The Hungarian Verb and Constraints on Grammatically-Conditioned Allomorphy (NELS 41)

Jana E. Beck

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Goal:

- **Problem:** Allomorphs in the person/number (p/n) agreement pattern of Hungarian verbal morphology that have difficult-to-state, non-unique, non-default distributions.
- **Solution:** Restrict the form of Vocabulary Items (VIs) governing the insertion of allomorphs in particular grammatical contexts.

Structure of the Argument

1. Discuss a previous approach—the No Blur Principle (NBP) of Carstairs-McCarthy[1]—to explaining the distribution of grammatically-conditioned allomorphs
2. Show how the patterns captured by the previous approach can be captured by restricting the form of VIs within the framework of Distributed Morphology[2]
3. Show how Hungarian is a robust counterexample to the NBP

[1] Carstairs-McCarthy (1994, 1998); Cameron-Faulkner and Carstairs-McCarthy (2000); Carstairs-McCarthy (2001)

[2] Halle and Marantz (1993), among others.

A Restriction on Vocabulary Items (VIs):

- The conditioning environment cannot be a disjunction of grammatical features.

The No Blur Principle

- A popular approach to formulating the restrictions on allomorphy is to restrict the distributions of allomorphs across morphological paradigms.
- One example is the No Blur Principle (NBP) of Carstairs-McCarthy[3], according to which an allomorph can take on only one of two roles:
  1. **identifier:** an identifier allomorph uniquely identifies the context in which it occurs
  2. **default:** found in all contexts in which an identifier is not found

[3]Carstairs-McCarthy (1994, 1998); Cameron-Faulkner and Carstairs-McCarthy (2000); Carstairs-McCarthy (2001)

Latin Active Verb Forms[4]

P/N	Pres.	Imperf.	Fut.	Perf.	Pluperf.	Fut. Perf.	Subj.
1S	-o:	-(i)m	-o:	-i:	-(i)m	-o:	-(i)m
2S	-(i)s	-(i)s	-(i)s	-isti:	-(i)s	-(i)s	-(i)s
3S	-(i)t	-(i)t	-(i)t	-(i)t	-(i)t	-(i)t	-(i)t
1P	-(i)mus	-(i)mus	-(i)mus	-(i)mus	-(i)mus	-(i)mus	-(i)mus
2P	-(i)tis	-(i)tis	-(i)tis	-istis	-(i)tis	-(i)tis	-(i)tis
3P	-(u)nt	-(u)nt	-(u)nt	-e:re	-(u)nt	-(u)nt	-(u)nt

Table 1: P/N Agreement in Latin Active Verb Forms

[4]Here and throughout, I'm ignoring the alternative ending -e(:)runt in the 3P perfect active due to space and layout considerations.

Latin Active Verb Forms, Organized by 'Shape'

P/N	Pres.	Imperf.	Fut.	Perf.	Pluperf.	Fut. Perf.	Subj.
1S	**-o:**	-(i)m	**-o:**	-I:	-(i)m	**-o:**	-(i)m
2S	**-(i)s**	-(i)s	**-(i)s**	-ISTI:	-(i)s	**-(i)s**	-(i)s
3S	**-(i)t**	-(i)t	**-(i)t**	-(I)T	-(i)t	**-(i)t**	-(i)t
1P	**-(i)mus**	-(i)mus	**-(i)mus**	-(I)MUS	-(i)mus	**-(i)mus**	-(i)mus
2P	**-(i)tis**	-(i)tis	**-(i)tis**	-ISTIS	-(i)tis	**-(i)tis**	-(i)tis
3P	**-(u)nt**	-(u)nt	**-(u)nt**	-E:RE	-(u)nt	**-(u)nt**	-(u)nt

Table 2: P/N Agreement in Latin Active Verb Forms, Organized by 'Shape'

Latin and the NBP[5]

- **identifier allomorphs** in boldface
- default allomorphs in normal type

P/N	Perfect i-shape	Default m-shape	Non-Past o-shape
1S	**-i:**	**-(i)m**	**-o:**
2S	**-isti:**	-(i)s	-(i)s
3S	-(i)t	-(i)t	-(i)t
1P	-(i)mus	-(i)mus	-(i)mus
2P	**-istis**	-(i)tis	-(i)tis
3P	**-e:re**	-(u)nt	-(u)nt

Table 3: Identifier and Default Allomorphs in Latin Active Verb Forms

[5]Given in Carstairs-McCarthy (2001, p. 236), although I have added the labels 'Perfect,' 'Default,' and 'Non-Past' to the three "shapes."

