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Analogical feature transmission within an antonym schemaThe case of the suffix -hAtÓ

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Analogical feature transmission within an antonym schema

The case of the suffix *-hAtÓ*

Abstract

This paper aims to account for the seemingly idiosyncratic properties of the Hungarian derivational suffix *-hAtÓ,* occurring, for example, in *olvas-ható* 'readable', *büntet-hető* 'punishable'. The suffix is a conglutination of two deverbal suffixes, the possibility suffix *-hat,* and the suffix *-Ó* of present participles, but does not share the selectional and distributional properties of its components. It is claimed that *-hAtÓ* acquired its unexpected features analogically from its counterpart with the opposite meaning, the suffix *-hAtAtlAn,* in antonym pairs such as *olvas-ható* 'readable' – *olvas-hatatlan* 'unreadable', *büntet-hető* 'punishable' – *büntet-hetetlen* 'unpunishable'. In modern Hungarian, the conditions of analogical feature transfer would not be satisfied as V-*hAtÓ* complexes are more than twice as frequent as V-*hAtAtlAn* forms. However, the V-*hAtAtlAn* construction appeared several centuries earlier than the V-*hAtÓ* form, and its preponderance over V-*hAtÓ* is evident throughout the Old Hungarian period.

Keywords: *suffix conglutiation, analogy, antonym schema, conditions of analogical feature transfer, Hungarian, -hAtÓ*

1 Introduction

This paper aims to account for the seemingly idiosyncratic properties of the Hungarian derivational suffix *-hAtÓ,* occurring, for example, in *olvas-ható* 'readable', *büntet-hető* 'punishable'. The suffix is a conglutination of two deverbal suffixes, the possibility suffix *-hAt,* and the suffix *-Ó* of present participles, but does not share the selectional and distributional properties of its components. It is claimed below that it acquired its unexpected features analogically from its counterpart with the opposite meaning, the suffix *-hAtAtlAn,* in antonym pairs such as *olvas-ható* 'readable' – *olvas-hatatlan* 'unreadable', *büntet-hető* 'punishable' – *büntet-hetetlen* 'unpunishable'. In modern Hungarian, the conditions of analogical feature transfer would not be satisfied as V-*hAtÓ* complexes are more than twice as frequent as V-*hAtAtlAn* forms. However, as shown below, the V-*hAtAtlAn* construction appeared several centuries earlier than the V-*hAtÓ* form, and its preponderance over V-*hAtÓ* is evident throughout the Old Hungarian period.

2 The problem

The suffix *-hAtÓ* contains the possibility suffix *–hAt,* deriving verbs with a modal component (e.g., *olvas-hat* 'can read', *dolgoz-hat* 'can work', *köhög-het* 'can cough'), and the suffix *-Ó,* deriving active present participles, e.g., *olvas-ó* 'read-ing', *dolgoz-ó* 'work-ing', *köhög-ő*

‘cough-ing.’ As is clear from these forms, and as illustrated in (1a–c) and (2a–c), both of these suffixes can combine with active transitive, unergative, and unaccusative verbs alike.

(1)a. A rokonok **látogat-hat-ják** a beteg-et.
the relatives visit-POSSIB-3PL the patient-ACC[1]
‘The relatives can visit the patient.’

b. Pál a műtét után ismét **dolgoz-hat**.
Pál the surgery after again work-POSSIB.3SG
‘Pál can work again after the surgery.’

c. A hang-felvétel alatt nem **köhög-het-ünk**.
the sound-recording during not cough-POSSIB-1PL
‘We cannot cough during the audio recording.’

(2)a. A beteg-et **látogat-ó** rokonok virág-ot hoz-t-ak.
the patient-ACC visit-PTCP relatives flower-ACC bring-PST-3PL
‘The relatives visiting the patient brought flowers.’

b. A műtét után ismét **dolgoz-ó** Pál-t még kímél-ni kell.
the surgery after again work-PTCP Pál-ACC still spare-INF need.3SG
‘Pál, working again after the surgery, still needs to be spared exertion.’

c. A hang-felvétel alatt **köhög-ő** hallgató-t ki-vezet-t-ék.
the sound-recording during cough-PTCP listener-ACC out-escort-PST-3PL
‘The listener coughing during the audio recording was escorted out.’

