Between adjective and noun

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ABSTRACT

We look at the presuffixal vowels occurring after adjectival and nominal stems in Hungarian. We show that their "low" or "nonlow" status depends not only on the morphological category and arbitrary lexical properties of the stem, but also on its semantic properties and syntactic position, as well as the identity of the suffix and the typical environments in which the suffix occurs. Syntactic positions can be arranged in a scale ranging from more adjectival (less nominal) to less adjectival (more nominal). The same scale may be applied to suffixes typical of these syntactic positions. The lowness of the presuffixal vowels neatly follows these scales, with no variation at the two edges and a zone of variation in the middle of the scale.

KEYWORDS

Hungarian morphophonology, linking vowels, lowering, adjectival and nominal suffixes, adjectivalness, categorization

It is commonly observed in a number of languages that the boundary between adjectives and nouns is not clear cut. This observation is based on a number of syntactic, semantic, and morphological phenomena.¹ This paper attempts to complement these claims by a morphophonological observation, the alternations of presuffixal vowels witnessed in Hungarian. The variable behaviour of certain suffixed nouns and adjectives neatly illustrates the uncertainty about their category.²

²A similar difference in the phonological properties of adjectives occurring in different syntactic positions is noticed by Hollmann (2021) in English.



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¹This includes the proposed distinction between relational and qualifying adjectives, their order, and selectional restrictions on nominal modifiers. We thank one of our reviewers for pointing this out.

The differences between nouns and adjectives are vague in many respects. This vagueness can be manifested in the meaning of the words concerned and/or their syntactic and morphological distribution. Both adjectives and nouns may be suffixed by the same set of inflectional suffixes, both may occur in the same types of syntactic environments, though not with the same likelihood. We do not intend to give any syntactic or semantic analysis of these environments, we use the minimal syntactic distributional patterns merely to identify the locations where different inflectional suffixes can occur in Hungarian. The syntactic environments verbs occupy are unique and make verbs easily identifiable. This is not the case with adjectives and nouns.³ By no means do we try to imply that there are no instances of words which unambiguously belong to one of the two categories of nouns and adjectives, but there certainly exist words which cannot be sharply categorized.⁴

Our aim in this paper is to show that, at least in Hungarian, the morphological "categories" noun and adjective are but the two extremities of a noun-to-adjective (or adjective-to-noun) scale. A number of both lexemes and word forms seem to be located within the two endpoints of this scale, and can thus be identified only as "more nounlike, less adjectivelike" or "less nounlike, more adjectivelike". It is easier to examine the formal properties of word forms, their distribution, their phonological shape, than the semantic properties of lexemes,⁵ therefore we will pay less attention to the position of lexemes on the noun-to-adjective scale.

We first introduce the relevant characteristics of suffixation in Hungarian, showing that neither the presence or absence of a vowel between stem and suffix (the so-called linking vowel), nor its quality (mid or low due to "lowering") is motivated only by the phonological shape of these morphs (§1). We then argue that lowering may not only be triggered by stems, but also by suffixes (§2). The next two sections survey the syntactic positions adjectives and nouns can occupy in sentences (§3) and the typical suffixes occurring in these syntactic positions (§4). We then examine how the adjectivalness of suffixes (§5) and stems (§6) affects the quality of the linking vowel. Vowel-final stems are discussed in §7 and a brief section is devoted to the question of whether there is a productive pattern for linking vowels after adjectival stems (§8). Some further examples of how the syntactic position of a word affects its linking vowel are treated in §9. Our findings are summarized in §10.

1. SUFFIXES, LINKING VOWELS, AND LOWERING STEMS

The (extended) paradigms of nouns, adjectives, and verbs in Hungarian exhibit hundreds of different forms. Finite verbs may contain suffixes that agree with the person and number of the subject, the definiteness of the object, as well as suffixes for past tense, conditional and subjunctive/imperative mood. Nouns and adjectives may contain the plural suffix, possessive

⁵It is not easy to decide whether two occurrences of the same word belong to one or distinct lexemes. This is true for those cases where the two lexemes belong to different categories. Note that in Hungarian offline and online databases a high ratio of adjectives are also tagged as nouns, based partly on theoretical grounds, partly on a lexicographical tradition and on practical considerations.



³"It is often impossible to distinguish adjectives from nouns on a morphological basis", says Abondolo (1988, 256). Also see Moravcsik (2001) for nounlike behaviour of adjectives.

⁴The fuzziness of categorization is very common. For example, while some objects are clearly green, others are clearly blue, a significant set cannot be obviously assigned to either colour category (or to a third one), but is in the transition zone between the two.

suffixes, more than a dozen case suffixes, and a comparative suffix.⁶ There is also a wide range of derivational suffixes, as well as many combinations of the above. There are examples of portmanteau suffixes too, but in many cases the morphs are rather neatly separable. (Although, as we will see, this is not the case with the linking vowel.)

Suffixal vowels exhibit three types of behaviour with respect to vowel harmony. Some of them are invariable, that is, the vowel of the suffix does not alternate as a result of vowel harmony, (1a), others alternate following the front or back quality of (typically) the last stem vowel, (1b), or in some cases, with front stems, also the roundedness of the front vowel, (1c).⁷

(1) Suffix types by suffix vowel⁸

a. invariable egy-kor 'one-temp', öt-kor 'five-temp', hat-kor 'six-temp', nyolc-kor 'eight-temp' egy-ig 'one-ter', öt-ig 'five-ter', hat-ig 'six-ter', kocsi-ig 'car-ter'

b. variable (2 allomorphs) egy-ben 'one-INESS', *öt-ben* 'five-INESS', *hat-ban* 'six-INESS' szeg-jük 'hem-1PLDEF', *lök-jük* 'toss-1PLDEF', *rág-juk* 'chew-1PLDEF'

c. variable (3 allomorphs) egy-szer 'one-MUL', *öt-ször* 'five-MUL', *hat-szor* 'six-MUL' szeg-j-en 'hem-IMP-3SG', *lök-j-ön* 'toss-IMP-3SG', *rág-j-on* 'chew-IMP-3SG'

The examples in (1) list suffixes that are attached to their stem without an intervening vowel. In other cases we find vowel–zero alternation between the stem and the suffix. The alternating vowel is not present in the free allomorph of the stem, but variably appears before certain suffixes.⁹ Following the terminological convention, we will call this a *linking vowel*. With the exception of *-i-*, any of the short vowels¹⁰ may be a linking vowel, though the high *-u-* and *-ü-* occur only with the 1pl nominal possessive and verbal personal suffix (*dal-u-nk* 'song-1pLPoss', *fal-u-nk* 'devour-1pL', *fül-ü-nk* 'ear-1pLPOSs', *nyel-ü-nk* 'swallow-1pL', cf. *kocsi-nk* 'car-1pLPOSs', *olló-nk* 'scissors-1pLPOSs', *fal-ná-nk* 'devour-COND-1pL').¹¹ We are agnostic about the affiliation of the linking

⁶For an extensive list of inflected forms, see Kornai (1994), Rebrus (2000).

