexicalization of the last successfully lexicalized feature, Point in (45a)), is undone (as shown in (46a)) and the constituent that was lexicalized at the earlier cycle, DirP, is evacuated as the next available option in the lexicalization algorithm (as in (46b)).[31]

(46) a.

b.
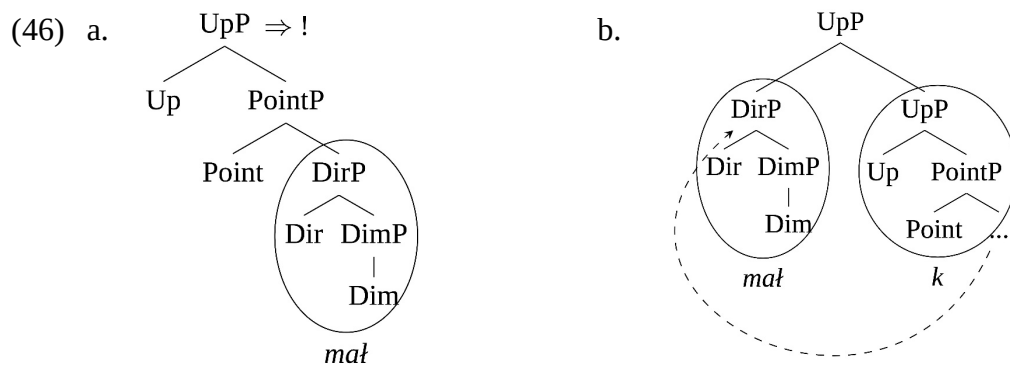
The resulting remnant [Up [Point]] in (46b) matches the lexical entry for *-k* in (17e). However, the form *mał-k-i* does not exist since the entire tree in (46b) perfectly matches the LI for *mał* in (41) and, hence, over-rides the lexicalization of its subtrees *mał* and *-k*, as shown in:

(47)

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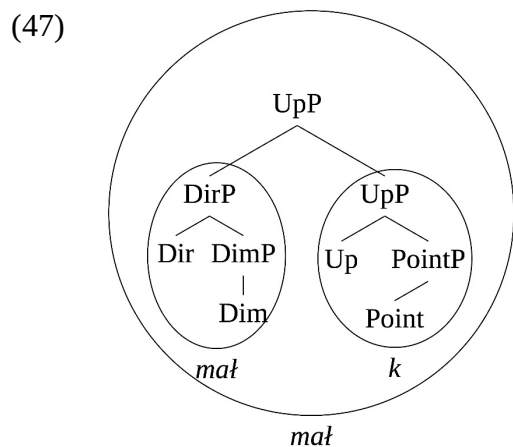
[31] There is no specifier in the sister of Point in (46a) so the next available step of the algorithm in (30) is evacuating the entire sister consituent, the one seen in (46b).

The over-riding situation in (47) is essentially the same as we have seen in previous cases such as *lż* over-riding *lek* in (33a) or *mn* over-riding (the subset spellout of) *mał* in (43). The only difference in (47) is that the superset spellout of *mał* over-rides the lexicalizations of two complex daugher nodes rather than one.

With this result, we can update the lexicalization table of (26) with the newer representation of pattern viii roots, whose two complex branches are separated with a double line.

(48) Lexicalization of positive and comparative adjectives (2nd approximation)

PTRN	Dim	Dir	Point	Cmpr	Up	
I	jas	n				'bright' POS
	jas	n		(ej)sz		'bright' CMPR
II	lek		k			'light' POS
	lż			(ej)sz		'light' CMPR
III	cięż		k			'heavy' POS
	cięż			sz		'heavy' CMPR
IV	wiel		k			'huge' POS
	więk			sz		'huge' CMPR
V	wys		ok			'tall' POS
	wyż			sz		'tall' CMPR
VI	szer		ok			'wide' POS
	szer			sz		'wide' CMPR
VII	dal		ek			'far' POS
	dal			sz		'far' CMPR
VIII	mał	‖				'small' POS
	mn			(ej)sz		'small' CMPR
IX	duż					'big' POS
	więk			sz		'big' CMPR
X	młod					'young' POS
	młod			sz		'young' CMPR

5.2.4 The bare root class: patterns IX and X

In the positive, pattern IX roots like *duż* 'big' can lexicalize the syntactic structure of the same size as pattern x roots like *młod* 'young'. In other words, the 'syntactic' part of their lexical entries are the same, as in (49), and they differ only in the exponence and the concepts.

