

Grammaticalization without Feature Economy: Evidence from the Voice Cycle in Hungarian¹

The 20th Diachronic Generative Syntax Conference
University of York, York
2018 June 20th

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1. THE PROBLEM

Middle voice in Hungarian (anticausative, reflexive, dispositional middle, mediopassive and antipassive) is encoded in a seemingly confusingly complex manner:

- special verb inflection paradigm (contextual allomorphy in the subject agreement suffix conditional on voice) (a couple of verbs only):
 - (1)

<i>tör-Ø</i>	<i>tör-ik</i>
break-3SG	break-3SG
‘sy breaks sg’	‘sg gets broken’
- special verb infl. paradigm + middle suffix (the typical case):
 - (2)

<i>old-Ø</i>	<i>*old-ik</i>	<i>old-ód-ik</i>
dissolve-3SG	dissolve-3SG	dissolve-MID-3SG
‘sy dissolves sg’	‘sg gets dissolved’	
- special verb infl. paradigm. + 2 middle suffixes (the second is optional) (an innovation):
 - (3)

<i>lát-Ø</i>	<i>*lát-ik</i>	<i>lát-sz-ik</i>	<i>lát-sz-ód-ik</i>
see-3SG	see-3SG	see-MID-3SG	see-MID-MID-3SG
‘sy sees sg’	‘sg can be seen / is visible / seems’		

2. MAIN CLAIMS

- The current picture reflects an intermediate stage in an ongoing grammaticalization process which can be characterized as a cycle: the elements encoding middle voice lose their function and are reinforced by other elements, which in turn lose their function and are reinforced etc.
- In Old Hungarian, middle voice was encoded via a separate inflectional paradigm (contextual allomorphy in AgrS conditional on the feature content of a silent Voice head)
- In Modern Hungarian, middle voice is encoded via a separate middle voice suffix (an overt spellout of the Voice head)
- Grammaticalization involved the reinterpretation of frequentative suffixes (v heads) as middle voice suffixes (Voice heads)
- This reinterpretation was not based on shared abstract features, but rather, on a principled correlation between middle voice and frequentative aspect

1 I wish to thank Ágnes Bende-Farkas, Irine Burukina, Katalin É. Kiss, Veronika Hegedűs, Maria Polinsky, Orsolya Tánzos and the participants of the GLOW41 conference for their comments and advice. My research was supported by the Premium Postdoctoral Grant PPD031/2017 of the Hungarian Academy of Sciences.

3. LATE OLD HUNGARIAN: AGRS ALLOMORPHY CONDITIONAL ON VOICE

- Late Old Hungarian had two verbal conjugation paradigms: the active paradigm (the standard paradigm) and a middle paradigm (the *-iké* paradigm) (cf. E. Abaffy 1991):²

(4)	a.	<i>szege</i>	‘sy cuts sg’	→	<i>szege-iké</i>	‘sg gets cut’ ³	ANTICAUSATIVE
	b.	<i>mosd</i>	‘sy washes sg’	→	<i>mosd-iké</i>	‘sy washes herself’ ⁴	REFLEXIVE
	c.	<i>gyón</i>	‘sy confesses sg’	→	<i>gyón-iké</i>	‘sy makes her confession’ ⁵	ANTIPASSIVE

- Background: following Bartos 1999, den Dikken 1999, É. Kiss 2002 etc., I assume the following structure for the vP and the inflectional domain as my starting point: [[[[[[[vP] vP] ModP] TenseP] MoodP] AgrOP] AgrSP].⁶
- Analysis A: contextual allomorphy: allomorphy of AgrS head (regular paradigm / *-iké* paradigm) is conditioned by the feature content of the lower silent Voice head (ACT/MID) (i.e., I assume with Alexiadou, Anagnostopoulou and Schäfer 2015 and Schäfer 2008 that VoiceP is projected, but SpecVoiceP is crucially not, in so-called marked anticausatives, and in middles in general).