⁷Since our only concern in this paper is the identity of the vowel between stem and suffix, we use the standard orthographic form of words. The digraph *sz* represents [s], *s* is [ʃ], digraphs ending in *y* are palatal (eg *gy* is [ɟ]), acute and double acute accent marks on vowel letters and doubling of consonant letters indicate length, \ddot{o} , \ddot{o} , \ddot{u} , \ddot{u} are front rounded vowels. We insert a hyphen between the stem, the suffix, and, later, the linking vowel, which is not part of the standard orthography.

⁸In glosses we apply the Leipzig glossing rules (https://www.eva.mpg.de/lingua/resources/glossing-rules.php) and Wikipedia's abbreviations (https://en.wikipedia.org/wiki/List_of_glossing_abbreviations) as of June 2021.

⁹Vowel-zero alternation also occurs within stems, either in the root: *majom* 'monkey', *majm-a* 'monkey-3sg.Poss', or in a suffix: *véd-elem* 'protect-NMZ', *véd-elm-e* 'protect-NMZ-3sg.Poss', and at the end of a free stem: *barna* 'brown', *barn-ít* 'brown-VBZ'. We are not concerned with these alternations in the present paper.

¹⁰The vowel inventory of Budapest Hungarian contains seven short vowels, *i*, *ü*, *u*, *e*, *ö*, *o*, and *a*.

¹¹Note that the 3pl possessive suffix -u/ük (e.g., dal-uk 'song-3pl.poss', fül-ük 'ear-3pl.poss') does not seem to be a linking vowel, with singular nouns it does not alternate with zero: kocsi-j-uk 'car-3pl.poss', olló-j-uk 'scissors-3pl.poss'. If anything, the -j- is a linking consonant here. However, we do see alternation in the case of plural nouns: dal-u-k 'song-3pl.poss', dal-ai-k 'song-Pl-3pl.poss'. We leave this issue open.



(2)

vowel. In theory it could (i) belong to the end of the stem (which, accordingly, would be a bound allomorph of the stem), (ii) belong to the beginning of the suffix, or (iii) be independent of both.¹² What is clear is that presence or absence of the linking vowel is not due to mere phonotactic repair mechanisms, as the data in (2) show. The linking vowel is emboldened. Note that there is no equivalent for the linking vowel in the glosses.

Linking vowels and their absence nyom-tok 'push-2PL' a. vs. nyom-o-tok 'trace-2PL.POSS' b. gond-nál 'trouble-ADESS' vs. mond-a-ná-l 'say-COND-2sG' c. fing-ná-l 'fart-COND-2sG' vs. fing-a-ná-l 'id.' vs. rúg-o-d 'kick-2sg.DEF' d. rúg-d 'kick-IMP.2SG.DEF' fiú-k 'boy-pl' vs. hiú-a-k 'vain-pl' e.

The linking vowel may or may not be present between (near) homophonous stems and suffixes, in both verbs and nouns: there is a linking vowel after a noun stem in (2a) and a verb stem in (2b), and there is no linking vowel after a noun stem in (2b) and after a verb stem in (2a). We even find free variation in some cases, like in (2c). There is no linking vowel in the subjunctive/ imperative mood, but there is one in the indicative mood in (2d). Moreover, a linking vowel can appear after vowel-final stems as (2e) shows. The plural form of certain adjectives contains a linking vowel. In this case not only is there no phonotactic motivation, but the linking vowel creates a phonotactically marked environment, hiatus, while the absence of the linking vowel would not do so.

A suffixal vowel may show a two- or a three-way alternation, as shown in (1). In contrast, the linking vowel shows four different variants in the Budapest accent, five if we include its absence in the count. We provide examples in (3).

(3) The alternation of the linking vowel with the accusative suffix

a.	cél-t 'goal-ACC'	vs.	a′.	jel- e -t 'sign-ACC'
b.	sül-t 'porcupine-ACC'	vs.	b′.	fül-e-t 'ear-ACC'
с.	dal-t 'song-ACC'	vs.	c′.	hal- a -t 'fish-ACC'
d.	vég-e-t 'end-ACC'			
e.	dög-ö-t 'carcass-ACC'	vs.	e′.	szög-e-t 'nail-ACC'
f.	jog-o-t 'law-ACC'	vs.	ť.	fog-a-t 'tooth-ACC'

The linking vowel before the accusative suffix may be absent after a single¹³ stem-final coronal sonorant or fricative, like -l, as in (3a-c), but it is obligatory after noncoronal sonorants and noncontinuant obstruents, like -g, as in (3d-f).¹⁴

¹⁴Palatal consonants count as coronal, so typically there is no mid linking vowel in accusative forms after j or ny (e.g., baj-t 'trouble-ACC', lány-t 'girl-ACC').



¹²See, however, Rebrus (2019) for an alternative proposal that does not require morphological segmentation.

¹³The linking vowel is present after some word-final consonant clusters (e.g., *fals-o-t* 'fake-ACC') and absent after others (e.g., docens-t 'associate professor-ACC'). We do not go into details here, see Kálmán et al. (2012).