"pseudo-Latin" (1)

- Embick (2010) explains the absence of *-isti:* in the other tenses and moods of the Latin perfect system as a case of Linear Intervention since an overt tense morpheme intervenes between the [Perf] node and the context-sensitive *-isti:* morpheme.
- But Carstairs-McCarthy also imagines the case of "pseudo-Latin" (Table 4, next slide) in which *-isti:* marks 2nd person singular agreement in an additional paradigm that otherwise contains only the default person/number agreement allomorphs.

"pseudo-Latin" (2)

P/N	Perfect i-shape	Default m-shape	Non-Past o-shape	Optative x-shape
1S	**-i:**	**-(i)m**	-o:	-o:
2S	-ISTI:	-(i)s	-(i)s	-ISTI:
3S	-(i)t	-(i)t	-(i)t	-(i)t
1P	-(i)mus	-(i)mus	-(i)mus	-(i)mus
2P	**-istis**	-(i)tis	-(i)tis	-(i)tis
3P	**-e:re, -e(:)runt**	-(u)nt	-(u)nt	-(u)nt

Table 4: Identifier and Default Allomorphs in "pseudo-Latin" Verb Forms (SMALL CAPS indicate "blurred" morphemes)

"pseudo-Latin" (3)

- Carstairs-McCarthy argues that this type of *unattested* case is ruled out by the NBP.
- Since I will show that the NBP counterfactually rules out the observed pattern of agreement morphology in the Hungarian verbal system, I argue that the pseudo-Latin case should instead be ruled out by restricting the formulation of conditioning contexts in VIs.

Restrictions on VIs

I rule out VIs of the form in (1) by:

- excluding grammatical contexts containing a disjunction of features—e.g., {Asp[PERF], Mood[OPT]} for adjacency to an aspect node containing the feature [PERF] or a mood node containing the feature [OPT]

(1) AgrS[2S] ⇔ -isti: / {Asp[PERF], Mood[OPT]}__

Another Restriction on VIs? (1)

- A second pattern—in "pseudo$_2$-Latin" below—is one that may or may not be attested.
- This pattern would seem to make α notation (Asp[αIMPERF, αPERF]) or reference to adjacency to a node label alone (Asp) necessary.

P/N	Asp[-IMPERF,+PERF] i-shape	Default m-shape	Non-Past o-shape	Asp[+IMPERF,-PERF] x-shape
1S	**-i:**	**-(i)m**	-o:	-o:
2S	-ISTI:	-(i)s	-(i)s	-ISTI:
3S	-(i)t	-(i)t	-(i)t	-(i)t
1P	-(i)mus	-(i)mus	-(i)mus	-(i)mus
2P	**-istis**	-(i)tis	-(i)tis	-(i)tis
3P	**-e:re, -e(:)runt**	-(u)nt	-(u)nt	-(u)nt

Table 5: Identifier and Default Allomorphs in "pseudo$_2$-Latin" Verb Forms (SMALL CAPS indicate "blurred" morphemes)

Another Restriction on VIs? (2)

- With no distinction in content between node labels and terminal elements[6], the question becomes whether or not there is always a feature among the features that compose a lexical item that identifies the category of the item.
  - Sometimes there is an obvious and independently motivated (via other syntactic phenomena) feature that accomplishes this: [+FIN] may identify the category Tense, for example.
  - In the case of Aspect, it is less clear to me that there is such an independently motivated feature.
- I leave for further research the question of whether there are situations like "pseudo$_2$-Latin"—where referring to node label features that are not independently motivated is necessary in order to capture the allomorphic distributions.

[6] As implemented, for example, in *Bare Phrase Structure* and related works (Chomsky, 1994, 1995).