(5)	a..	<i>szege-Ø-bet-Ø-ne-Ø-Ø</i>
		cut-ACT-DEONT-PRES-COND-INDEF-3SG
		‘sy would be able to cut sg’
		[[[[[[[V _{VP}] vP] <u>ACT</u> _{VoiceP}] DEONT _{ModP}] PRES _{TenseP}] COND _{MoodP}] INDEF _{AgrOP}] <u>3SG</u> _{AgrSP}]
		<i>szege</i> Ø <i>-bet-</i> Ø <i>-ne-</i> Ø Ø
	b.	<i>szege-Ø-bet-Ø-né-ké</i>
		cut-MID-DEONT-PRES-COND-3SG
		‘sg would be able to get cut’
		[[[[[[[V _{VP}] vP] <u>MID</u> _{VoiceP}] DEONT _{ModP}] PRES _{TenseP}] COND _{MoodP}] <u>3SG</u> _{AgrSP}]
		<i>szege</i> Ø <i>-bet-</i> Ø <i>-ne-</i> <i>-iké</i>

- This analysis supports Merchant’s (2015) Span Adjacency Hypothesis, where allomorphy is conditioned by an adjacent span (i.e., a sequence of heads in a single extended projection, Svenonius 2012). More restrictive approaches to the locality domain of allomorphy (locality within the same X⁰ (Bobaljik 2012 and Thornton 2017), locality within the minimal XP (Bobaljik and Harley 2017), linear adjacency/concatenation in single spellout domain (Embick 2010, Arregi and Nevins 2012)) would rule out conditional allomorphy between AgrS and Voice because of their distance.
- In terms of directionality, this is an instance of inwardly-sensitive allomorphy. Note that on the assumption that vocabulary insertion eliminates the morphosyntactic features of a head (Halle 1990, Noyer 1992), such feature-triggered inwardly sensitive allomorphy has been predicted to be impossible by Bobaljik (2000). Thus, these data from Hungarian support the alternative hypothesis, i.e., that morphosyntactic features remain intact and are retained after vocabulary insertion (Halle and Marantz 1993, Noyer 1997).

2 For more details on the two paradigms, see appendix.

3 MünchK (1466) 21ra: veuen a3 9t keñe3ekèt ... ñgalda 7 me3zege, ÉrsK (1529-1531) 410: ýstený akarabol harom rezre zegeke az ostýa

4 DebrK (1519) 517: chýak orchýayath sým *mosdotta* megh, BécsiK (mid-15th): me3mo3dik uala

5 JordK (1516-1519) 100: *gyónnyá* megh ... býneeth, JókK (cca 1440) 53: mert pokol nem *gyonnik* nekéd

6 Bartos (1999) actually assumes a left-branching structure and derives the surface order of suffixes by assuming that the functional heads are joined to V via an operation called morphosyntactic merge, with the result that the surface order of the suffixes is the mirror image of the morphosyntactic order (Baker 1985). For ease of presentation, I decided to use a right-branching structure in this paper, but nothing hinges on this choice.

- This is a further reinterpretation of the conditioning factor: instead of the presence / absence of an external argument, the condition is now whether the verb denotes a single-argument predicate.
- Final stage: Certain middle paradigm verbs start to be used with direct object:

(9) *esz-ik valami-ben* ‘sy eat sg-INE’ → *esz-ik valamit* ‘sy eat sg-ACC’¹²

- At this stage, the middle paradigm becomes an irregular inflectional paradigm: the allomorphy is arbitrarily conditioned by V and does not reflect any grammatical property.
- Facilitating factors of the collapse of the separate middle paradigm:
 - unstable in terms of learnability (Clark and Roberts 1993): middle vs. active paradigm contrasted only in the following moods / tenses: the present singular, the present conditional singular, the imperative singular and the archaic imperfect past singular
 - middle voice had no separate marker: it was only visible through allomorphs which encoded to features Voice and subject phi-features (cf. Faarlund, Roberts and Roussou 2003: 16, 200, 210 on Feature Syncretism: ‘if one lexical item “spell[s] out the features of two (or perhaps more) heads” (2003:200), a reanalysis can take place’)