The stem vowels of the words in (3d), (3e), and (3f) are front unrounded, front rounded, and back, respectively. The linking vowel in these words is determined by vowel harmony, accordingly, they are also front unrounded in (3d), front rounded in (3e), and back in (3f). In these three words we find mid linking vowels. In (3f') the linking vowel is low *-a-*, instead of mid *-o-*. It is due to this difference that stems of the second column (all labelled by prime symbols) are called "lowering stems" (Vago 1980; Siptár & Törkenczy 2000). So in the case of back stems, the manifestation of lowering is the low linking vowel, instead of the mid one in nonlowering stems. In the case of front rounded lowering stems, the linking vowel is not rounded, even though the stem vowel is rounded, as in (3e'). In the Budapest accent lowering cannot be detected after stems with a front unrounded vowel ending in a noncoronal consonant or noncontinuant obstruent, (3d).¹⁵

While generally there is no linking vowel after single coronal sonorants and fricatives, when we do find a vowel in the accusative case it is always -a- or -e-, never -o- or $-\ddot{o}$ -. A stem that ends in a single coronal sonorant or fricative followed by a linking vowel, as in (3a'), (3b'), and (3c'), is also a lowering stem. A speaker of the Budapest accent can tell about *jel-e-t*, (3a'), that it is a lowering stem, because it contains a linking vowel after a single coronal sonorant, but cannot do so about *vég-e-t*, (3d), because her accent has merged the contrast here.

Combining the variation of vowels "within" the suffix, the variation of the linking vowels, and the variation in the presence or absence of the linking vowel, we get the alternation types shown in (4). We use the following abbreviations: BH = front-back (or backness) harmony, RH = rounding harmony, LV = linking vowel, L = lowering.

	type	examples
a.	invariable	nyár-i 'summer-adjz', tél-i 'winter-adjz'; kocsi-ért 'car-cau', tű-ért 'needle-cau'
b.	BH: 2 variants	jár-at 'lit. go-NMZ, route', mér-et 'lit. measure-NMZ, size'; ász-ul 'ace-ess.Mod', rész-ül 'part-ess.Mod'
b [′] .	BH+LV: 3 variants	mond-a-sz 'say-2sg', önt-e-sz 'pour-2sg', él-sz 'live-2sg'; nap-u-nk 'sun-1pLposs', kép-ü-nk 'picture-1pLposs', kocsi-nk 'car-1pLposs'
b ^{′′} .	BH+LV: 4 variants	mond-a-nak 'say-3pL', önt-e-nek 'pour-3pL', él-nek 'live-3pL', hal-nak 'die-3pL'
C.	BH+RH: 3 variants	nyár-hoz 'summer-all', ősz-höz 'autumn-all', tél-hez 'winter-all'
c [′] .	BH+RH+LV: 4 variants	hús-o-n 'meat-supess', tűz-ö-n 'fire-supess', víz-e-n 'water-supess', kocsi-n 'car-supess'; mond-o-tt 'say-pst', önt-ö-tt 'pour-pst', néz-e-tt 'look-pst', él-t 'live-pst'

(4) Main types of suffix vowel alternations

(continued)

¹⁵Some accents of Hungarian distinguish between two nonhigh front unrounded vowels, a mid and a low one. In such an accent, the front unrounded linking vowel will be low(er) after a lowering stem than after a nonlowering stem. In the Budapest accent these vowels are merged and the orthography does not distinguish them either.

d.	BH+RH+LV+L: 5 variants	gáz-o-k 'gas-pL', gőz-ö-k 'steam-pL', méz-e-k 'honey-pL', ház-a-k 'house-pL', kocsi-k 'car-pL'
ď.	BH+RH+LV+L: 7 variants	gáz-o-tok 'gas-2pl.poss', gőz-ö-tök 'steam-2pl.poss', méz-e-tek 'honey-2pl.poss', ház-a-tok 'house-2pl.poss', kocsi-tok 'car- 2pl.poss', tű-tök 'needle-2pl.poss', bébi-tek 'baby-2pl.poss'

Continued

To summarize, a linking vowel may appear between a stem and a suffix. This vowel is typically *-o-*, *-ö-*, or *-e-*, but in some cases low *-a-* or *-e-* that occurs "unexpectedly", that is, after a front rounded stem vowel (where *-ö-* is expected) or after a single coronal sonorant or fricative (where no linking vowel is expected). In case the linking vowel is not mid, but low, or is unexpectedly unrounded, or is unexpectedly present, we talk about lowering.

2. LOWERING IN ADJECTIVES

In this paper we are going to examine lowering in adjectives before inflectional¹⁶ suffixes which may be preceded by a nonhigh linking vowel. This set contains five types of suffixes: (i) the comparative *-bb*, (ii) the plural *-k*, (iii) the possessive suffixes in 1sg, *-m*, 2sg, *-d*, and 2pl, *-tok/*tek/tök, which pattern together as far as their linking vowel is concerned, for the sake of simplicity, we will illustrate all three with the 2sg *-d* in our examples, (iv) the accusative *-t*, and (v) the superessive *-n*. The three adjectives in (5) show that there is significant variation with some of these suffixes, while with others the linking vowel is stable, that is, it is influenced only by front–back and potentially rounding harmony.

	'cool, trendy'	'prudish'	'indisposed'
comparative	kúl- a -bb	prűd- e -bb	mísz- e -bb
plural	kúl- a/o -k	prűd- e/ö -k	mísz- e -k
2sg possessive ¹⁷	kúl- o -d	prűd- e/ö -d	mísz- e -d
accusative	kúl-(a -)t	prűd- e/ö -t	mísz-(e -)t
superessive	kúl- o -n	prűd-ö-n	mísz-e-n

				a. a.			a
- (51	Variation	in	linking	TTOTUTOLO	in	adjactizza
١.	5)	v al lation	ш	minking	vowers	ш	adjectives

¹⁷The possessive forms of adjectives are rather infrequent and usually missing from corpora, so we had to rely on our intuitions in this case.



¹⁶The distinction between inflectional and derivational suffixes is not always obvious and often theory specific. We ignore the details here.

With the comparative suffix we only find -a-, after stems with back harmony, and -e-, after stems with front harmony, rounded $-\ddot{o}$ - does not occur here, nor does -o- after back stems.¹⁸ With the superessive suffix we find a three-way alternation: back -o-, front rounded $-\ddot{o}$ -, and front unrounded -e-, that is, there is no lowering here. With the accusative suffix we find an optional linking vowel after the coronal sonorant -l and the coronal fricative -sz, and a variable unrounded or rounded linking vowel after the plosive -d. This means lowering variably occurs here. Accordingly, the -a/o/zero- variation in the paradigm of $k\acute{u}l$ 'cool', the $-e/\ddot{o}$ - variation in the presence or absence of the linking vowel before the accusative suffix in *mísz* 'indisposed' are all cases of variation in lowering.

