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**MORPHOLOGICAL COMPLEXITY AS A PARAMETER OF
LINGUISTIC TYPOLOGY:
HUNGARIAN AS A CONTACT LANGUAGE**

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[Running head: Complexity, Typology, and Hungarian in Contact]

Abstract

The paper builds on studies on Hungarian spoken outside Hungary (Fenyvesi (ed.) 2005), which show a change from synthetic to analytic expression in Hungarian in contact. It argues that a parameter of morphological complexity is helpful to account for most morphological changes. With one exception the changes follow the strategy of replicating use patterns (Heine & Kuteva 2005). Other changes arise by implication of a different typological system adopted by the new varieties of Hungarian (De Groot 2005a). A detailed comparison between Hungarian inside and outside Hungary in terms of linguistic complexity (Dahl 2004) confirm to the idea that languages in contact become linguistically more complex. The paper furthermore discusses the interaction between typology, language change by contact, and complexity.

1. Introduction and the aim of the paper

Studies on Hungarian spoken outside Hungary (Austria, Slovakia, Ukraine, Romania, Vojvodina, Prekmurje, United States and Australia as presented in Fenyvesi (ed.) 2005) reveal interesting information on the change of Hungarian as a minority language.¹ Most studies in that volume present data elicited on the basis of the questionnaire which was developed in the “Sociolinguistics of Hungarian Outside Hungary Project” carried out in the early 1990s. Where available, the data was completed by data from earlier studies. In the questions two sentences or linguistic constructions were contrasted. The task of the informant was to tell which sentence or construction in his or her opinion sounded more natural, or in other cases whether sentences or constructions should be considered good or bad. Consider e.g. number 514 of the questionnaire (Fenyvesi (ed.) 2005: 403).

“Out of the following pairs of sentences, circle the number corresponding to the sentence you consider to be more natural sounding.”

- 514 (1) *Tanító néni, fáj a fejem.* *Kimehetek?*
 (2) *Tanító néni, fáj a fejem.* *Ki tudok menni?*
 ‘Miss, I have a headache. May I go out?’

Most of the differences – if not all – between standard Hungarian (HH) and Hungarian outside Hungary (HO) can be explained in terms of language contact where HO takes over features from adjacent languages, which all happen to be Indo-European. In De Groot (2005a) I showed that a number of the differences observed in all varieties of Hungarian outside Hungary follow linguistic universals and implicational hierarchies and that the co-occurrences of changes can actually be explained in terms of universals or hierarchies.

However, since typological literature does not offer explanations for the systematic change from *synthetic expression in HH to analytic expressions in all the varieties of HO*, I suggested in de Groot (2005a) that a typological parameter of morphological complexity could account for the differences in the various morphological components. The transition from HH, which is morphologically relatively complex, to HO, which is morphologically less complex, would account for why speakers of the latter favour less complex words in cases where speakers of HH would use morphologically more complex words. Further typological research on a large sample of languages in the field of language variation should be carried out to see whether the parameter of morphological complexity is a typological parameter indeed. This paper will not address this issue. It will, however, investigate the status of the notion of complexity in the parameter suggested, i.e. to what extent the notion of complexity is a relevant metric within the domain of morphology and how does it relate to the grammatical system as a whole. The discussion will be based on largely the same set of data presented in Fenyvesi (ed.) (2005) and my analyses thereof in that volume.

The paper is organized in the following way. Section 2 presents a number of distinctions relevant to the discussion of the data related to complexity. These distinctions and the general background are based on Dahl (2004). Section 3 takes the data presented in De Groot (2005a) as its input. For each morphological category, more detailed grammatical and typological analyses are given for differences which hold between forms used in HH and HO. The analyses enable better insights in why and how alternative expressions in HO come into existence and use. Furthermore, the differences will be discussed in terms of complexity as presented in Section 2. Section 4 is devoted to a syntactic pattern that arises in one of the new analytic expressions. Section 5 is dedicated to language contact and Section 6 to linguistic typology. Finally, Section 7 presents the general conclusions.

2. Linguistic complexity

For discussing the data, I adopt a number of notions from the work by Östen Dahl (2004) on linguistic complexity. From a theoretical point of view, these notions offer a rather neutral or descriptive framework, which enables one to formulate clear statements about the degree or type of complexity involved in the transition of HH to HO. The description of the notions is necessarily brief; for a detailed discussion of the notions, I refer to Dahl (2004).

First of all there is the overall notion of *system complexity*. Dahl regards the set of messages that can be expressed in the language under study as given and considers the complexity of the language seen as a system which maps these messages to expressions. One could also ask for the complexity of expressions in the language rather than that of the system. This brings us to the notion of *structural complexity*, a general term for complexity measures that pertain to the structure of expressions at some level of description. A further notion is the *length of derivational history*, that is, the number of steps necessary to generate the expression in a formal system. *Grammatical regulations* (usually called “rules”) often involve conceptual distinctions, e.g. “animacy”. *Conceptual complexity* is directly correlated to the length of the definition of a concept. In feature-based theories of semantics, a complex meaning would be one that corresponds to a large number of semantic features.

Further important notions are that of *choice structure* versus *output structure*. These notions are closely related to two “levels of grammar”, namely tectogrammatcs and phenogrammatcs:

- tectogrammatcs – the study of grammatical structure in itself.
- phenogrammatcs – how grammatical structure is represented in terms of expressions.

For instance, the expressions *two pound butter*, *two pounds butter* and *two pounds of butter* might be claimed to be different ways of realizing the same grammatical construction and thus differ only with respect to their phenogrammatcs. A *choice point* should correspond to a decision made by the speaker. Choice points may be *free* or *bound*. Free choice points relate to the tectogrammatcs, where bound choice points are part of the phenogrammatcs.

Linguistic pattern is used in a theoretically neutral way. Patterns, referred to as *linguistic objects*, may be of simple or complex types. Simple patterns would be words or morphemes. Complex patterns may consist of fixed parts only, such as a set of phrases. A slot in a pattern is a choice point. The term *construction* may be used for schematic patterns and *auxiliary pattern* for an element that helps build up an expression of another pattern but does not constitute an independent communicative choice. Auxiliary patterns may develop an identity of their own, by appearing in many different constructions. They would still belong to the

phenogramatics, however, representing bound rather than free choices on the part of the speaker.

Another important notion is that of *linearity*. If linearity does not play a role in the grammar of a language, i.e. there is a system of unrestricted concatenation, the language has zero phenogramatics, and hence zero complexity in this respect. The phenogramatical complexity of a language is then the extent to which it (or rather the grammar) deviates from a system of unrestricted concatenation. I will take this statement as the perspective from which I will discuss the differences between the data from HH and HO. Different types of deviations can be distinguished which I will refer to during the various discussions.