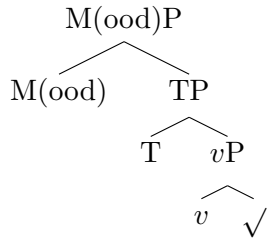
The NBP vs. Vocabulary Insertion via VIs

- The NBP is too restrictive because it constrains distributions across higher-order objects ("shapes") instead of the distributions of individual allomorphs across grammatical contexts.
- By constraining the form of VIs, it is possible to avoid the most extreme situations that could give rise to "blurring" in grammatically-conditioned allomorphy, while allowing other cases—crucially, cases that don't involve positing a disjunction of features—to emerge.
- In the next section, we will see just such a case of "blurring" that emerges in Hungarian agreement morphology due to the structural complexity of the Hungarian verb.

The Structure of the Hungarian Verb

The order of the relevant projections in Hungarian is the following:

(2)



Linear Order of Morphemes in Hungarian

Thus, the linear order of morphemes in Hungarian is as in (3).

(3) $\sqrt{ROOT}$—v—T/M—(AgrO)—AgrS

When is AgrO present?

- The parentheses in (3) are intended to indicate that **the AgrO node is absent whenever there is no definite direct object**[7].
- This is not to say that Agree between v and an indefinite object doesn't occur[8], only that a [-DEF] feature on v doesn't trigger the adjunction of the "ornamental"[9] AgrO node[10].

[7] See Kenesei et al. (1998) and Bartos (2001) for more information on the contexts that trigger object agreement in Hungarian.

[8] Clearly, it does given that accusative Case is valued on indefinite direct objects as on definite direct objects.

[9] See Embick and Noyer (2007, p. 305) and citations there on ornamental morphology.

[10] Another way to accomplish the absence of an AgrO node when no definite direct object is present is to insert a null exponent for AgrO[-DEF] and then assume "pruning" of all AgrO[-DEF, ∅] nodes (Embick, 2010, p. 58-60).

Exponents of AgrO

Two VIs (4) are necessary to capture the variety of realizations of AgrO when a [+DEF] feature is present.[11]

(4) a. AgrO[3+DEF] ⇔ -A[12]
b. AgrO[+DEF] ⇔ -∅

[11] There are some complications here involving the absence of an exponent for AgrO[3+DEF] in the 1S and 2S, as well as some complications in the 1P and in the case of 2nd person objects with 1st person singular subjects. For the most part, these go beyond the scope of this paper, but they are certainly fair game for questions.

[12] I use capital letters to represent meta-vowels that abstract away from vowel harmony variants. Thus, A represents (orthographic) a and e, O represents o, e, and ö, and U represents u and ü.

Subject Agreement Allomorphy (1)

The subject agreement allomorphs in the 8 combinations of tense, mood, and object state expressed with synthetic verb forms in Hungarian are the following:

P/N	Present		Past		Subjunctive		Conditional	
	Indef.	Def.	Indef.	Def.	Indef.	Def.	Indef.	Def.
1S	-k	-m	-m	-m	-k	-m	-ék	-m
2S	-sz (-l)	-d	-Ál	-d	-Ál	-d	-Ál	-d
3S	-∅	-∅	-∅	-∅	-On	-∅	-∅	-∅
1P	-Unk	-Uk	-Unk	-Uk	-Unk	-Uk	-Unk	-Unk
2P	-tOk	-tOk	-tOk	-tOk	-tOk	-tOk	-tOk	-tOk
3P	-nAk	-k	-k	-k	-nAk	-k	-nAk	-k

Table 6: Hungarian Subject Agreement Morphemes

Subject Agreement Allomorphy (2)

Note that in every tense/mood except the conditional, the definite paradigms are the same such that we can collapse the table:

P/N	Present		Past		Subjunctive		Conditional	
	Indef.	Def.	Indef.	Def.	Indef.	Def.	Indef.	Def.
1S	-k	**-m**	-m	**-m**	-k	**-m**	-ék	-m
2S	-sz (-l)	**-d**	-Ál	**-d**	-Ál	**-d**	-Ál	-d
3S	-∅	**-∅**	-∅	**-∅**	-On	**-∅**	-∅	-∅
1P	-Unk	**-Uk**	-Unk	**-Uk**	-Unk	**-Uk**	-Unk	-Unk
2P	-tOk	**-tOk**	-tOk	**-tOk**	-tOk	**-tOk**	-tOk	-tOk
3P	-nAk	**-k**	-k	**-k**	-nAk	**-k**	-nAk	-k

Table 7: Hungarian Subject Agreement Morphemes w/**Default Definite**

Subject Agreement Allomorphy (3)