Lowering is standardly seen as a property of stems. Some stems are categorized as "lowering stems" (cf. Siptár & Törkenczy 2000), because they induce lowering. Adjective stems are typically lowering, noun stems are regularly not lowering, but there is a closed class of nouns that lower. In verbs lowering is not a property of the verbal root, but of some verbal suffixes (see Rebrus & Polgárdi 1997 for details). We find lowering before the infinitive and conditional suffix: *mond-a-ni* 'say-INF', *őrjöng-e-ni* 'rage-INF', *mond-a-na* 'say-COND', *őrjöng-e-ne* 'rage-COND'; or after the imperative and past suffixes: *mond-j-a-k* 'say-IMP-1sG', *őrjöng-j-e-k* 'rage-IMP-1sG', *mond-t-a-m* 'say-PST-1sG', *őrjöng-t-e-m* 'rage-PST-1SG'.¹⁹ (There is a mid vowel after the imperative suffix in the 3sg though: *mond-j-o-n* 'say-IMP-SG', *őrjöng-j-ö-n* 'rage-IMP-3SG'.)

Our examples demonstrate that lowering is as much a property of suffixes as of stems, and not only in verbs, but also in adjectives and nouns. In fact, we argue that the presence or absence of lowering is influenced not only by the stem and the suffix, but also by the syntactic position a word occupies in the sentence. The relationship of the two categories, noun and adjective, and syntactic positions is discussed next.

3. NOUNS AND ADJECTIVES IN DIFFERENT SYNTACTIC POSITIONS

The borderline between nouns and adjectives is more fuzzy in Hungarian than in, for example, English. Practically any adjective can be used as the head of a noun phrase (or, if you like, as the complement of a determiner) and practically any noun may be suffixed by the comparative suffix, albeit many such constructions are vanishingly rare. In (6) we introduce three types of syntactic position,²⁰ each with an example where it contains an adjective and a noun (also cf. Moravcsik 2001).

²⁰In this paper, we use the labels in (6) uniformly for nouns and adjectives in a distributional sense without siding with any particular syntactic analysis. Attributive position means 'prenominal modifier', predicative position means 'copular complement', NP-head means an overt noun in the head position or an adjective modifying the ellipted noun head of an NP. This categorization is motivated by the uniform distribution of inflectional suffixes in each type, see (8).



¹⁸We find -öbb in the suppletive form több 'more' (cf. sok 'many'), where the vowel is etymologically part of the stem. Unexpectedly -o- occurs with comparative -bb in a single adjective, nagy 'big': nagy-o-bb 'bigger'. The -o- in jobb 'better' is also part of the stem jó 'good'. Note that free stems never end in short -o or -ö.

¹⁹In verbs the presence vs. absence of a linking vowel is not a manifestation of lowering. Typically we find a linking vowel after clusters, and not after single consonants. Thus, although we find lowering before the infinitive and the conditional suffixes, there is no linking vowel in *öl-ni* 'kill-INF' or *lát-na* 'see-COND', but there is one in *ölt-e-ni* 'stitch-INF' or *bánt-a-na* 'hurt-COND'. For details see Siptár & Törkenczy (2000), Rebrus (2000).

position	typical	nontypical	adjective example	noun example
attributive	A	Ν	az új ház the new house	a szomszéd ház the neighbour house 'the neighbouring house'
predicative	A, N		a ház új the house new 'the house is new'	a ház iskola the house school 'the house is a school'
NP-head	Ν	A	az új the new 'the new one'	a szomszéd the neighbour 'the neighbour(ing one)'

(6) Adjectives and nouns in different syntactic positions

Both the adjective ij 'new' and the nouns szomszéd 'neighbour' and iskola 'school' may occur in attributive, predicative, and NP-head positions.²¹ However, while adjectives are more common in attributive position and nouns are untypical there,²² nouns are typically the head of a noun phrase and an adjective is less typical in this function.²³ Both categories commonly occur in predicative position. From this discrepancy in the distribution of adjectives and nouns, we infer that attributive position is more adjectival and less nominal, and vice versa, NP-head position is less adjectival and more nominal.²⁴ The distribution of nouns and adjectives in these contexts is uneven. On the one hand, nouns are restricted in several respects (lexically or semantically) in attributive position.²⁵ On the other, adjectives are not very common in NP-head position. That is, we see a decrease in adjectivalness and an increase in nominalness in the positions in (6) from top to bottom. This is shown in (7), where '>' means 'is more adjectival than'.

(7) Tentative hierarchy of syntactic positions occupied by an adjective attributive > predicative > NP-head

²³A determiner+adjective construction is analysed in many syntactic theories as a phrase containing an ellipted nominal head which is modified by the adjective. Morphologically, however, this is irrelevant: it is the adjective that is suffixed in this construction.

²⁴The word *nominal* may mean 'sharing features with both nouns and adjectives'. Here we only use it as the adjectival form of the noun *noun*, meaning 'nounlike'.

²⁵Many nouns do not occur in attributive position, but have to be suffixed with an adjectivizer, e.g., *város ház 'city house' vs. város-i ház 'city-ADJZ house'; while both the noun szomszéd and the adjective szomszéd-os 'neighbour-ADJZ' can appear in this position: szomszéd(-os) ház.



²¹Note how English uses *one* and *-ing* to adopt the adjective in a nominal and the noun in an adjectival position, respectively. Also note that neither a noun, nor an adjective requires a determiner in predicative position in Hungarian, while the noun does, but the adjective does not in English.

²²There are specific syntactic constructions containing noun+noun which are not rare, e.g., where the first noun denotes a profession: *orvos barát-om* 'lit. doctor friend-1sc.poss (my friend who is a doctor)', *tanár feleség* 'lit. teacher wife (a wife who is a teacher)', *nyelvész lány* 'lit. linguist girl (a girl who is a linguist)'.