The examples to be discussed in this paper concerning different uses in HH opposed to HO all show a difference in terms of synthetic expressions versus analytic expressions. I also raise the question whether there is a degree in phenogramatical complexity between these synthetic and analytic expressions. Note that the opposite expressions in the comparison have the same context and are meant to convey the same grammatical aspects. Thus, in all cases, there is one choice structure but two output structures.

Table 1. Synthetic versus analytic expressions in Hungarian inside - outside Hungary.

| Section/type | Hungarian inside Hungary (synthetic) | Hungarian outside Hungary (analytic) |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 3.1 Modality | <i>Ki-me-het-ek?</i> out-go-MOD-1SG 'May I go out?' | <i>Ki tud-ok men-ni?</i> out be.able-1SG go-INF 'May I go out?' |
| 3.2 Reflexive | <i>Szépít-kez-ett</i> beautify-REFL-PAST.3SG.INDEF 'She beautified herself.' | <i>Szépít-ette magá-t</i> beautify-PAST.3SG.DEF oneself-ACC 'She beautified herself.' |
| 3.3 Causative | <i>Meg-rajzol-tat-ta</i> ASP-draw-CAUS-PAST.3SG.DEF <i>a szék-et.</i> the chair-ACC 'S/he had the chair designed.' | <i>Hagy-ta a szék-et</i> permit-PAST.3SG.DEF the chair-ACC <i>rajzol-ni.</i> draw-INF 'S/he had the chair designed.' |
| 3.4 Compounding | <i>tag-létszám</i> member-number 'number of members' | <i>tag-ok létszám-a</i> member-PL number-3SG.POSS 'number of members' |
| 3.5 Multiply derived form | <i>busz-oz-ás</i> Bus-VDER-NDER 'bus trip' | <i>utaz-ás busz-szal</i> travel-NDER bus-INSTR 'bus trip' |

3. Morphology

Where HH uses morphologically complex synthetic forms, all varieties of HO show a preference for morphologically simplex analytic forms (Table 1). Note that the preference for analytic forms applies in all three major components of morphology, i.e. inflection (modality), derivation (reflexive and causative), and compounding. The status of the different analytic expressions in this table is not always the same. The analytic forms may be available in HH as well, although used in a slightly different way. The opposite expressions may also have a different meaning. For a better understanding of the differences which hold between the synthetic expressions used in HH and the analytic forms preferred in the varieties of HO, I will discuss the data in more detail.

3.1 Modality

Instead of the suffix *-hat/-het* in HH, the free form *tud* ‘know, be able’ is considered more natural in most varieties of HO.² The analytic form also exists in HH, however, used in a more restricted way. Although both expressions relate to modality, they denote different modalities. The difference between the two modalities could be captured in the following terms. The form with *tud* is a “participant-oriented modality”, which concerns the relation between a participant in a situation and the potential realization of that situation. The form with *-hat/-het* is a “situation-oriented modality”, which concerns the objective assessment of the actuality status of the situation. Compare the following two forms from HH:

- (1) a. *Meg tud-om csinál-ni.*
ASP be.able-1SG make-INF
‘I can do it.’ (I am able to do it)
- b. *Meg-csinál-hat-om.*
ASP-make-MOD-1SG
‘I can do it.’ (Nothing prevents me from doing it.)

What we see in the varieties of Hungarian outside Hungary is that the construction with *tud* takes over the function of situation-oriented modality as in (1b). This kind of change is found more often in languages. English *will* had the function of “person-oriented modality in Old English” which developed via the function of “situation-oriented modality” into the “future tense” in Modern English (Foley and Van Valin 1984: 217). In fact, the change of grammatical operators, such as aspect, tense, and modality, into operators with wider scope seems to be universal (De Groot 1995: 42). The change of the use of *tud* in HO for both “person-oriented modality” and “situation-oriented modality” is thus in line with the universal picture of the historical change of operators in natural languages. The wider use of the

verb *tud* ‘know, be able’ as a modal verb in HO contributes to the process in which the lexical meaning of the verb is fading. Numerous examples in the languages of the world illustrate the development of lexical verbs into auxiliaries where the lexical verbs gradually lose their meaning. Again, the change in the use of verbs in periphrastic constructions attested in HO conforms to the typological development (cf. Bybee, Perkins and Pagliuga 1994; Olbertz 1998).

Let us now see whether there is a difference in phenogrammatical complexity between the synthetic and analytic expressions of modality, here repeated as (2).

| | | |
|-----|----------------------|--------------------------|
| (2) | HH | HO |
| | <i>Ki-me-het-ek?</i> | <i>Ki tud-ok men-ni?</i> |
| | out-go-MOD-1SG | out be.able-1SG go-INF |
| | ‘May I go out?’ | ‘May I go out?’ |

In order to arrive at the expressions, the speaker will use the following types of lexical and grammatical input.

| | | |
|-----|------------------------|-----------------------------------------------|
| (3) | Lexical element: | verb [<i>kime-/kimen-/kimegy-</i>] ‘go out’ |
| | Subject: | first person singular |
| | Grammatical operators: | modality; interrogativity |
| | Pragmatic context: | all new information |

Ki- ‘out’ is a preverbal element, which is separable from the stem. In this particular pragmatic context (see example 514 of the questionnaire in Section 1) the preverbal element *ki* ‘out’ takes the position immediately preceding the stem in the synthetic expression and the one immediately preceding the modal verb in the analytic expression. First person singular subject is expressed on the finite verb by means of a referential suffix. The grammatical operator of modality takes the form of a bound morpheme in the synthetic expression and the form of a verb in the other. In the latter case, the lexical element will take the form of the infinitive, which could be taken as an extra grammatical operation. The operator of interrogativity (YES/NO) triggers a sentence intonation contour with high pitch on the penultimate syllable and deep fall on the last syllable. The synthetic expression consists of four morphemes united in one word (*Ki-me-het-ek* [out-go-MOD-1SG]), whereas the analytic expression consists of five morphemes spread over three words, i.e. free phonological forms (*Ki tud-ok men-ni* [out be.able-1SG go-INF]). The concatenation of elements in both constructions is equally restricted, i.e. there is, given the context, no free variation. In the case of the analytic expression, permutations are possible but constrained by pragmatics; the different permutations correspond to different information structures.