As observed by Velcsov (1971–1972), Komlósy (1992: 393–396), Kenesei, Vágó & Fenyvesi (1998: 366), Kiefer & Ladányi (2000: 162), Bartos (2000: 716), and Matushansky (2025), the

[1] **Abbreviations**: ACC accusative; ADE adessive; C. codex; CAUS CAUS causative; COMP comparative; COND conditional; DAT dative; IMP imperative; INF infinitive; intr intransitive; M meaning; PASS passive; POSS possessedness suffix; Q question particle; PL plural; POSSIB possibility suffix; PRF perfect; PRIV privative; PRT particle; PST past; PTCP participle; SG singular; SJV subjunctive; SUBL sublative

suffix *-hAtÓ*, unlike its components, cannot combine with either active transitive, or unergative, or unaccusative verbs:

(3)a. *A beteg-et **látogat-hat-ó** rokonok virág-ot hoz-t-ak.
the patient-ACC visit-POSSIB-PTCP relatives flower-ACC bring-PST-3PL
Intended: 'The relatives who can visit the patient brought flowers.'

b. *A műtét után ismét **dolgoz-hat-ó** Pál-t még kímél-ni kell.
the surgery after again work-POSSIB-PTCP Paul-ACC still spare-INF need-3SG
Intended: 'Paul, who can work again after the surgery, needs to be spared exertion.'

c. *A hang-felvétel alatt **köhög-het-ő** hallgató-k-at nem enged-t-ék be.
the sound-recording during cough-POSSIB-PTCP listener-PL-ACC not let-PST-3PL in
Intended: 'The listeners who could cough during the audio recording were not let in.'

As opposed to both *-hat* and *-Ó*, the suffix *-hAtÓ* can only merge with transitive verbs the external argument of which is not expressed, i.e., transitive verbs that are "passivized" without any visible passive morphology:

(4)a. A könyv nehezen **olvas-ható**.
the book difficultly read-HATÓ
'The book can be read with difficulty.'

b. Éva **e-hető** gombá-k-at gyűjt-ött az erdőben.
Éva eat-HATÓ mushroom-PL-ACC collect-PST.3SG the forest-in
'Éva collected edible mushrooms in the forest.'

c. Egy csavarkulcs-csal **javít-ható** autó-t szeret-né-k.
a wrench-with repair-HATÓ car-ACC like-COND-1SG
'I would like a car that can be repaired with a wrench.'

As argued by Matushansky (2025), when an affix merges with another suffix instead of combining with a stem, the morpheme complex preserves the semantic and subcategorization

features of the suffix farther away from the stem.[2] This is not what we have seen in the case of the complex suffix *-hAtÓ*: its subcategorization possibilities are more limited than the possibilities associated with either its external or internal component.

V-*hAtÓ* complexes do not share the distribution of V-*Ó* complexes, i.e., the distribution of active present participles, either. Present participles can only function as prenominal modifiers (5a,b); they cannot serve as predicates, or predicate complements to the copula (6a,b). (It is not obvious why (6a,b) are ungrammatical. Perhaps the 3rd person singular finite verb form blocks the use of the participial form in the same function.)

(5) a. [Az ablak-ot hirtelen **kinyit-ó**] szomszéd le-ver-t-e a
the window-ACC suddenly open$_{tr}$-PTCP neighbor down-knock-PST-3SG the
virág-cserep-et.
flower-pot-ACC
'The neighbor suddenly opening the window knocked down the flowerpot.'

b. [A szél-től hirtelen **ki-nyíl-ó**] ablak le-ver-t-e a
the wind-ABL suddenly out-open$_{intr}$-PTCP window down-knock-PST-3SG the
virág-cserep-et.
flower-pot-ACC
'The window suddenly opening in the wind knocked down the flowerpot.'