4. SUFFIX TYPES IN DIFFERENT SYNTACTIC POSITIONS

From the ranklist the adjectivalness and nominalness of syntactic positions, a similar ranklist of the adjectivalness and nominalness of inflectional suffixes may be inferred. Some suffixes may occur only in the most nominal syntactic positions, while others are allowed elsewhere, too. This is shown in (8).

position	CMPR	PL	POSS	CASE	example
attributive	1				az új-abb ház-ai-d-on the new-cmpr house-pl-2sg.poss-supess 'on your newer houses'
predicative	1	1			a ház-ai-d új- abb-ak the house-pL-2sg.poss new-cmpr-pL 'your houses are newer'
NP-head	1	1	1	1	az új- abb-jai-d-on the new-cmpr.pl. 2 sg.poss-supess 'on your newer ones'

(8) Su	ffix types	in d	ifferent s	syntactic	positions
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There is no agreement between a head noun and its attribute in case or number in Hungarian (unlike in, for example, Latin $u\bar{n}ri$ -bus $\bar{u}n\bar{n}t$ - $\bar{n}s$ 'force-PLABL united-PLABL'). As a result, in attributive position only the comparative suffix is accessible, the plural suffix and case suffixes are not. Words in predicative position agree with the subject in number, therefore both the comparative and the plural suffix may occur here. Finally, the head of a noun phrase may be suffixed by any possessive and any case suffix, in addition to the plural and comparative suffixes. Accordingly, the more nominal the syntactic position an adjective occupies, the larger the set of suffixes available for it.

The distribution of suffix types in different syntactic positions provides us with a ranklist of these suffix types. The most adjectival suffix is the comparative, which may follow an adjective stem in any environment it occurs, even the most adjectival one, attributive position. The plural suffix is not available in attributive position (since there is no agreement between the adjectival modifier and the head noun within a noun phrase), but it is in predicative position and obviously in the head position of the noun phrase. All other suffix types, the possessive and the case suffixes, are only suffixable to an adjective that is the head of a noun phrase. These latter two are then the most nominal suffixes. The ranklist of suffix types is shown in (9), '>' again means 'is more adjectival than'.

(9) Tentative hierarchy of adjectival suffix types comparative > plural > possessive, case



An anonymous reviewer calls our attention to the adverbial-forming suffix *-n* (e.g., *szép-en* 'nice-ly', *vak-on* 'blind-ly', *butá-n* 'foolish-ly'), which can only be hosted by adjectives.²⁶ Indeed, there also exist verb-forming suffixes like *-ít*, *-ul/ül*, *-odik/edik/ödik* (e.g., *szép-ít* 'nice-VBZ', *gyors-ul* 'fast-VBZ', *gazdag-odik* 'rich-VBZ'), which apparently are only added to adjectival stems.²⁷ Crucially, these do not seem to be inflectional suffixes, since they change the category of the stem (from adjective/noun to adverb/verb; also cf. Kiefer & Ladányi 2000), therefore they are outside the scope of this paper.

5. SUFFIX ADJECTIVALNESS AND THE LINKING VOWEL

We have seen that both syntactic positions where adjectives may occur and suffixes that may be attached to adjectives can be arranged in adjectivalness hierarchies from most to least adjectival (and simultaneously from least to most nominal). In (10) we combine these hierarchies and complete them with the linking vowels that occur with each of the five types of suffixes under discussion.

functions	typical categories	suffixes				
		CMPR	PL	POSS	ACC	SUPESS
attributive	А	1				
predicative	A, N	1	1			
NP-head	Ν	1	1	1	1	1
typical stems		A	A, N		N	
back linking vow	а	a/o	a/o	a/o/Ø	0	

(10) Types of suffixes and linking vowels after consonant-final stems	(10)	Types of suffixes	and linking v	owels after	consonant-final stems
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We see that the choice of the linking vowel shows significant correspondence to the position of the affix on the adjectivalness hierarchy. Before the most adjectival suffix, the comparative -bb, the low linking vowel is selected. Before the nominal superessive -n, we only find the mid linking vowel -o- or $-\ddot{o}$ -, or -e- as the stem's harmony dictates. The suffixes between these two endpoints of the hierarchy are in the zone of variation, selecting either the low or the mid linking vowel. Some clues to resolve the indeterminacy will be mentioned below.

²⁷Note, however, that with some vowel-final adjectival stems these suffixes take an s-initial allomorph, which, in fact, is the productive pattern (e.g., *forró-sít* 'hot-VBZ', *hiú-sul* 'vain-VBZ', *sűrű-södik* 'dense-VBZ'). The same strings can productively be added to nominal stems, whether they be analysed an adjectivizer -s followed by the verbalizer or as a single morpheme (e.g., *tanú-sít* 'witness-VBZ', *iz-esül* 'joint-VBZ', *szaru-sodik* 'callus-VBZ'). We again witness an overlap between adjectives and nouns as the base of suffixation.



²⁶Even this morpheme seems to have a lexically conditioned allomorph, *-ul/ül (konok-ul* 'stubborn-ly', *pazar-ul* 'sumptuous-ly', *szó-tlan-ul* 'word-less-ly', *német-ül* 'in German', etc.). Intriguingly, this allomorph is homonymous with the so-called essive-modal suffix productively added to nouns (*mintá-ul* 'as a pattern', *emlék-ül* 'as a memory'). This also hints at a lack of a clear-cut distinction between denominal and deadjectival suffixes.

6. STEM ADJECTIVALNESS AND THE LINKING VOWEL

It is not only suffixes that exhibit variation in the mid/low status of the linking vowel, but also stems. In (11) we list adjective stems. Those at the top of the chart are the least adjectival, and consequently most nominal, those at the bottom are the most adjectival.

subclasses	A status	CMPR	PL	POSS	ACC	SUPESS	example
irregular A (& regular N)	A/N	а	0	0	0	0	vak gazdag
hasitating A	A/?N	а	a/o	0	0	0	szabad
hesitating A	A/ (N			a/o	a/o	0	boldog
regular A (& irregular N)	A	а	а	а	а	0	új magas
typical stems	Α	A, N		Ν			