Where does this bring us? There is not much difference between the two expressions at the first sight. Linearity is equally rigid and in terms of the number of morphosyntactic operations, the analytic expression requires one more operation than the synthetic expression: the formation of the infinitive. When we have a look at the patterns, we could measure complexity in terms of morphosyntactic units: morphemes within the domain of words and free phonological forms (words) within the domain of clauses. From this point of view there is a clear difference between the expressions; the synthetic expression contains more morphemes, whereas the analytic expression contains more words. Another aspect of patterns is that HO uses just one form, the analytic form, to express two different modalities. In terms of Dahl's (2004: 120f) *pattern regulations*, this instantiates a decrease in system complexity, because just one construction expresses two different modalities.

By way of summarizing the differences, consider (4), in which the synthetic expressions seem overall a bit more complex than the analytic ones.

| | | |
|------------------|----------------------|---------------------|
| (4) | HH | HO |
| | Synthetic expression | Analytic expression |
| Word structure | more complex | less complex |
| Clause structure | less complex | more complex |
| Linearity | complex | complex |
| Patterns | more complex | less complex |

In addition to this comparison there is a difference at the level of the tectogrammatrics. The choice structure for the analytic expression is richer than that for the synthetic expression. If a speaker wishes, for instance, to emphasize the modality or the action as a pragmatic focus in a contrastive setting, this would be possible in HO with analytic expressions, but not in HH. The expressions in HO would be (5): note the position of the preverbal element *ki* 'out' opposed to the expression in (2) as well as the order of constituents.

- (5) HO
- a. *Tud-ok ki-men-ni?*
 be.able-1SG out-go-INF
 'MAY I go out?'
- b. *Ki-men-ni tud-ok?*
 Out-go-INF be.able-1SG
 'May I GO OUT?'

From this it follows that a speaker of HO has in this respect more choice points, hence greater tectogrammatical complexity is involved.

On the basis of the data discussed here and their degree in various types of complexity, we may conclude that HH with synthetic expressions is morphologically more complex whereas HO is more complex in the domain of syntax. The same conclusion can *mutatis mutandis* be drawn on the basis of the other data of Table 1. Therefore, I will not discuss similar oppositions between expression from HH and HO in the following sections in the same detail.

3.2 Reflexive

Instead of the derived verbal reflexive with the suffix *-koz(ik)/-kez(ik)/-köz(ik)* in HH, the transitive verb form is more preferred in the different varieties of HO. The example from the questionnaire illustrating this in Table 1 is here repeated as (6).

- (6) HH *Szépít-kez-ett*
 beautify-REFL-PAST.3SG.INDEF
 ‘She beautified herself.’
 HO *Szépít-ette magá-t*
 beautify-PAST.3SG.DEF oneself-ACC
 ‘She beautified herself.’

Hungarian has a very rich system of derivational morphology, where a great number of the derivational relations involve a change in the valency of the verb (cf. De Groot 1989: ch.5). Among them, there are various examples of detransitivization, one of which is the verbal reflexive with the schematic pattern in (7):

- (7) Second argument reduction
 Input: Verb (x1) (x2)
 Output: Verb-SX (x1)

The detransitized pattern is used if the action performed by the agent applies to oneself. When we apply these patterns to the verb *borotvál* ‘shave’, we get the following picture, where (8b) is considered ungrammatical in standard Hungarian. Also note that the overt expression of an object in (8c) is ungrammatical, which clearly indicates that verbal reflexives are intransitives. Compare:

- (8) a. *A borbély borotválja Feri-t.*
 the barber shave Feri-ACC
 ‘The barber shaves Feri.’
 b. ?* *A borbély borotválja magá-t.*
 the barber shave himself-ACC
 ‘The barber shaves himself.’

- c. *A borbély borotvál-koz-ik (*magá-t)*
 the barber shave-DER-3SG (himself-ACC)
 ‘The barber shaves himself.’

It is relevant that the productivity of the formation of verbal reflexives is rather low. First of all it is very difficult, if not impossible, to give a clear description of the class of verbs which can serve as the input to the derivational rule, and second, many of the verbal reflexives have been lexicalized (De Groot 1989: 142). That may explain why *borotválkozik* ‘shave oneself’ does not allow a transitive counterpart with a reflexive object (cf. (8b)). Strictly speaking, *borotválja magát* is not ungrammatical nowadays in HH, but it is associated with intimate lady shaving. In other words, it has a newly created idiomatic interpretation, which does not naturally follow from the transitive reflexive form – the reason why example (8b) is marked as “ungrammatical”.

The class of transitive verbs that does not allow the formation of verbal reflexives remains transitive when used in a reflexive way. In those cases the object is specified by a reflexive pronoun:

- (9) HH
- a. *Nézi magát a tükör-ben.*
 See.3SG himself-ACC the mirror-INES
 ‘He sees himself in the mirror.’
- b. *Megvágtam magam-at.*
 ASP.cut.PAST.1SG myself-ACC
 ‘I cut myself.’

In other words, one class of verbs takes the derived intransitive pattern whereas another class of verbs takes the transitive pattern to express reflexivity in HH. In HO there is a preference to use just one pattern, namely the transitive pattern. This constitutes an example of *pattern regulation*; it instantiates a decrease in system complexity because just one pattern expresses reflexivity for all classes of verbs. Since many of the verbal reflexives are lexicalized, the use of the transitive form of those verbs in HO could be considered instances of “back-formation”. Under this view, the use of the transitive pattern in cases such as *szépíti magát* ‘beautify oneself’ constitutes one more step in the derivational history, namely that of back formation, which would then count as an increase of complexity.

In contrast to the expressions of reflexivity, where there are two patterns, an intransitive and a transitive pattern, there are other examples of derived intransitives which lack a transitive pattern as an alternative for other classes of verbs. In those cases, HO does not employ transitive patterns but uses the intransitive patterns like in HH. Consider the following examples where (10a) shows the basic transitive verb and (10b) the derived intransitive, an instance of “first argument (agent) reduction”. HH, which

lacks a passive construction comparable to English *The door has been closed by John*, does not offer an alternative transitive pattern in this case. Examples such as (10b) are used in both HH and HO.

- (10) HH
- a. *János bezárja az ajtó-t.*
 John close the door-ACC
 ‘John closes the door.’
- b. *Az ajtó bezár-ód-ik (*János által)*
 the door close-DER-3SG (John by)
 ‘The door closes.’

There is no generalization possible in terms of derived intransitives in HH taking the transitive pattern in HO; this would be an instance of a great decrease in complexity. HO uses the transitive pattern only in those cases where the pattern is available in HH.