(6) a. *A szomszéd az ablak-ot hirtelen **kinyit-ó** volt.
the neighbor the window-ACC suddenly out-open$_{tr}$-PTCP was
'The neighbor was suddenly opening the window.'

b. *Az ablak a szél-től hirtelen **ki-nyíl-ó**.
the window the wind-ABL suddenly out-open$_{intr}$-PTCP
'The window is suddenly opening in the wind.'

A V-*Ó* complex can only be used as a predicate if it has been lexicalized as an adjective or as a noun. In (7a), the Adj category of the V-*Ó* form is indicated by the comparative suffix it

2 For related generalizations, see Haspelmath (1995) and Stump (2017).

bears, whereas in (7b) the N category of the V-*Ó* complexes is shown by the articles that they are preceded by.

(7)a. Az eredmény a várt-nál **meglepő-bb** volt.
the result the expected-ADE surprise-COMP was
'The result was more surprising than expected.'

b. Pál nem **a tervez-ő**, hanem **a kivitelez-ő** volt.
Pál not the design-er but the contract-or was
'Pál was not the designer but the contractor.'

A V-*hAtÓ* form, by contrast, can function as a predicate or predicate complement to the copula also when it is the head of a participle phrase, a mixed projection with active verbal properties, for example, when it is modified by an adverb of manner as in (8a), or when it is moved into the head position of a NegP or FocP across the verbal particle, as in (8b) and (8c) (Komlósy 1992; Kenesei – Lipták 2017; Dömötör 2025).

(8) a. Az ablak könnyen **ki-nyit-ható**.
the window easily out-open-HATÓ
'The window is easily openable.'

b. Az ablak nem **nyit-ható** **ki**.
the window not open-HATÓ out
'The window is not openable.'

c. Az ablak csak BUKÓ-RA **nyit-ható** **ki**.
the window only tilting-SUBL open-HATÓ out
'The window is openable only in the tilt position.'

If *kinyitható* 'out-openable' in (8b,c) were a lexicalized adjective, it could not be split in the sentence.

In an attempt to account for the unexpected selectional restriction of -*hAtÓ* regarding its complement, Kenesei & Lipták (2017) analyze -*hAt* and -*Ó* as separate suffixes rather than a single compound morpheme, that is, they segment V-*hAtÓ* complexes as [[V-*hAt*]-*Ó*]. They

posit two homophonous *-hAt* morphemes: *-hAt*$_1$, subcategorizing for active verbs, and *-hAt*$_2$, subcategorizing for passive verbs. They claim that V-*hAt-Ó* contains *-hAt*$_2$, but they do not explain why *-hAt*$_2$ only occurs in present participles, and why *-hAt*$_1$ is excluded from them. *-hAt*$_2$ is said to be a relatively recent development (Kenesei & Lipták 2017: 66), but it is not clarified how a suffix attaching to base verbs of all kinds for centuries could recently have developed a version that can only merge with passivized transitive verbs.

I will argue below that the explanation lies in the history of *-hAtÓ*, and that the key to this explanation is the privative suffix *-tlAn/-tAlAn/-AtlAn,* functioning as the semantic opposite of *-hAtÓ*.

3 Explanation: the analogical effect of V-*hAtAtlAn*

As was illustrated in the Introduction, a word bearing the suffix *-hAtÓ* forms an antonym pair with the adjective derived from the same verb by means of the suffix *-hAtAtlAn*, e.g., *olvas-ható* 'readable' ↔ *olvashatatlan* 'unreadable', *büntet-hető* 'punishable' ↔ *büntethetetlen* 'unpunishable'. The suffix *-hAtAtlAn* is a complex morpheme; its initial component is the same *-hAt* suffix that is also present in *-hAtÓ.* The second part, the suffix *-tlAn/-tAlAn/-AtlAn,* includes the *-tAl* privative morpheme, and the suffix *-n* deriving adverbs from adjectives (e.g., *boldog-an* 'happi-ly', *szép-en* 'beautiful-ly') (Balassa & Simonyi 1895: 575). *-tlAn/-tAlAn/-AtlAn* originally derived adverbs before it was recategorized as an adjective forming suffix.