(11)	Adjectival	stems	and	back	linking	vowels
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"Irregular adjective" stems behave like "regular noun" stems. Vak 'blind' or gazdag 'rich' have a low linking vowel only with the comparative suffix (vak-a-bb 'blinder', gazdag-a-bb 'richer'), with all other suffixes they select a mid linking vowel. This is the regular nominal pattern: bak 'buck', anyag 'substance', bak-a-bb, anyag-a-bb 'more like a buck/substance', bak-o-k, anyag-o-k 'bucks/ substances', bak-o-d, anyag-o-d 'your-sg buck/substance', bak-o-t, anyag-o-t 'buck/substance-ACC', bak-o-n, anyag-o-n 'on the buck/substance'. The regular adjectival pattern is the low linking vowel with all but the superessive case suffix: új-a-bb 'newer', új-a-k 'the new ones', új-a-d 'your-sg new one', új-a-t 'the new one-ACC', új-o-n 'on the new one'. Stems like szabad 'free' or boldog 'happy' are stable at the edges of the hierarchy, followed by a low vowel before the most adjectival suffix, the comparative (szabad-a-bb 'freer', boldog-a-bb 'happier'), and a mid vowel before the most nominal case suffix, the superessive (szabad-o-n 'on the free one', boldog-o-n 'on the happy one'), but variable with the plural, the possessive, and the accusative suffix (szabad-o/a-k 'the free ones', boldog-o/a-k 'the happy ones', szabad-o-d 'your-sg free one', boldog-o/a-d 'your-sg happy one', szabad-o-t 'the free one-ACC', boldog-o/a-t 'the happy one-ACC').

Membership in the two nonvariable groups, "irregular adjective/regular noun" and "regular adjective/irregular noun", seems to be correlated to the meaning of the given lexeme. Irregular adjectives often refer to properties of humans, and are therefore more commonly used as head of an NP, since their referent does not have to be introduced earlier in the text. According to Nádasdy, a test applicable to whether a word is a "noun" or an "adjective" is the environment *Váratlanul belépett egy* _ 'Unexpectedly a _ came in', used at the beginning of a text (2019, 178). *Vak* 'blind' can be used in this context to mean 'a blind person', *magas* 'tall' cannot be used here. The noun phrase *egy magas*, in which the head position is occupied by a "regular adjective", can only be used to mean 'a tall one', if its referent has been introduced implicitly or explicitly to the context. Ethnonyms and language names all belong to the "irregular adjective/regular noun" group. Noun phrases like *egy angol* 'an English (scil. man or woman)' or *egy belga* 'a Belgian (scil. man or woman)' are interpreted as referring to a person of the given nationality, unless



some other referent was introduced earlier.²⁸ Lexemes in the intermediate group, "hesitating A", are also semantically in between the two "stable" categories. Further research is definitely needed here.²⁹ One welcome example is Lévai (2020), who uses statistical methods to demonstrate that the meaning of adjectives correlates with their status of being lowering or not.

It is important to point out that each of the three groups are productive (see §8). The recently coined ethnonym *piréz*³⁰ belongs to the "irregular adjective" group, may freely be used as NP-head, and shows no variation in its suffixes.³¹ "Regular adjectives" can be created by the adjectivizer derivational suffix -s: e.g., *szabály-o-s* 'rule-ADJZ (=regular)', which will regularly lower: *szabályos-a-k* 'regular-PL', *szabályos-a-t* 'regular-ACC' (cf. footnote 29 though). The "hesitating" group is enlarged by loans, as illustrated in (1), and by nouns used "adjectivally": e.g., *király* 'king' used as 'superb' (*ezek tök király-a/o-k* 'these are totally superb', cf. *király-o-k* 'king-PL'), *szar* 'shit' used as 'worthless' (*ezek tök szar-a/o-k* 'these are totally worthless', cf. *szar-o-k* 'shit-PL'). The hesitation of loan adjectives is possibly due to the discrepancy between the variable lowering of adjectives and the invariable nonlowering of loan nouns (see Kálmán et al. 2012 for details).

We have seen that lowering may be manifested not only as the presence of a low (vs. mid) linking vowel, but also as the absence of rounding harmony. In (12) we collected adjectival stems that illustrate the same graduality as those in (11), but this time the rounded $-\ddot{o}$ - as a linking vowel indicates the absence of lowering, while the unrounded -e- occurs where lowering prevails.

subclasses	A status	CMPR	PL	POSS	ACC	SUPESS	example
irregular A (& regular N)	A/N	е	Ö	Ö	Ö	Ö	türk pöttöm
heaitating A	A /ON		o / ä	Ö	Ö	ö	zömök
hesitating A	A/?N	e	e/ö	e/ö	e/ö	U	prűd
regular A (& irregular N)	A	е	е	е	е	Ö	bölcs szűk
typical stems		Α	A, N		Ν		

(12) Adjectival stems and front rounded linking vowel	(12)	Adjectival	stems	and	front	rounded	linking	vowels
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²⁸English seems to apply a different, perhaps phonological constraint here: adjectives ending in -(*i/e)an* may be used as a "noun", others, for example those ending in [ʃ] or [tʃ], may not: an American/Athenian/Ethiopian vs. *a Welsh/French/Polish.

²⁹For example, while adjectives formed by the adjectivizer *-s* generally lower, they often do not have a linking vowel (i.e., do not lower) before the accusative suffix: *melyiket kéred? a két-ablak-o-s-(a-)t* 'which one do you want? the one with two windows (lit. the two-window-ADJZ-ACC)'. This may be due to the large number of lexicalized nouns ending in the same suffix: e.g., *asztal-o-s* 'lit. table-ADJZ (=carpenter)'. The privative suffix *-t(a)lan/t(e)len* forms adjectives, which all belong to the nonlowering "irregular adjective" group.

³⁰*Piréz* is an imaginary ethnic group name made up by a Hungarian polling company in 2006 in a survey of xenophobia: https://en.wikipedia.org/wiki/Piréz_people.

³¹Being a front unrounded stem, *piréz* shows the lack of lowering only with the accusative suffix: *piréz-t*. The ad-hoc creation *varéz* exhibits the same lack of lowering with other suffixes too: the plural is *varéz-o-k*, the 2sg possessive is *varéz-o-d*, etc.