(49) *duż, młod* $\Leftrightarrow$ [Up [Point [Dir [Dim]]]]

In the positive form, pattern x root *młod* 'young' lexicalizes the syntactic structure that corresponds to the superset of the root's lexical entry in (49). In the comparative form, the same exponent *młod* lexicalizes the syntactic structure delimited by Cmpr, as a subset spellout of (49). This is not the case with pattern IX root *duż* 'big', which lexicalizes on the structure of the

positive degree. This is so, since there exists a one notch smaller root *więk* 'bigger', as in (50), which on the strength of the Best Fit Principle, is a better match than *duż* for the sequence up to Cmpr.[32]

(50)   *więk* ⇔ [Point [Dir [Dim]]]

6. Adverbs

6.1. Positive degree
Both gradable and non-gradable adverbs are formed with the suffix *-o* or *-e*, which is added to the adjectival stem, as for instance in:[33]

(51)   a.   chud-y   –   chud-**o**
             'thin, adj.'   'thinly, adv.'
       b.   zł-y   –   źl-**e**
             'bad, adj.'   'badly, adv.'

The *-e* marker palatalizes stem-final consonants [n, m, r, v, k, t, w] into [ɲ, mʲ, ʐ, vʲ, ts, tɕ, l], as for instance seen in the (51b) example [zw]-*y* – [ʑl]-*e* or in *pysz*[n]-*y* – *pysz*[ɲ]-*e* 'delicious, adj. – deliciously, adv.'.

The contrast between *-o* and *-e* adverbs cannot be attributed to an easily identifiable functional or distributional adjectival class. As shown in Wiland (2021: 220–221), both *-o* and *-e* adverbs have corresponding attributive adjectives and different types of adjectival predicates (stage and individual level as well as situation-descriptive and charaterizing, in a classification proposed by Roy 2013 and applied to Polish adjectives in Bondaruk 2015). Instead, the selection of *-o* vs. *-e* is sometimes attributed to an interplay of morpho-phonological factors (e.g. Cyran 1967; Grzegorczykowa 1999; Wróbel 2001; Szymanek 2015). These, however, seem to come out as tendencies rather than regularities, which is perhaps best illustrated with co-existing forms like *wys-ok-o* and *wys-oc-e* 'highly' (used by the same speakers). For this reason, I will merely assume a single grammatical representation of the adverbial suffix, hoping to be able to uncover the real contrast between the distribution of *-o* and *-e* exponents in future work.

Such a uniformed and simplified treatment of the adverbial suffix, however, will not have a bearing for the analysis of the structure of the preceding stem. This is so since – as shown in Table 1 and discussed in section 2.1 – all adverbs that are formed from adjectives in the positive degree preserve the shape of the adjectival stem. This applies to all *-o* and *-e* adverbs alike. Table 11 complements Table 1 with some more examples with the adverbial suffix *-e* (with palatalizations in front of *-e* marked with shading).

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[32] The synctactic size of the root *więk* 'bigger' is, thus, the same as of the comparative root *lż* 'lighter' in (32a).

[33] There exists a small class of adverbs that do not include *-o* or *-e*, which includes temporal adverbs like *dziś* 'today' or *wczoraj* 'yesterday' or adverbials like *dookoła* 'around', *zaraz* 'in a moment', or *czasami* 'sometimes'. Since they are non-gradable and/or do not have a corresponding adjective, they are orthogonal to our discussion.
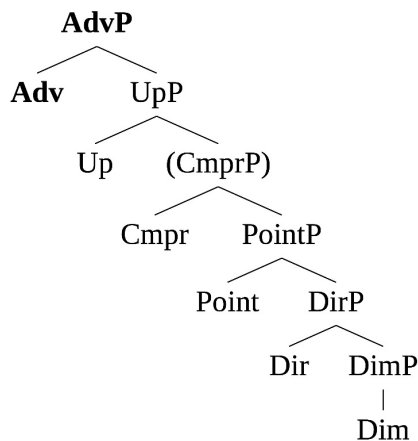
Table 11. Preservation of adjectival stems in the positive degree in *-o* and *-e* adverbs