In addition to the observations already made about complexity in the former section and this one, I would like to point at a difference between intransitive verbal reflexives and transitive forms which may express reflexivity. When the intransitive form is used, the specification of the subject suffices to express that the action performed applies to oneself. When using the transitive form, both the position of the subject and object must be specified in such a way that they refer to the same participant, for instance by co-indexation. Furthermore there will be some kind of agreement between the subject and the object. Compare the differences in (11).

- | | | |
|------|-----------------------|-----------------------------|
| (11) | HH | HO |
| | <i>Szépít-kez-em.</i> | <i>Szépít-em maga-m-at.</i> |
| | beautify-REFL-1SG | beautify-1SG self-1SG-ACC |
| | ‘I beautify myself.’ | ‘I beautify myself.’ |

We may conclude here that the analytic expression in HO is much more complex in terms of operations to achieve the appropriate expression.

3.3 Causative

Instead of the derived causative with the suffix *-tat/-tet* in HH, the periphrastic construction with the verb *hagy* is considered more natural in HO. The example from the questionnaire in Table 1 is here repeated as (12).

- | | | | |
|------|----|--------------------------------|-------------------|
| (12) | HH | <i>Meg-rajzol-tat-ta</i> | <i>a szék-et.</i> |
| | | ASP-draw-CAUS-PAST.3SG.DEF | the chair-ACC |
| | | ‘S/he had the chair designed.’ | |

HO *Hagy-ta a szék-et rajzol-ni.*
 permit-PAST.3SG.DEF the chair-ACC draw-INF
 ‘S/he had the chair designed.’

The verb *hagy* in Hungarian is a lexical verb with the meaning of ‘let, leave, allow, permit’. The vast majority of the use of *hagy* in HH is in the permissive sense. However, the causative application also arises, as can be seen in example (13c).

- (13) HH
- a. *Hagy-ta magá-t megcsókol-ni.*
 allow-PAST.3SG herself-ACC kiss-INF
 ‘She allowed her to be kissed. / She let him kiss her.’
 - b. *Hagy-juk a múlt-at.*
 let-1PL the past-ACC
 ‘Let bygones be bygones.’
 - c. *Hagy-ja a terv-et fejlőd-ni.*
 let-3SG the plan-ACC develop-INF
 ‘(S)he let design a plan.’

The preference of using the periphrastic causative construction in HO over the synthetic construction could be considered an overextension of the periphrastic form. The wider use of *hagy* contributes to the process of auxiliarization and is comparable to the fate of *tud* ‘know, be able’ as well as to many lexical verbs which are used in periphrastic constructions, namely that they gradually lose their lexical meaning. From the point of view of complexity, the use of just one analytic pattern expressing both a permissive and a causative, instantiates another case of a decrease in system complexity. On the other hand, the predicate structure in the analytic expression is much more complex than in the synthetic one. The verbal element *hagy* ‘let’ in causative constructions cannot be taken just as a supportive element functioning as a portmanteau for tense and person markers. Rather, the introduction of the element *hagy* ‘let’ must be the result of a causative formation rule. One may wonder whether the element *hagy* ‘let’ will keep its own predicate structure or whether it will combine with the lexical verb into some kind of complex predicate. The causative formation in HH is a rule which implies argument extension: the extra argument has the function of Agent/Causer. In HO two verbal predicates are combined into one frame, where one predicate fills the patient argument position of *hagy* ‘let’. The rules are schematically described in (14) and (15):

- (14) HH
 Input: *rajzol* (Agent) (Patient)
 Output: *rajzoltat* (Agent/Causer) (Agent/Causee) (Patient)

- (15) HO
 Input: *rajzol* (Agent) (Patient)
 hagy (Agent) (Patient)
 Output: *hagy* (Agent/Causer)
 (*rajzol* (Agent/Causee) (Patient))

I conclude that the output of the causative formation in (15) is more complex than the one in (14).

3.4 Compounding

Instead of using compounds consisting of two nouns as in HH, there is a strong preference for the HO varieties to use disjunct expressions. The disjunct expressions come in different forms. There are two basic strategies: (a) the modifying noun, i.e. the first noun in the compound receives an attributive marker, and (b) the creation of a possessive construction. The examples in (16) are illustrations of the first strategy.

- | | | |
|------|-------------------------------------------------|----------------------------------------------------------|
| (16) | HH | HO |
| a. | <i>lég-tér</i> air-space 'air-space' | <i>légi tér</i> air-ATTR space 'air-space' |
| b. | <i>virág-láda</i> flower-box 'flower box' | <i>virág-os doboz</i> flower-ATTR box 'flower box' |

The two expressions with the attributive markers in (16) count as non-standard or even ungrammatical in HH. Constructions with the attributive markers themselves, however, do occur very frequently in Hungarian, as for instance in (17):

- | | |
|------|----------------------------------------------------------------------------------|
| (17) | HH |
| a. | <i>a tavasz-i fesztivál</i> the spring-ATTR festival 'the spring festival' |
| b. | <i>az erkély-es ház</i> the balcony-ATTR house 'the balconied house' |

Moreover, in other constructions than those in (16), the attributive forms *légi* and *virágos* may arise in HH, as in (18). For reasons I do not know, expressions such as those of HO in (16) are not conceived as grammatical in standard Hungarian, whereas those in (18) are.

- (18) HH
- a. *lég-i forgalom*
 air-ATTR traffic
 ‘air traffic’
- b. *virág-os függöny*
 flower-ATTR curtain
 ‘flowered curtain’

The following example illustrates that compounds which consist of an adjective and a noun in HH may also have disjunctive counterparts in HO. Interestingly, the adjectival form – here the present participle *szolgáltató* – which does not allow the attributive marker *-i*, has been substituted by the related form, the nominalization *szolgáltatás*, which does allow the marker *-i*:

- | | | | | |
|------|----------------------------------------------------------------------------------|--|---------------------------------------------------------------------|--|
| (19) | HH | | HO | |
| | <i>szolgáltatóház</i> | | <i>szolgáltatási ház</i> | |
| | [[[szolgáltató] _V -ó] _A -[ház] _N] _N | | [[[szolgáltató] _V -ás] _N -i] _V ház | |
| | serve-DER-house | | serve-DER-ATTR house | |
| | ‘service house’ | | ‘service house’ | |

Note that a similar opposition can be found in HH as well, as can be seen in example (20). This indicates that the preferred expression in HO does not take a newly created pattern but is based on a pattern available in HH.