As before, the "irregular adjective" stems follow the regular nominal pattern and exhibit lowering only before the comparative suffix (*türk-e-bb* 'more Turkic', *pöttöm-e-bb* 'tinier'), but not before any of the other suffixes (*türk-ö-k* 'the Turkic ones', *pöttöm-ö-t* 'the tiny one-ACC', etc.). At the other end of the scale we find "regular adjectives" that have a front rounded linking vowel only before the superessive suffix, but an unrounded front vowel elsewhere, that is, they lower before almost all suffixes (*bölcs* 'wise', *szűk* 'narrow'). And there are items in between, which are invariably lowering before the comparative and not lowering with the superessive, while they are variable with the plural, possessive, and accusative suffixes (*zömök* 'stubby', *prűd* 'prudish').

The third manifestation of lowering is the presence of a linking vowel after a stem that ends in a single coronal sonorant or fricative. We list such words in (13).³²

subclasses	A status	CMPR	PL	POSS	ACC	SUPESS	example
irregular A (& regular N)	A/N	A	0	0	zero	0	primőr fiatal
hasitating A	A / 2N		A / O	0	zero	0	ősz profán
hesitating A	A/?N	A	A/0	A/0	A/zero	0	hűs ravasz
regular A (& irregular N)	A	A	A	A	A	0	erős magas
typical stems		Α	A, N		N		

(13) Adjectival stems and the absence of linking vowels

As before, we find both nonalternating, nounlike adjectives, which lower only before the comparative suffix (*primőr-e-bb* 'earlier', *fiatal-a-bb* 'younger'), but do not have a linking vowel before the accusative suffix (*primőr-t* 'the early one-ACC', *fiatal-t* 'the young one-ACC') and have a rounded and mid linking vowel before the plural and possessive suffixes (*primőr-ö-k* 'the early ones', *primőr-ö-d* 'your-sG early one'; *fiatal-o-k* 'the young ones', *fiatal-o-d* 'your-sG young one'). Other adjectives are fully adjectival, that is, they contain a low or unrounded linking vowel, even before the accusative suffix (*erős-e-t* 'the strong one-ACC', *magas-a-t* 'the tall one-ACC'). And again, some adjectives are followed by an invariable linking vowel before the comparative and the superessive, and show variation before the plural (*ősz-e/ö-k* 'the grey haired ones', *profán-a/o-k* 'the profane ones'), the possessive suffixes (*hűs-e/ö-d* 'your-sG cool one', *ravasz-a/o-d* 'your-sG canny one'), and the accusative suffix (*hűs-(e-)t* 'the cool one-ACC', *ravasz-(a-)t* 'the canny one-ACC').

³²Since we here have words with both back and front harmony, we use the standard variables "A" for *-a-* and *-e-*, the low linking vowel, and "O" for *-o-*, *-o-*, and *-e-*, the mid linking vowel.



7. VOWEL-FINAL STEMS

We have shown that the primary function of linking vowels is not to repair phonotactically illformed consonant clusters: a vowel may or may not appear in the same environment, cf. (3). In fact, a linking vowel may also appear after a vowel-final stem. In (14) we list vowel-final monomorphemic adjectival stems.

subclasses	A status	CMPR	PL	POSS	ACC	SUPESS	example
irregular A (& regular N)	A/N	zero	zero	zero	zero	zero	hindu nettó
regular A (& irregular N)	А	zero	a/zero	zero/?a	zero/?a	zero	hiú fakó
typical stems		Α	A, N		N		

(14)	Vowel-final	adjectival	stems
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Vowel-final stems show a similar, but more limited variation of linking vowels. The ethnonym *hindu* and the loan *nettó* 'net' follow the regular nominal pattern, they do not lower at all. Many other vowel-final adjectives, however, variably lower in the zone of variation: $hi\dot{u}$ -(a-)k 'vain-PL', $fak\dot{o}$ -(a-)k 'pale-PL'. There is a tendency for lowering (i.e., the linking vowel) to occur before the accusative suffix too: hiú-(?a-)t, fakó-(?a-)t (Nádasdy 2019, 182).

In the variation of linking vowels we can observe an obvious gradual pattern dependent on the height of the stem-final vowel and on whether this vowel is a derivational suffix or a part of the stem morpheme itself. (15) shows this scale with the plural suffix.

(15)Linking vowels/lowering in the plural forms of vowel-final adjectival stems

stem-final vowel	mono-morphemic	with derivational suffix	example
-i	zero	А	kicsi-k, ma-i- a -k
-u/ü	A/zero	А	hiú-(a)-k, haj-ú- a -k
-ó/ő	%A/zero	A/zero	olcsó-(%a)-k, vonz-ó-(a)-k
-á/é	zero	zero	butá-k, fasz-á-k

A monomorphemic adjectival stem ending in -i cannot be followed by a linking vowel (recall, after vowel-final stems, the linking vowel always indicates lowering): kicsi-k 'small-PL'. As we have already seen in (14), the other two high vowels, -u and $-\ddot{u}$, do allow an optional linking vowel. However, in case this high vowel is a derivational suffix forming an adjective, there is a linking vowel and it is obligatory: ma-i-a-k 'lit. today-ADJZ-PL, modern-PL', haj-ú-a-k 'hair-ADJZ-PL' (as in hosszú hajúak 'long-haired'). Mid -ó/ő is also an adjectivizer (see (16) below). In words containing this suffix the linking vowel is variable. When the mid vowel is part of



the stem, many speakers cannot have a linking vowel at all, but having one is a new tendency in innovative varieties of the language, as noted above. Finally, adjectives ending in a low vowel never lower, that is, they never have a linking vowel. Word-final short³³ low vowels lengthen before the plural suffix (as well as before most other suffixes): *buta* 'foolish', *butá-k* 'foolish-PL'; *lüke* 'dumb', *lüké-k* 'dumb-PL'.³⁴ There exists no productive adjectivizer suffix ending in a low vowel, and even the rather marginal case of *fasz-a* 'lit. prick-ADJZ(?), cool, trendy' behaves like monomorphemic items: *fasz-á-k* 'cool-PL'.

8. IS THERE A PRODUCTIVE ADJECTIVAL PATTERN?

One may rightly ask at this point whether lowering or its absence is the productive pattern in adjectives. Although adjectives appear to be generally lowering, this cannot be taken to be the productive pattern. The productivity of this phenomenon can be tested in at least two ways: either by the behaviour of loan words, or by the behaviour of adjectives derived by productive affixation. Loan adjectives, as we have seen in (5), are typically variable in this respect. This variability is often overridden by semantic information, for example, ethnonyms are never lowering (cf. *varéz-ok* in footnote 31). In the case of native derivations morphological information is decisive: some adjectivizers, like *-s*, *-t*, *-ó/ő*, typically create a lowering stem, others, like *-tlan/tlen*, *-talan/telen*, never do so. Adjectives derived from a noun by conversion also often exhibit variation (e.g., *szar-ok/ak* 'shitty-PL', *király-ok/ak* 'superb'). This great degree of variation also indicates that there is no uniform productive pattern for adjectives, at least from a morphophonological point of view.