CLASS	POS A			POS ADV			
	ROOT	AUG	AGR	ROOT	AUG	ADV	
n	jas	n	y	jas	n	o	'bright – brightly'
	spraw	n	y	spraw	ni	e	'efficient – efficiently'
k	wiel	k	i	wiel	c	e	'huge – hugely'
	lek	k	i	lek	k	o	'light – lightly'
ok	wys	ok	i	wys	ok	o	'high – highly'
				wys	oc	e	
	zł		y	źl		e	'good – well'
	dobr		y	dobrz		e	'bad – badly'

The preservation of the positive adjectival stem in its entirety in the associated adverb will follow most naturally from a scenario where the syntactic representation of the adjective is properly contained in the representation of the adverb (modulo the adjectival ϕ-features). This can be achieved by the merger of the adverb-forming feature, pre-theoretically marked in (52) as 'Adv', on top of the adjectival sequence in (10a, b):

(52)   Representation of an adverb in the positive (and the comparative) degree

```
        AdvP
       /    \
    Adv     UpP
           /    \
         Up    (CmprP)
               /     \
            Cmpr    PointP
                    /     \
                 Point    DirP
                         /    \
                       Dir    DimP
                               |
                              Dim
```

If we define the lexical entry for the adverb-forming suffix as in (53), we can represent the forms of the adjectives in the positive degree (i.e., without the Cmpr feature) vis-à-vis their adverbs as in (54).

(53)   *o/e* $\Leftrightarrow$ [Adv]

(54)

PTRN	Dim	Dir	Point	Up	Adv	
I	jas	n				'bright' A, POS
	jas	n			o	'brightly' ADV, POS
II, III, IV, V	lek		k			'light' A, POS
	lek		k		o	'lightly' ADV, POS
VI	szer		ok			'wide' A, POS
	szer		ok		o	'wide' ADV, POS
VII	dal		ek			'far' A, POS
	dal		ek		o	'far' ADV, POS
VIII	mał					'small' A, POS
	mał				o	'little' ADV, POS
IX, X	duż					'big' A, POS
	duż				o	'a lot of' ADV, POS

We see that if we control for consonant mutations in front of the adverbial *-e* in forms like in *wiel-*[k]-*i* – *wiel-*[ts]-*e* or *wys-o*[k]-*i* – *wys-o*[ts]-*e,* patterns II, III, IV and V can be unified with respect to how they look in the positive. The same proviso applies to all three patterns of the bare root class (i.e., patterns VIII–X).

6.2. Comparative degree

In the case of comparative forms, the adverb always keeps the morphological shape of the comparative adjectival stem but 'replaces' the adjectival comparative suffix *-(ej)sz* with *-ej* (see Table 6 in section 2.2). This statement comes with the condition that we control for the consonant mutations occuring in front of *-ej* as seen, for instance, in Table 6 examples *jaś-*[ɲ]-*ej* 'more brightly', *wię*[c]-*ej* 'more', *m*[ɲ]-*ej* 'less' and *mło*[dʑ]-*ej* 'younger' and also in the pattern VI adverb *sze*[ʐ]-*ej* 'wider'. With this respect, the comparative adverbial *-ej* suffix behaves just like the comparative adjectival suffix *-ejsz* (as discussed in section 2.2).

Morphologically, however, despite its surface similarity to the lengthened adjectival allomorph *-ejsz,* the adverbial *-ej* comes out as a distinct marker. This is so since, in contrast to the lengthened adjectival *-ejsz,* the presence of *-ej* is not determined phonologically as it is found in all comparative adverbs.[34]

Given the syntactic representation of the comparative adverb in (52)(with the Cmpr feature included in the sequence), we will be able to capture the 'replacement' of the adjectival *-(ej)sz* with the adverbial *-ej* if the second has the following lexical entry:

(55) *ej* ⇔ [Adv [Up [Cmpr]]]

If we compare *-ej* defined in this way to the lexical entries for *-(ej)sz* in (25) and the positive

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[34] The suffix *-ej* is also found in degree achievement verbs like, e.g., *czerni-ej-esz* 'darken', *biel-ej-esz* 'become white', *łysi-ej-esz* 'become bald' (all 1SG.PRS). While these verbs are based on adjectival roots (see Taraldsen Medová, Wiland 2019) it is unclear if these two occurences of *-ej* constitute an instance of structurally-based syncretism or an accidental homophony.

adverbial suffix *-o/e* in (53), we will correctly expect *-ej* to replace both these suffixes in the forms of comparative adverbs. This can be best illustrated in the form of the updated lexicalization table in (56).