- (20) HH
- | | | |
|--------------------------|-----|-----------------------|
| <i>bevásárló-központ</i> | vs. | <i>vásárlás-i láz</i> |
| shopping-centre | | shopping-ATTR fever |
| ‘shopping centre’ | | ‘shopping boom’ |

At this point, it can be concluded that the analytic constructions in strategy (a) (the modifying noun), which are favoured in HO, can all be found in HH as well. The meaning, however, can be different in HO and HH. The patterns could act as a model for the use of the analytic forms. Instead of using two patterns, i.e. a compound and an attributive noun construction as in HH, HO uses just one pattern, hence another case of a decrease in system complexity.

One remark on the expression with the attributive marker *-i*. I have argued elsewhere that expressions with the marker *-i* are based on a morphosyntactic template, readily made available in the grammar of Hungarian. The template has the form of $[[X]-i N]$, where X accommodates other elements than adjectives such as nouns, but also postpositions or even a postpositional phrases (see De Groot (2005b) for a full specification and De Groot (1990) for typological principles underlying the patterns). In

Dahl's (2004) terminology, this template could be considered an *auxiliary pattern* that helps build up an expression of another pattern but does not constitute an independent communicative choice. In this case, the output is a phrase with the function of an attribute. Such templates or patterns may be ideal vehicles for certain transitions from HH to HO. It does not seem, however, that the pattern is used extensively in HO. I return to this matter in Section 4.

The second strategy as an alternative disjunct expression for a compound is the possessive construction. Compare the different forms in (21).

| | | |
|------|------------------------------------------------------------|-----------------------------------------------------------------------------|
| (21) | HH | HO |
| a. | <i>tag-létszám</i> member-number 'number of members' | <i>tag-ok létszám-a</i> member-PL number-3SG.POSS 'number of members' |
| b. | <i>nő-nap</i> woman-day 'Woman's Day' | <i>nő-k nap-ja</i> woman-PL day-3SG.POSS 'Women's Day' |

The two disjunct expressions in (21) with the meanings 'number of members' and 'Woman's Day', respectively, are not used in HH. However, the disjunct structure used in HO is an existing structure in HH as (22) illustrates.

| | |
|------|-------------------------------------------------------------------------------------------------------------------|
| (22) | HH |
| | <i>a tag-ok egyesület-i nyakkendő-je</i> the member-PL club-ATTR tie-3SG.POSS 'the club-tie of the members' |

It is of particular interest that nouns which are used to form compounds in Hungarian cannot take the plural form, unlike e.g. Dutch, contrasted in (23).

| | | |
|------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| (23) | Dutch | Hungarian |
| | <i>huizenblok</i> [[huiz-en]-[blok]] house-PL-block 'block of houses' | <i>háztömb *házaktömb</i> [[ház]-[tömb]] [[ház-ak]-[tömb]] house-block house-PL-block 'block of houses' |

The difference between the types of compounds as in Dutch opposed to Hungarian can be explained on the basis of the types of nouns the languages have. An NP headed by a *bare* noun must refer to a single individual in Dutch: when reference is made to more than one individual object, the noun must be suffixed with a plural marker. Rijkhoff (2002) calls such nouns (typically found in the Indo-European languages) *singular object nouns*.

Hungarian, on the other hand, has nouns that denote a set of individuals. These are called *set nouns*. A set can have any cardinality: it may contain just one individual or it may consist of more individuals. A property of *set noun* languages is that they lack a plural but instead they may have a collective form (Rijkhoff 2002: 51). The marker *-k* in Hungarian is therefore considered a collective marker rather than a plural marker. De Groot (2005a) argues that, due to language contact, HO develops from a *set noun*-type language into a *singular object noun*-type language. This accounts for several phenomena in HO because they are properties of *singular object noun* languages: the plural marking of nouns after a numeral, the use of plural form of the noun in certain other cases, and plural agreement with the verb in a number of cases. This insight might tell us something about the preference in HO to use the disjunct form such as *tagok létszáma* (members number of) instead of the compound *tag-létszám* (member-number). Since nouns in HO denote more and more single entities instead of sets, the urge of using the plural form of the first noun in compounds of the type [member-s number] forces the speaker to use the disjunct expression which allows the use of the plural but which are not allowed by compounds. Evidence from The Hungarian National Corpus supports this view, exhibiting the following matches:³

Table 2. Change of HH – set noun type – into HO – singular object noun type.

| | Hungarian inside Hungary Set noun type | Hungarian outside Hungary Singular object noun type |
|--------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| numeral + N | <i>két könyv</i> two book 'two books' | <i>két könyv-ek</i> two book-PL 'two books' |
| Number discord vs. concord | <i>Három fiú sétál.</i> three boy walk.3SG 'Three boys walk.' | <i>Három fiú-k sétál-nak</i> three boy-PL walk-3PL 'Three boys walk.' |
| | <i>Mari és Péter sétál.</i> Mary and Peter walk.3SG 'Mary and Peter walk.' | <i>Mari és Péter sétál-nak.</i> Mary and Peter walk.3PL 'Mary and Peter walk.' |
| set vs. individual | <i>János almá-t vett.</i> John apple-ACC bought 'John bought apples.' | <i>János almá-k-at vett.</i> John apple-PL-ACC bought 'John bought apples.' |
| | <i>Fáj a láb-am.</i> ache.3SG the leg-POSS.1SG 'My legs are aching.' | <i>Fáj-nak a láb-ai-m.</i> ache.3PL the leg-PL-POSS.1SG 'My legs are aching.' |
| compound (set) vs. possessive (individual) | <i>tag-létszám</i> member-number 'number of members' | <i>tag-ok létszám-a</i> member-PL number-3SG.POSS 'number of members' |

- (24) a. 172 times taglétszám [member-number]
 b. 8 times tagok létszáma [members number-of]
 c. 0 times tag létszáma [member number-of]

The data in (24) shows that in those cases where the compound is split up into two parts, the first member is marked by the plural.⁴ No instances were found where the first part of the possessive alternative was used in the singular, i.e. as a set noun. The use of the possessive construction instead of the compound could then also be considered a result of the change of HH, a set noun type language, into HO, a singular object noun type language. Table 2 summarizes the changes from HH to HO, which all follow from the typological change of HH to HO.⁵

What does the data in Table 2 tell us about complexity? Firstly, all constructions in HO show more structural complexity than the forms in HH, notably the use of the plural. Secondly, there is a change in *Seinsart* from *set* to *singular object*. It would be interesting to know whether there is a difference in complexity between the concepts of *set* versus *singular object*. If there was a difference, it would be a difference in conceptual complexity. Rijkhoff (2002) does not characterize *set* and *singular object* in terms of different sets of features, parameter setting, or alike. There are, however, some clues which point at *singular object* being conceptually more complex than *set*: firstly, *singular object* is characterized in terms of [numeral + noun + plural], whereas *set* as [numeral + noun], which consists of two elements and not three; and secondly, from a cross-linguistic perspective number marking seems to be the exception rather than the rule (Rijkhoff 2002: 38). On the basis of these two observations concerning the use of the plural, i.e. one more morpheme per construction, and marked from a typological perspective, I suggest that *singular object* as a *Seinsart* is conceptually more complex than *set*.