9. SYNTACTIC POSITION AND THE LINKING VOWEL

We have shown that syntactic positions may be arranged on a scale ranging from nominalness to adjectivalness. Words occurring in an adjectival position are suffixed with only "adjectival" suffixes, like the comparative, others occurring in a nominal position may also be suffixed with "nominal" suffixes, like the superessive or other case suffixes, in addition to the "adjectival" suffixes. We have also seen that the more adjectival a suffix, the more likely that the linking vowel before it exhibits lowering: low *-a-* instead of mid *-o-*, unrounded *-e-* instead of rounded *-ö-*, *-a-* or *-e-* instead of its absence.

We even find alternation with the same stems in different syntactic positions, which may also be linked to the semantic properties of the lexemes concerned (cf. Tompa 1957; Elekfi 2000). For example, *kopasz* 'bald' or *vörös* 'red' frequently occur in both nominal and adjectival position. The Szószablya webcorpus (Halácsy 2003) contains 181 instances of the plural form *kopaszok*, 169 of which are categorized as "nouns" and 12 as "adjectives", and 28 instances of the other plural form, *kopaszak*, all of them categorized as "adjectives". Similarly, the plural form *vörösök* is categorized as a "noun" in all its occurrences, while *vörösek* as an "adjective".

³⁴László Fejes calls our attention to the marginal plural forms including lowering in *gané* 'scummy', *gané-(?a)k* 'scummy-PL'; *csálé* 'bevelled', *csálé-(?a)k* 'bevelled-PL'.



³³Word-final long "low" vowels occur rarely and remain unchanged: ordenáré 'gross', ordenáré-k 'gross-PL'.

(Entries in this webcorpus are categorized by a high-precision statistical algorithm, see Halácsy et al. (2007).)

Most descriptions of this phenomenon are forced to claim that we are dealing with two lexemes here, which are homonymous in their uninflected forms. Let us consider the examples in (16) from Nádasdy (2019, 170).

(16) Homonymous bases?

a.	а	komikus-o-k	komikus-a-k
	the	comedian-PL	comical-PL
	'comedia	ans are comical'	

b. ez-e-k a vizsgá-k a levelez-ő-k számára kötelez-ő-e-k this-PL the exam-PL the correspond-ADJZ-PL for oblige-ADJZ-PL 'these exams are obligatory for correspondent students'

(16a), from a lecture by John Lotz, has *komikus* both in subject position, as the head of a NP, and in the predicate position (the copula is absent in 3rd person in the present indicative). In the former, nominal position, the linking vowel before the plural suffix is mid -o-, in predicative position, we find low -a- as the linking vowel. In fact, in predicative position mid -o- is also possible, but low -a- is not available in NP-head position. Although the English glosses differ for the two instances of *komikus* ('comedian' vs. 'comical'), it is not obvious that these are indeed two separate lexemes: *komikus*₁, a noun, and *komikus*₂, an adjective. Instead, we claim that this is the same lexeme occurring first in a prototypically nominal position, NP-head, then in a less typically nominal position, as predicate. The linking vowels reflect this difference.

(16b) is an example Nádasdy claims to have heard in a university office. The two relevant words, levelező and kötelező, are formally participles derived from the verbs levelez 'correspond' and kötelez 'oblige'. However, the verb kötelez governs two arguments, one in the accusative, the other in the sublative case (kötelez levelező-t vizsgá-ra 'oblige corresponding [student]-ACC exam-subl'). The arguments of kötelező, on the other hand, are in the nominative and in the dative case (the postposition számára is a formal way of expressing the dative). A participle typically inherits the argument structure of its verbal stem. Furthermore, unlike adjectives, participles do not exhibit lowering either in NP head or in predicative position (e.g., if one decides to use a participle instead of a finite verb form in the sentence a szabály-ok Máriá-t vizsgá-ra kötelez-ő-(*e)k 'the rule-s Maria-ACC exam-SUBL oblige-APRT-PL', the linking vowel cannot occur). This is probably due to the fact that participles occur in these positions rather rarely (András Komlósy, p.c.), which does not provide enough instances for the language learner to introduce the linking vowel. Accordingly, kötelező in this sentence is a lexicalized adjective (explaining our label "adjectivizer" in its gloss). The other "participle", levelező is a lexicalized noun in (16b), functioning as the head of a noun phrase. Etymologically it is from a lexicalized adjective, an attribute in the phrase levelező tagozat 'correspondent division' (as opposed to fulltime students). Again, the linking vowels reflect the status of these words: levelező, in NP-head position, may not be followed by a linking vowel, while the predicative kötelező may. (The linking vowel is absent in a more formal/archaic variety of Hungarian.) This reflects a further factor in the appearance of the linking vowel: though the $-\delta$ is a suffix in both words, their syntactic function influences whether they lower or not.



10. SUMMARY

We have argued that the difference between adjectives and nouns is not categorical in Hungarian. The same lexeme may be used in an adjectival and in a nominal position. A morphophonological property, lowering, is often used to mark an adjective, in contrast to a noun. However, adjectives do not behave uniformly with respect to lowering: the three groups of adjectives, lowering, variable, and nonlowering, may all be extended productively.

Syntactic positions may be arranged in a scale ranging from more adjectival (and simultaneously less nominal) to less adjectival (and simultaneously more nominal). Due to syntactic constraints, in attributive position, which is the most adjectival one, a stem can only take the comparative suffix. In predicative position, the plural suffix is also available. It is only lexemes occurring as the head of a noun phrase that may take the full set of possessive and case suffixes. Accordingly, suffixes can also be arranged along an adjectival-to-nominal scale. The presence, absence, and variation of lowering neatly follows the types of suffixes, the syntactic positions, and also the semantic properties of lexemes. We find no variation at the two edges of the scale, and a zone of variation in between.

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