(56) Lexicalization table of positive and comparative adjectives and adverbs

PTRN	Dim	Dir	Point	Cmpr	Up	Adv	
I	jas	n					A, POS
	jas	n				o	ADV, POS
	jas	n		(ej)sz			A, CMPR
	jas	n		ej			ADV, CMPR
II, III, IV, V	lek		k				A, POS
	lek		k			o	ADV, POS
	lż			(ej)sz			A, CMPR
	lż			ej			ADV, CMPR
VI	szer		ok				A, POS
	szer		ok			o	ADV, POS
	szer			sz			A, CMPR
	szerz			ej			ADV, CMPR
VII	dal		ek				A, POS
	dal		ek			o	ADV, POS
	dal			sz			A, CMPR
	dal			ej			ADV, CMPR
VIII	mał						A, POS
	mał					o	ADV, POS
	mn			(ej)sz			A, CMPR
	mn			ej			ADV, CMPR
IX, X	duż						A, POS
	duż					o	ADV, POS
	więk			sz			A, CMPR
	więk			ej			ADV, CMPR

As both *-(ej)sz* and *-ej* have the foot in the same Cmpr feature/cell, in agreement with our approach to lexicalization, the *-ej* affix will over-ride *-(ej)sz* as a one notch bigger structure. Since *-ej* includes also the Adv-forming feature, with 'stay' in (30a) as the default lexicalization option, we correctly expect Adv to be also realized as part of *-ej*, rather than as an external adverbial suffix *-o/e* on top of *-ej* (**-ej-o/e*).

7. Summary and conclusion

In this article, we have looked in certain detail at the morphosyntax of Polish lexical comparative adjectives and adverbs. For the analyses of their internal structures, the distribution

of syncretic and suppletive roots as well as their accompanying affixes we have adopted the Nanosyntactic model of lexicalization coupled with a recent proposal about the underlying syn-sem structure of gradable adjectives in Vanden Wyngaerd et al. (2020).

The adopted lexicalization model and its application to the Polish facts have returned the following general results:

(57) a. The syn-sem structure of the comparative adjective is 'non-trivially' contained in the structure of the positive adjective, with the Cmpr feature dominated by Up (as in Vanden Wyngaerd et al.'s 2020 proposal for Slovak).

b. The structure of the Polish adverb properly contains the structure of the adjective (modulo the adjective's ɸ-features), both in the positive and in the comparative, as in:

pos A:	[Up	[Point [Dir [Dim]]]]
pos Adv:	[Adv [Up	[Point [Dir [Dim]]]]]
cmpr A:	[Up [Cmpr	[Point [Dir [Dim]]]]]
cmpr Adv:	[Adv [Up [Cmpr	[Point [Dir [Dim]]]]]]

c. Lexical items (roots and affixes) surface as lexicalized constituents of a syntactic structure.

d. Syntactic strucutre becomes lexicalized with phrasal spellout, whereby lexicalization targets phrasal nodes, and proceeds according to a ranked order of procedures (the lexicalization algorithm) and spellout rules (the Superset Principle, the Best Fit Principle).

More specifically, with these ingredients, we have argued that we are able to capture the distribution of root forms and their affixes in Polish with the following list of lexical entries:

(58)
jas 'bright'	⇔				[Dim]
lek 'light'	⇔			[Dir [Dim]]	
lż 'light'	⇔			[Point [Dir [Dim]]]	
mał 'small'	⇔		[[Dir [Dim]] [Up [Point]]]		
młod 'young'	⇔	[Up	[Point [Dir [Dim]]]]		
n	⇔	[Up	[Point [Dir]]]		
(V)*k*	⇔	[Up	[Point]]		
(*ej*)*sz*	⇔	[Up [Cmpr]]			
ej	⇔ [Adv [Up [Cmpr]]]				
o/e	⇔ [Adv]				

The overall conclusion of the above is that the syntactic sizes of roots determine the selection of their suffixes, the result that has in recent years been obtained from the investigations domains other than adjectives, too.

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