3.5 Multiply derived forms

The last example in Table 1 presents another relevant observation. This has to do with the length of derivational history. Compare the data in (25), here repeated from Table 1.⁶

- | | | | |
|------|-----------------------------------------------------------|----------------------------------------|------------------|
| (25) | HH | HO | |
| | <i>buszozás</i> | <i>utazás</i> | <i>busz-szal</i> |
| | [[[busz] _{N-OZ}] _{V-ÁS}] _N | [[utaz] _{V-ÁS}] _N | busz-szal |
| | bus-VDER-NDER | travel-NDER | bus-INSTR |
| | ‘bus trip’ | ‘bus trip’ | |

Example (25) illustrates that there is a preference in HO for complex derived words to be replaced by forms consisting of smaller or less complex units. The form in HH is a nominalization of a denominal verb, whereas the

form in HO is a nominalization followed by a specifying element marked by the instrumental case. The form in HH contains just one lexical element, but the form in HO contains two. Note that the expression used in HO is not available in standard Hungarian. I will return to this matter in Section 4.

There is more evidence that multiply derived forms in Hungarian are complex indeed. Recursiveness in the formation of words is quite possible in Hungarian, as for instance in the following form, which contains four derivational suffixes:

- (26) tart_V -ós_A -ít_V -ható_A -ság_N
 keep | durable | conserve | conservable | conservability

However, there are many instances where derivational rules in Hungarian only allow non-derived words as their input:

- (27) a. Adjective → One-place inchoative verb
 [meleg]_A ‘warm’ → [[meleg]_A-edik]_V ‘get warm’
 [[tart]_V-ós]_A ‘durable’ → ∅
- b. Two-place agentive verb → One-place process verb
 [húz]_V ‘draw’ → [[húz]_V-ódik]_V ‘draw’
 [[[tart]_V-ós]_A-ít]_V ‘conserve’ → ∅

The status of a lexical item in Hungarian as derived may block derivational processes (De Groot 1989: 163). Similar phenomena, i.e. that derived forms behave differently – also in the field of inflectional morphology – are found in other languages as well. This does not imply, however, that certain derived forms are excluded from derivational processes in all cases. An example that illustrates this is (28), in which the derived form *tartós* ‘durable’ may form the input of a derivational rule in (28b) but not in (28a):

- (28) a. Adjective → One-place inchoative verb
 [[tart]_V-ós]_A ‘durable’ → ∅
- b. Adjective → Transitive verb
 [[tart]_V-ós]_A ‘durable’ → [[[tart]_V-ós]_A-ít]_V ‘conserve’

Rules which account for the correct derivation of new forms, such as those in (27), will be specified in a certain way to prevent the expectation of derived forms as their input, whereas other rules do not need such specification, as for instance (28b).

From the discussion in this section it can be concluded that derived forms are more complex than non-derived forms, because of their length of derivational history (Dahl 2004: 44). Grammatical rules may also be sensitive to the forms being derived, which could be taken to increase

system complexity. In these respects, derivation in HH is more complex than in HO.

4. Syntax

The only syntactic issue I raise here concerns the preference of certain post-nominal modification in the varieties of Hungarian outside Hungary. In example (25) we saw that in HO a syntactic expression arises which does not exist in HH. Another similar expression occurs in HO, which I will discuss in more detail in this section.

In equivalence to the English phrases *the picture on the wall* or *the letter from Mary* standard Hungarian employs non-finite pre-nominal constructions to express the modification of the nominal head (29):

- (29) *a fal-on levő kép*
 the wall-SUP COP.PRES.PART picture
 ‘the picture on the wall’ [lit. ‘the on the wall being picture’]

Examples such as (29) pattern along with non-finite participle constructions, as in (30):

- (30) *az éneklő lány*
 the sing.PRES.PART girl
 ‘the singing girl’

Constructions like (29) and (30) can be taken to be non-finite relative constructions (cf. De Groot 1989: 191). They both have finite counterparts, which take the form of finite relative constructions, as shown in (31).

- (31) a. *a kép, amely a fal-on van*
 the picture REL the wall-SUP COP.3SG
 ‘the picture which is on the wall’
 b. *a lány, aki énekel*
 the girl REL sing.3SG
 ‘the girl who sings’

When we look at data from the varieties of Hungarian outside Hungary, we see a preference for using another construction which widely differs from the one in standard Hungarian. Instead of a non-finite pre-nominal relative construction, we find a post-nominal adpositional phrase, as in (32).

- (36) HH
 * *a fal-on-i kép*
 the wall-SUP-ATTR picture
 ‘the picture on the wall’

What we see in the varieties of HO is that expressions such as (36) do not occur either. The varieties in HO could have made use of the auxiliary pattern available, but they did not, apparently because they are ungrammatical in HH. Instead they employed a pattern which in standard Hungarian is highly disfavoured if not available at all.⁷

5. Language change by contact

The way in which Hungarian outside Hungary changes looks very much like what happens in many other instances of language change by language contact as brought forward by Heine and Kuteva (2005). In their model of replicating use patterns, grammatical replication has the effect that the replica language (HO) acquires some new structures (HOx) on the model of another language (contact language). The new structure (HOx) is in most cases not entirely new; rather, it is built on some structure (HHy) that already existed in the replica language, and what replica then achieves is that it transforms (HHy) into (HOx). Many of the changes follow this pattern indeed, as:

- (37) a. intransitive verbal reflexives → transitive reflexives
 b. synthetic modality → analytic modality
 c. synthetic causative → analytic causative
 d. compounds → disjunct structures

There is one case which does not follow this pattern, because the new adopted pattern is not available in the replica language, namely post-nominal modification. Here it must be postulated that the new adopted structure is a direct borrowing from the contact language.