P/N	Indefinite				Definite	
	Pres.	Past	Subj.	Cond.	Default	Cond.
1S	-k	-m	-k	-ék	-m	-m
2S	-sz (-l)	-Ál	-Ál	Ál	-d	-d
3S	-∅	-∅	-On	-∅	-∅	-∅
1P	-Unk	-Unk	-Unk	-Unk	-Uk	-Unk
2P	-tOk	-tOk	-tOk	-tOk	-tOk	-tOk
3P	-nAk	-k	-nAk	-nAk	-k	-k

Table 8: Hungarian Subject Agreement Morphemes by 'Shape'

Subject Agreement Allomorphy (4)

- There is nothing interesting going on in the:
  - **3s:** -*On* occurs only in the context of the subjunctive indefinite and uniquely identifies that context
  - **2p:** the same morpheme (-*tOk*) appears in every tense/mood/object state
- In the **1p** of the conditional definite there is a neutralization: the default 1P agreement morpheme -*Unk* appears instead of the morpheme -*Uk* conditioned by adjacency to AgrO[3+DEF]

Subject Agreement Allomorphy (5)

Thus we can collapse the table even further into Table 9, where the morphemes of interest are:

- "identifier" morphemes in (parentheses)
- morphemes with non-unique but non-default distributions in **boldface**[13]

P/N	Indefinite				Definite	
	Pres.	Past	Subj.	Cond.	Default	Cond.
1S	**-k**	-m	**-k**	(-ék)	-m	-m
2S	(-sz/-l)	-Ál	-Ál	Ál	**-d**	**-d**
3P	**-nAk**	-k	**-nAk**	**-nAk**	-k	-k

Table 9: Hungarian Subject Agreement Morphemes by 'Shape'

[13]My analysis here differs substantially from that in Carstairs-McCarthy (1998), where Hungarian verbal morphology is claimed to have no "blurring" only by way of considering the Indefinite and Definite conjugations separately. Thus, the 1S morpheme -*m* is glossed as 'Past OR Definite.'

Hungarian as a Counterexample to the NBP

- In the following three slides, I show that in three p/n combinations in the subject agreement morphology of Hungarian, we have real counter-examples to the NBP.
- I take the fact that fully *half* the p/n combinations show "blurring" as a real problem for the NBP.

1s

The following VIs account for the pattern of subject agreement morphology in 1s of Hungarian verbal forms:

(5) a. AgrS[1s] ⇔ -ék / T/M[PRES, COND]__
b. AgrS[1s] ⇔ -k / T/M[PRES]__
c. AgrS[1s] ⇔ -m

2s

The most obvious solution to the pattern of allomorphy in the 2s is to employ the following VIs:

(6) a. AgrS[2s] ⇔ -sz (-l[14]) / T/M[PRES, INDIC]__[15]
b. AgrS[2s] ⇔ -d / AgrO[3+DEF]__
c. AgrS[2s] ⇔ -Ál

[14] Following stems ending in stridents. Since this is a case of phonologically-conditioned allomorphy, it doesn't concern me here.

[15] Some might object to this rule because it makes reference to a feature [INDIC] that is unmarked and never surfaces with an overt exponent in Hungarian. However, since there are multiple places where it is necessary to make reference to the indicative in the verbal morphology of Hungarian (e.g., in the /j/-insertion rule necessary for the proper realization of AgrO[3+DEF]), it seems fair to assume that the feature is there to be referenced.

3p

- The pattern of subject agreement allomorphy in the 3p is the simplest:

(7) a. AgrS[3p] ⇔ -*nAk* / T/M[PRES]__
b. AgrS[p] ⇔ -*k*

- The underspecification in (7b) makes it possible to capture the fact that not only is 3p sometimes realized by -*k*, but default plural marking across Hungarian is also realized by -*k*.

Conclusion

My central aim in this paper has been to show that Hungarian verbal morphology is the exception that proves the rule.

- The unusual system of object agreement resulting in different adjacency relationships between verbal morphemes allows the distributions found in Table 9 to emerge.
- Where comparable structural complexity is absent—as in Latin—such distributions are not found.
- Therefore, I conclude that the way to account for the attested patterns in grammatically-conditioned allomorphy is to restrict the form of VIs, not to constrain higher-order theoretical constructs such as paradigms.