5. THE EMERGENCE OF MIDDLE VOICE SUFFIXES

- In modern Hungarian, mediality is overtly encoded by middle suffixes (note that middles obligatorily follow the original ‘middle’ inflectional paradigm: i.e., following the middle inflectional paradigm is a necessary but insufficient condition of mediality in Mod. Hungarian):

(10)	a.	-sz:	<i>lát-sz-ik</i>	(see-MID-3SG)	‘it seems’	DISP. MIDDLE
	b.	-d:	<i>mos-d-ik</i>	(wash-MID-3SG)	‘she washes herself’	REFLEXIVE
	c.	-(V)kVsz:	<i>imád-koz-ik</i>	(worship-MID-3SG)	‘she prays’	ANTIPASSIVE
	d.	-Vdik:	<i>kever-ed-ik</i>	(mix-MID-3SG)	‘it gets mixed’	ANTICAUSATIVE
	e.	-V:dik:	<i>üt-őd-ik</i>	(hit-MID-3SG)	‘it gets hit’	ANTICAUSATIVE

- As has been noted by traditional historical linguists, these middle suffixes are all derived from originally frequentative suffixes.
- The (productive) frequentative suffix *-gat/-get* in Hungarian has functions related to causativity alternations and the verb-formation from category-neutral roots:¹³

(11)	a.	<i>for-og</i>	b.	<i>for-gat</i>
		√turn-FREQ		√turn-FREQ
		‘turn-inchoative’		‘turn-causative’

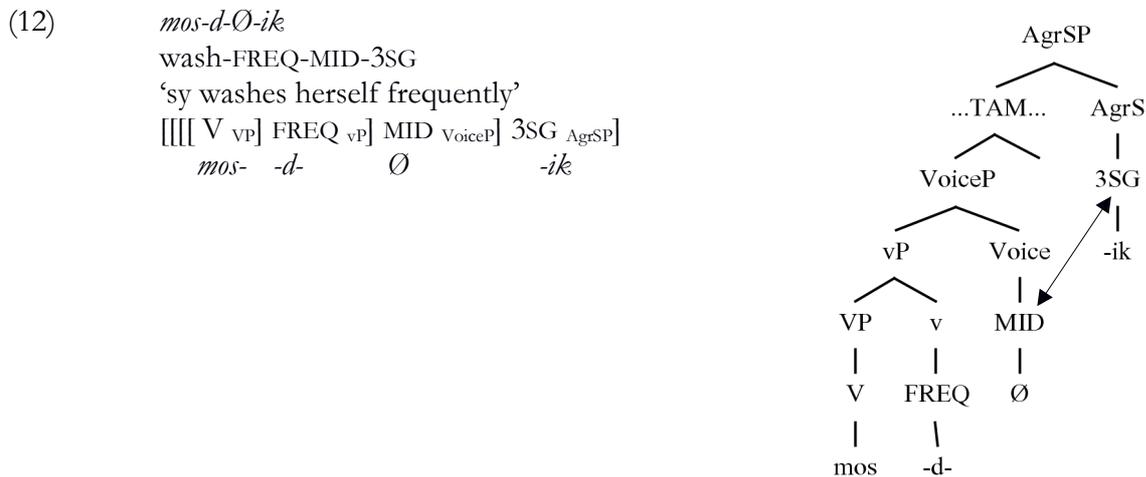
- Based on this, I assume that frequentatives in Hungarian are merged in little v (cf. Harley 1995, Marantz 1997, Harley and Noyer 2000).
- Cross-linguistically, middles are often associated with frequentative/habitual readings:
 - Antipassives where the theme argument (which could measure out the event) is demoted (Polinsky 2017)