The motivation for adopting new patterns in HO cannot always be directly related to the use of certain patterns in the contact languages. Many of the contact languages do have intransitive verbal reflexives, yet the transitive counterpart is favoured in HO. One may argue that compounds are disfavoured in the varieties of HO because most of the contact languages do not have compounds. It has, however, been shown that the typological change from *set* to *singular object* causes the use of disjunct structures where HH employs compounds. Moreover, in the variety of Hungarian spoken in Austria, the compound also disappears, while the formation of compounds in German is very, very productive. Like Dutch, German is a

singular object noun -type language which allows compounds where the first member is marked by the plural as in *Häuserblock* [[house.PL]block] ‘block of houses’. The variety of Hungarian spoken in Austria could also take over this structure, but it does not. Apparently the “decisions” made in the change from HH to HO are the following. Being a *singular object noun* -type language, the formation of a compound of the type [N.PL+N] would be theoretically possible in HO. HH, however, does not offer a use pattern of this type but some other pattern, namely that of a possessive construction of the type [N.PL N.POSS]. German does have the use pattern of [N.PL+N]. Instead of adopting the pattern from German, the HO variety in Austria adopts a use pattern from HH. This reinforces the claim by Heine and Kuteva (2005) as described above, that the new expression is built on some structure that already existed in the replica language.

6. Typology

6.1 Morphological complexity as a parameter

A generally expected view on morphological change, as for instance represented by Hock and Joseph (1996: 183), is the following:

The fate of morphology from Sanskrit to its modern descendants gives credence to the common belief that languages tend to develop in cycles: from isolating to agglutinating, from agglutinating to inflectional (through amalgamation of different affixes into one), from inflectional to isolating (through sound change and analogy), and so on.

This may be expressed schematically as:

(38) agglutinating → inflectional → isolating

When we consider the varieties of Hungarian outside Hungary, these varieties still contain all morphological properties of an agglutinating language (cf. *szépítette*, *széket*, and *létszáma* in Table 1). The change from HH to HO then does not follow the chain of gradual changes in (38) as attested in many languages in their individual development, or induced by language contact (cf. Heine and Kuteva 2005: 164). It rather is a change from morphologically complex to morphologically simplex, i.e. from an agglutinating language with highly morphemic words to an agglutinating language with less morphemic words. There are actually some examples of the change of Hungarian as a contact language which follow the development as given in (38). These are e.g. the loss of object agreement

and possessive markers in Hungarian in the United States (Fenyvesi 2005). Note, however, that these markers are at the periphery of words.

If we take morphological complexity to be a typological parameter, the following subtypes should be distinguished:

- (39) Complex → Simplex
a. many morphemes per word → few morphemes per word
b. more lexemes per word → fewer lexemes per word

An illustration of (39a) is provided by examples (40) and (41), which show that the forms in HH are more morphematic than the preferred forms in equivalent expressions in HO.

- | | | | |
|------|--------------------------|--|----------------------------------|
| (40) | HH | | HO |
| | <i>rajzol-tat-t-a</i> | | <i>hagy-t-a</i> <i>rajzol-ni</i> |
| | 1 2 3 4 | | 1 2 3 1 2 |
| | draw-CAUS-PAST-3SG | | let-PAST-3SG draw-INF |
| | ‘(S)he had it designed.’ | | ‘(S)he had it designed.’ |
| (41) | HH | | HO |
| | <i>busz-oz-ás</i> | | <i>utaz-ás</i> <i>busz-szal</i> |
| | 1 2 3 | | 1 2 1 2 |
| | bus-VDER-NDER | | travel-NDER bus-INSTR |
| | ‘bus trip’ | | ‘bus trip’ |

An illustration of (39b) is example (42) which shows that compounds in HH, consisting of two lexemes, have counterparts in HO where the two lexemes form the basis of two words.

- | | | | |
|------|---------------------|--|--------------------------------|
| (42) | HH | | HO |
| | <i>tag-létszám</i> | | <i>tag-ok</i> <i>létszám-a</i> |
| | 1 2 | | 1 1 |
| | member-number | | member-PL number-3SG.POSS |
| | ‘number of members’ | | ‘number of members’ |

Given the systematic differences between HH and HO, the varieties of Hungarian outside Hungary could be considered to have a morphological profile (cf. Heine and Kuteva 2005: 153) other than that of Standard Hungarian. The profiles are not absolute but relative in the sense that the morphological profile of HO can be characterized as simpler than that of HH. A counter-example to this idea – the use of the plural in HO – will be discussed in the next section.

6.2 Rivalry between parameters

In Section 3.4, we saw that HO uses the plural in various cases where HH uses the bare noun (see Table 2), for instance *két könyv* (HH two book) versus *két könyv-ek* (HO two book-PL). These facts contradict the typological parameter of morphological complexity as presented in the previous section. That parameter predicts that forms in HO will likely have fewer morphemes than their counterparts in HH. In the case of plural it is just the opposite. We must conclude that the parameter which causes the introduction of the plural is more powerful than the parameter of morphological complexity. The stronger parameter here is that of *Seinsart*. The change from HH as a *set noun type* language to HO as a *singular object type* language causes the introduction. The *Seinsart* of a language may be considered a relatively deep property of the language, because it affects a substantial part of the grammar of a language. On the basis of these observations I would like to suggest that *Seinsart* belongs to the tectogramatics of a language and the morphological complexity to the phenogramatics. If this is correct, it explains on the one hand why *Seinsart* as a parameter is stronger than morphological complexity, and on the other hand why exceptions to the parameter of morphological complexity may arise.

6.3 Chicken or egg: Post-nominal modification in HO

As for the one syntactic parameter discussed, I argued in De Groot (2005a) that copula support in HH is sensitive to the hierarchy in (43) (from Hengeveld 1992). The hierarchy tells us that HH employs a copula in relational non-verbal expressions (*John is in the garden*) but not in referential (*John [is] the postman*) or bare (*John [is] young*) non-verbal expressions. The notation // indicates the cut-off point in the hierarchy.