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Bartos, Huba. 2001. Object agreement in Hungarian: A case for minimalism. In *The Minimalist Parameter: Selected Papers from the Open Linguistics Forum Ottawa, 21-23 March 1997*, ed. Galina M. Alexandrova and Olga Arnaudova, volume 192 of *Current Issues in Linguistic Theory*, 311–324. Philadelphia: John Benjamins.

Bonet, Eulália. 1991. Morphology after Syntax: Pronominal Clitics in Romance. Doctoral Dissertation, MIT.

Cameron-Faulkner, Thea, and Andrew Carstairs-McCarthy. 2000. Alternants as morphological signata: Evidence from blur avoidance in Polish nouns. *Natural Language & Linguistic Theory* 18:813–835.

Carstairs-McCarthy, Andrew. 1994. Inflection classes, gender, and the principle of contrast. *Language* 70:737–788.

Carstairs-McCarthy, Andrew. 1998. How lexical semantics constrains inflectional allomorphy. In *Yearbook of Morphology 1997*, ed. Geert Booij and Jaap van Marle, 1–24. Kluwer Academic Publishers.

Carstairs-McCarthy, Andrew. 2001. Grammatically conditioned allomorphy, paradigmatic structure, and the ancestry constraint. *Transactions of the Philological Society* 99:223–245.

Chomsky, Noam. 1994. *Bare Phrase Structure*. Number 5 in MIT Occasional Papers in Linguistics. Cambridge, MA: MIT Working Papers in Linguistics.

Chomsky, Noam. 1995. *The Minimalist Program*. Number 28 in Current Studies in Linguistics. Cambridge, MA: MIT Press.

den Dikken, Marcel. 2006. When Hungarians agree (to disagree). Ms.

Embick, David. 2010. *Localism versus Globalism in Morphology and Phonology*. Number 60 in Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.

Embick, David, and Rolf Noyer. 2007. Distributed morphology and the syntax-morphology interface. In *Oxford Handbook of Linguistic Interfaces*, ed. Gillian Ramchand and Charles Reiss, Oxford Handbooks in Linguistics, 289–324. Oxford University Press.

Hajdú, Péter. 1972. The origins of Hungarian. In *The Hungarian Language*, ed. Loránd Benkö and Samu Imre, 15–48. Mouton.

Halle, Morris, and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In *The View from Building 20*, ed. Kenneth Hale and S. Jay Keyser, 111–176. MIT Press.

Halle, Morris, and Alec Marantz. 2008. Clarifying 'Blur': Paradigms, defaults, and inflectional classes. In *Inflectional Identity*, ed. Asaf Bachrach and Andrew Nevins, number 18 in Oxford Studies in Theoretical Linguistics, 55–72. Oxford University Press.

Kenesei, István, Robert M. Vago, and Anna Fenyvesi. 1998. *Hungarian*. New York: Routledge.

Kiefer, Ferenc, and Katalin É. Kiss, ed. 1994. *The Syntactic Structure of Hungarian*, volume 27 of *Syntax and Semantics*. Academic Press.

Noyer, Rolf. 1998. Impoverishment theory and morphosyntactic markedness. In *Morphology and Its Relation to Phonology and Syntax*, ed. Steven G. Lapointe, Diane K. Brentari, and Patrick M. Farrell, 264–285. Stanford: CSLI Publications.

Olsson, Magnus. 1992. *Hungarian Phonology and Morphology*. Number 26 in Travaux de l'Institut de Linguistique de Lund. Lund, Sweden: Lund University Press.

Puskás, Genoveva. 2000. *Word Order in Hungarian: The Syntax of A-bar Positions*. Linguistics Today. John Benjamins.

Rebrus, Péter, and Miklós Törkenczy. 2005. Uniformity and contrast in Hungarian. In *Paradigms in Phonological Theory*, ed. Laura J. Downing, T. Alan Hall, and Renate Raffelsiefen, Oxford Studies in Theoretical Linguistics, 263–295. New York: Oxford University Press.

Rounds, Carol. 2001. *Hungarian: An Essential Grammar*. Essential Grammars. Routledge.

Siptár, Péter, and Miklós Törkenczy. 2000. *The Phonology of Hungarian*. The Phonology of the World's Languages. New York: Oxford University Press.

Váradi, Tamás. 2002. The hungarian national corpus. In *Proceedings of the 3rd LREC Conference*, 385–389.