12 JókK (cca 1440) 84: *eszjék* uala ... a *kenerben*, BécsiK (mid-15th): 7 *zenat eszic* vala

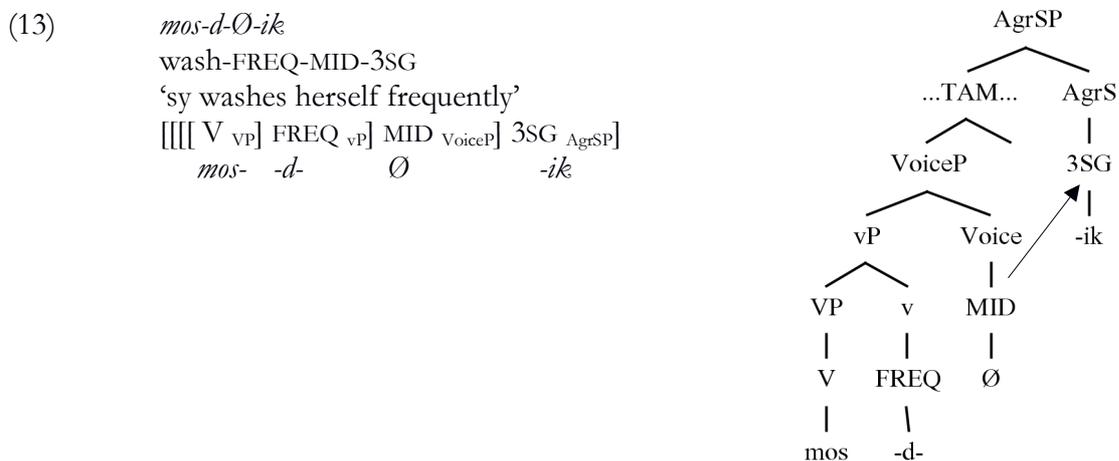
13 Note also that the unproductive frequentative suffixes *-kod/-ked/-köd* and *-od/-ed/-öd* also have a verbalizing function:

(i)	<i>erős-köd-ik</i>	(ii)	<i>erős-öd-ik</i>
	strong-FREQ-3SG		strong-FREQ-3SG
	‘keeps on insisting strongly’		‘gains strength’

- Dispositional middles which ascribe a stable generic property to their argument.
- Verbs in middle voice were very likely to carry these frequentative suffixes
- As the middle paradigm collapsed and AgrS allomorphy was no longer a reliable marker of middle voice, it was easy for language learners to reanalyze these frequentative suffixes as the markers of middle voice. (This can be related to the notion of stability in Clark and Roberts 1993: the expression of middle voice in AgrS morphology was highly ambiguous.)
- In structural terms, this was equivalent to the frequentative v head being reinterpreted as a middle Voice head
- Significant advantage: middle voice is now transparently encoded in all moods/tenses/persons
- Crucially, grammaticalization is not driven by feature economy: it not based on shared abstract features, but rather, comes about because of a principled correlation between middle voice and habitual / frequentative aspect
- Probably not unique to Hungarian, e.g. the middle suffix *-sk-* in Udmurt has been tentatively analyzed as etymologically related to a frequentative suffix and the antipassive in Udmurt is associated with a habitual reading (Orsolya Tánzos pc)
- The reanalysis proceeded as follows:
 - Middle paradigm stable, one-to-one (bidirectional) correspondence between AgrS allomorph and Voice head:

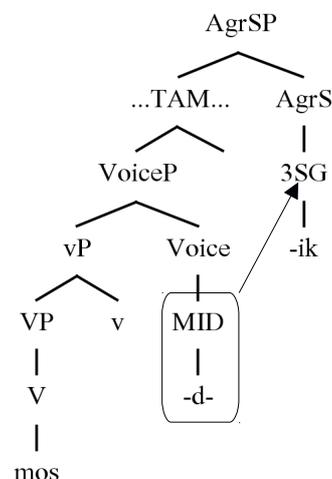


- Middle paradigm collapses, no one-to-one correspondence between AgrS allomorph and Voice head:



- Overt middle voice heads: increased transparency (visible in all tenses and moods) and learnability:

(14) *mos-d-ik*
 wash-MID-3SG
 ‘sy washes herself’
 [[[[V_{VP}] vP] MID_{VoiceP}] 3SG_{AgrSP}]
mos- *-d-* *-ik*



6. THE BREAKDOWN OF VOICE SYNCRETISM

After this reanalysis, a fragmented landscape of semi-productive middle suffixes emerged:

(15)		<i>-sz-</i>	<i>-(V)kVsz-</i>	<i>-Vd-</i>	
a.	<i>lát-Ø</i> see-3SG ‘sy sees sg’	<u><i>lát-sz-ik</i></u>	<i>*lát-koz-ik</i>	<i>*lát-od-ik</i>	
			see-MID-3SG ‘sg can be seen / is visible’		DISP. MIDDLE
b.	<i>imád-Ø</i> worship-3SG ‘sy worships sg’	<u><i>*imád-sz-ik</i></u>	<i>imád-koz-ik</i>	<i>*imád-od-ik</i>	
			worship-MID-3SG ‘sy is engaged in an act of worship’		ANTIPASSIVE
c.	<i>kever-Ø</i> mix-3SG ‘sy mixes sg’	<u><i>%okever-sz-ik</i>¹⁴</u>	<i>*kever-kez-ik</i>	<i>kever-ed-ik</i>	
			mix-MID-3SG ‘sg gets mixed’		ANTICAUSATIVE

- there is no one-to-one correspondence between flavours of middle voice and different middle suffixes (each derived from different frequentative suffixes):

(16) a.	<i>szépit-kez-ik</i> beautify-MID-3SG lit. ‘beautifies herself’, meaning: ‘does her makeup’		REFLEXIVE
b.	<i>épít-kez-ik</i> build-MID-3SG ‘is building around, is involved in an unspecified building project’		ANTIPASSIVE
c.	<i>vitat-koz-ik</i> dispute-MID-3SG ‘is involved in a debate, are debating with one another’		ANTIPASSIVE/ RECIPROCAL

¹⁴ Dialectal.

- Similar to the negative cycle in French: in Stage 2 of the cycle (see Foulet 1990, Déprez 2000, Roberts and Roussou 2003), several words were grammaticalized as neg-words (*point* ‘point’, *pas* ‘step’, *mie* ‘crumb’ or *goutte* ‘drop’), but only one of these, *pas* survived into Stage 3 and now serves as a negator in Standard French.
- exception: with anticausatives, *-V:d-* emerged as a productive suffix (Komlósy 2000, Márkus 2015):

(17)	<i>töm-Ø</i>	→ <i>töm-ód-ik</i> / <i>*töm-sz-ik</i> / <i>*töm-d-ik</i> / <i>*töm-kez-ik</i> / <i>*töm-öd-ik</i>
	fill-3SG	fill-MID-3SG
	‘sy fills sg’	‘sg gets filled’

- *-V:d-* can also function as a medio-passive suffix
- anticausatives are not correlated with frequentative readings, so the appearance of *-V:d-* in anticausatives was probably a later development based on analogy with antipassives such as *csúfol-ód-ik* mock-MID-3SG ‘is engaged in mocking’

7. THE RISE OF SUFFIX STACKING

- some of these semi-productive suffixes are being reinforced with the productive anticausative / mediopassive suffix *-V:d-*, resulting in the rise of stacking (the combination of a semiproductive suffix and a productive voice alternation suffix, cf. Kozinsky et al. (1988) 661, Gerdtz and Hukari 2005, Polinsky 2013))
- an ongoing process, which affects dispositional middles, while reflexives and antipassives appear to be immune:

(18)	a.	<i>lát-Ø</i>	<i>lát-sz-ik</i>	<i>lát-sz-ód-ik</i>	DISP. MIDDLE
		see-3SG	see-MID-3SG	see-MID-MID-3SG	
		‘sy sees sg’	‘sg can be seen / sg is visible / sg seems as’		DISP. MIDDLE
	b.	<i>hall-Ø</i>	<i>hall-atsz-ik</i>	<i>hall-atsz-ód-ik</i> ¹⁵	
		hear-3SG	hear- MID-3SG	hear-MID-MID-3SG	
		‘sy hears sg’	‘sg can be heard / sg is audible / sg sounds as’		
	c.		<i>tet-sz-ik</i>	<i>?tet-sz-ód-ik</i>	DISP. MIDDLE
			see.archaic- MID-3SG	see.archaic-MID-MID-3SG	
			‘sg appears favourably, sg is likeable’		
	d.	<i>ölel-Ø</i>	<i>ölel-kez-ik</i>	<i>*ölel-kez-ód-ik</i>	REFLEXIVE
		embrace-3SG	embrace-MID-3SG	embrace-MID-MID-3SG	
		‘sy embraces sg’	‘sy embraces one another’		
	e.	<i>csodál-Ø</i>	<i>csodál-koz-ik</i>	<i>*csodál-koz-ód-ik</i>	ANTIPASSIVE
		admire-3SG	admire-MID-3SG	admire-MID-MID-3SG	
		‘sy admires sg’	‘sy is astonished’		

- a pattern: dispositional middles, anticausatives and mediopassives all involve agent supression / demotion, whereas reflexives and and antipassives do not (reflexives and antipassives often display syncretism, cf. Polinsky 2017)
- note that the spread of *-V:d-* onto more and more flavours of middles is a step into the direction of the full restoration of voice syncretism, closing the cycle

15 Dialectal *hall-ik* / *hall-ód-ik* (also *hall-sz-ik* / *hall-sz-ód-ik*).

8. CONCLUSION

- The current picture of middle voice in Hungarian reflects an intermediate stage in an ongoing grammaticalization process which can be characterized as a cycle: the elements encoding middle voice lost their function and were reinforced by other elements, which in turn lost their function and were further reinforced etc.
- In Old Hungarian, middle voice was encoded via a separate inflectional paradigm (contextual allomorphy in AgrS conditional on the feature content of a silent Voice head)
- In Modern Hungarian, middle voice is encoded via a separate middle voice suffix (an overt spellout of the Voice head)
- Grammaticalization involved the reinterpretation of frequentative/diminutive suffixes (v heads) as middle voice suffixes (Voice heads)
- This reinterpretation was not based on shared abstract features, but rather, on a principled correlation between middle voice and frequentative aspect

APPENDIX 1: THE MIDDLE PARADIGM

The difference of the middle paradigm from the standard paradigm manifested itself in different AgrS suffix forms. In its fullest known form, the middle paradigm differed from the standard paradigm only in the following moods/tenses: the present singular, the present conditional singular, the imperative singular and the archaic imperfect past singular. Consider:

	standard	middle
present		
1SG	<i>-ek</i>	<i>-em</i>
2SG	<i>-sz</i>	<i>-el</i>
3SG	<i>-Ø</i>	<i>-ik</i>
present conditional		
COND.1SG	<i>-nék</i>	<i>-ném</i>
COND.2SG	<i>-nél</i>	<i>-nél</i>
COND.3SG	<i>-ne</i>	<i>-nék</i>
imperative		
IMP.1SG	<i>-jék</i>	<i>-jem</i>
IMP.2SG	<i>-j</i>	<i>-jél</i>
IMP.3SG	<i>-jen</i>	<i>-jék</i>
imperfect past (archaic)		
PAST.1SG	<i>-ék</i>	<i>-ém</i>
PAST.2SG	<i>-él</i>	<i>-él</i>
PAST.3SG	<i>-e</i>	<i>-ék</i>

Crucially, in the praeterite past tense (which is the only past tense in Modern Hungarian), the middle paradigm and the standard paradigm have never been different (since as far as our written sources stretch back).

The erosion of the separate middle paradigm has been ongoing since the 16th century, today, the only form where the separate middle paradigm is stable is the present tense 3rd singular. Very

conservative speakers and some dialects to some extent retain the difference in the 1st and 3rd person present, present conditional and imperative forms; however, the difference in 2nd person forms has completely collapsed.

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