- (43) Copula support in non-verbal expressions HH
Finite constructions: Bare > Referential // Relational
Non-finite constructions: Bare > Referential // Relational

The use of copula in the Hungarian varieties outside Hungary shows a different picture. The use of the copula in non-finite embedded relational constructions is no longer favoured. The following opposition holds between HH and HO:

- (44) HH *a fal-on levő kép*
 the wall-SUP COP.PRES.PART picture
 ‘the picture on the wall’ [lit. ‘the on the wall being picture’]

HO *a k ep a fal-on*
 the picture the wall-SUP
 ‘the picture on the wall’

The tendency to use constructions without a copula in embedded constructions in HO suggests that the cut-off point for copula support in embedded non-finite constructions in HO moves from before Relational to after Relational. Consider the following hierarchies:

- (45) Copula support in HO
 Finite constructions: Bare > Referential // Relational
 Non-finite constructions: Bare > Referential > Relational //

Typological studies on language variation based on hierarchies clearly indicate that variation is typically found at the cut-off points in hierarchies (Dik 1997). This now also holds for the variation in the use of a copula in HO. In other words, the change in the use of the copula between HH and HO clearly follows typological principles. There is, however, no intrinsic motivation for the cut-off point to move; but when we take the change in the position of the modifiers from pre-nominal to post-nominal as a starting point, then there is. First, non-finite relative constructions in post-nominal positions are rare. Note that relative constructions in languages with basic SOV word order can take two positions in the noun phrase, before or after the nominal head. The position is almost without exception conditioned by the nature of the relative clause, being non-finite or finite. Non-finite relative clauses precede the head, whereas finite relative clauses follow the head. The deletion of the non-finite copula form in post-nominal constructions avoids the anomaly. A movement of one category to the right on the hierarchy facilitates the deletion. The motivation to use post-nominal modification must come from the contact languages: these languages do not employ pre-nominal non-finite relative clauses. The explanation presented here opposes the view defended in De Groot (2005a) that the change in cut-off point accounts for all aspects, i.e. the deletion of the copula and the change of position of the modifier. The syntactic change is taken to be prior to the deletion of the copula in this paper now.

In terms of complexity, the copula deletion decreases syntactic complexity (structural complexity) but increases morphological complexity if we take zero marking to be more complex than overt marking (cf. Lefebvre 2001; Aboh and Ansaldo 2006). Moreover the move of the cut-off point in the hierarchy of non-finite constructions increases system complexity due to the asymmetry with the hierarchy of finite constructions. However, there seems to be a slight decrease in complexity because the copula deletion may be interpreted as avoiding an anomalous construction and one which is structurally more complex than is typically found in verb-final languages.

7. Conclusions

This paper shows that speakers of Hungarian inside Hungary express their messages differently from speakers of Hungarian outside Hungary. The most striking difference is that where HH uses synthetic expressions, HO uses analytic expressions in many of these cases. The analytic expressions are mostly based on patterns available in HH. In order to accommodate these expressions, the use of certain patterns is extended by way of overgeneralization, or by hosting more than one expression. In terms of linguistic complexity, the variants of HO thus seem less complex than HH. HO is morphologically less complex and it uses fewer patterns for moulding its expressions, which can be taken as a decrease in system complexity. Opposed to the decrease, there is, however, such a substantial increase in system complexity that the variants of HO have to be considered more complex than HH. The increase of complexity is located in several domains: (1) analytic expressions are subject to various rules concerning linearity, (2) periphrastic expressions are mainly built on complex verbs or verbal clusters, and (3) various alternative expressions require extra operations to account for phenomena relating to agreement, co-indexation of referents in reflexive and possessive constructions, or marking dependent relations.

For languages in contact to become linguistically more complex has been observed by several linguists, notably Nichols (1992: 193). She argues that contact among languages foster complexity, in particular in those cases when there is a long-term language contact involving child-language acquisition. The variants of HO belong to this group and the data and analyses presented in this paper confirm the observation that languages in contact become linguistically more complex.

On the relation between typology, language change by contact, and complexity, some interesting conclusions can be drawn. Firstly, HO takes over a deep typological property of the contact languages, namely the *Seinsart* of *singular object noun* type, which as a type is rather rare among the languages of the world. Secondly, morphological complexity can be considered a relevant parameter in language contact. The parameter mainly relates to surface phenomena, i.e. the number of morphemes and how they are attached to each other. Deeper properties can easily overrule constraints on morphological complexity, such as *Seinsart* which for instance introduces the use of the plural in HO. On the basis of these observations I suggest to consider *Seinsart* as belonging to the tectogrammatology of a language and morphological complexity to the phenogrammatology. Thirdly, due to a change from synthetic to analytic way of expressing, language becomes more open to syntactic rules. Note that HO did not lose many inflectional or derivational rules. The application of modal operators or the formation of causative constructions is still there. The expression, however, is analytic and not synthetic. Fourthly, “pattern” plays an important role as an intermediate factor in language change and system regulation. Under

different names the following notions of pattern come together: “use pattern” in language contact (Heine and Kuteva 2005), “linguistic and auxiliary pattern” in linguistic complexity (Dahl 2004), and “morphosyntactic template” in linguistic typology (De Groot 1990, 2005b).

Abbreviations

| | |
|-------|----------------------------|
| A | adjective |
| ACC | accusative |
| ASP | aspect |
| ATTR | attributive marker |
| CAUS | causative |
| COP | copula |
| DEF | definite conjugation |
| DER | derivational affix |
| INDEF | indefinite conjugation |
| INES | inessive |
| INF | infinitive |
| INSTR | instrument |
| MOD | modality |
| N | noun |
| NDER | nominal derivational affix |
| PART | participle |
| PAST | past tense |
| PL | plural |
| POSS | possessive |
| PRES | present |
| REFL | reflexive |
| REL | relative |
| SG | singular |
| SUP | superessive |
| SX | suffix |
| VDER | verbal derivational affix |
| V | verb |

Notes

1. Vojvodina and Prekmurje are two different regions of the former Yugoslavia. These two regions are now found in separate states namely in Serbia and Montenegro and in Slovenia.

2. The choice of the suffix, having a back or front vowel, is determined by vowel harmony. The suffix will take the form of *-hat* when attached to a verbal stem with a back vowel, such as *lát-hat* (see-MOD) ‘may see’. Following the convention of Hungarian grammarians, I will mention all different forms when referring to just one suffix.
3. At the time of consulting, the corpus consisted of 187,644,886 words from Hungary, Slovakia, Subcarpathia, Transylvania, Vojvodina, note the sources from both HH and HO. The corpus is available at http://corpus.nytud.hu/mnsz/index_eng.html.
4. The context in which one of the examples is presented reveals that the example originates from a scientific text included in the Hungarian National Corpus discussing morphological differences found in HH and HO. One of the differences mentioned in the article is *taglétszám* vs. *tagok létszáma*.
5. De Groot (2005a) mentions the first three examples. The compound is here added as a fourth example of language change due to a typological change.
6. According to the rules of Hungarian orthography and word segmentation, the geminate in the form *busszal* is presented in the following way: *busz-szal*. Double *szsz* is reduced to *ssz* in actual writing, but not in speech.
7. Post-nominal modification can actually also be found in standard Hungarian, particularly in names of articles or poems, as e.g. M. Radnóti’s poem *Levél a hitveshez* ‘Letter to the spouse’. Purists dislike them because of their association with German influence.

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