The suffix *-tlAn/-tAlAn/-AtlAn* can attach both to nominals (mostly nouns, rarely adjectives) and to verbs. When attaching to nouns, the suffix (usually in the form *-tAlAn*) expresses the lack of an entity (a part of the referent of the noun phrase that is modified, or predicated of, by the *-tAlAn*-marked adjective):

(9)a. egy **gond-talan** **nő-tlen** férfi
a care-less wife-less man
'a carefree unmarried man'

b. A férfi **állás-talan** volt.
the man job-less was
'The man was unemployed.'

If the base noun can be combined with the adjective-forming suffix *-s*, the N-*tAlAn* complex is the antonym of the N-*s* adjective, e.g., *só-s* 'salt-y' ↔ *só-tlan* 'salt-less', *szív-es*

‘heart-y, cordial’ ↔ *szív-telen* ‘heart-less’. Kiefer (2015) generalized the formal and semantic relationship between the members of N-*s* ↔ N-*tAlAn* pairs in the following schema, where M stands for *meaning*:

(10)

ADJ		ADJ
N-(*V*)*s*	↔	N-*tAlAn*
M		~M

The privative suffix – mostly in the form -*AtlAn* – can also derive adjectives from verbs. It can combine with dynamic transitive verbs whose external argument is not expressed, e.g. *vasal-atlan* ‘unironed’, *olvas-atlan* ‘unread’. (In some cases, the suffix attaches to an unaccusative verb, e.g., *roml-atlan* ‘undeteriorated’, *ér-etlen* ‘unripe’, *sül-etlen* ‘unbaked, half-baked’. These are lexicalized adjectives; the suffix can attach productively only to passivized transitive base verbs.)

Kiefer argues that the meaning of deverbal -*AtlAn*-marked adjectives cannot be derived compositionally. The verb *vasal* means ‘iron’, and the addition of the privative suffix would yield the uninterpretable ‘un-iron’. In fact, *vasal-atlan* is the antonym of *vasal-t* ‘ironed’, the participial adjective derived from *vasal*. The meaning of the participial adjective is compositional, and the meaning of the derivative with the privative suffix is derivable from this meaning; it is the negation of the participial adjective:

(11)

ír-ott	↔	*ír-atlan*
‘written’		‘unwritten’
fűt-ött	↔	*fű-tetlen*
‘heated’		‘unheated’
kér-t	↔	*kér-etlen*
‘requested’		‘unrequested’
szkennel-t	↔	*szkennel-etlen*
‘scanned’		‘unscanned’

Kiefer represents the observed correlation with the following schema or correspondence rule:

(12)

ADJ		ADJ
V-*t*	↔	V-*AtlAn*
M		~M

The suffix -*AtlAn* frequently combines with verbs bearing the suffix -*hAt*, for example, *vasal-hat-atlan* ‘unironable’. The meaning of V-*hAt-AtlAn* is not compositional, either; *vasalhatatlan* does not mean ‘not can iron’ – but it can be derived from the meaning of its -*hat*-less counterpart:

(13)

ADJ		ADJ
V-*AtlAn*	→	V-*hAt-AlAn*
‘not V-ed, un-V-ed’		‘not possibly V-ed, un-V-able’

The V-*hAt-AlAn* complex is the antonym of the present participle derived with the suffix -*Ó* from the same -*hAt*-marked verb, as illustrated in (14) and generalized in (15):

(14)

megold-hatatlan	↔	*megold-ható*
‘unsolvable’		‘solvable’
olvas-hatatlan	↔	*olvas-ható*
‘illegible’		‘legible’
fűt-hetetlen	↔	*fűt-hető*
‘unheatable’		‘heatable’
elképzel-hetetlen	↔	*elképzel-hető*
‘unimaginable’		‘imaginable’

(15)

ADJ		ADJ
V-*hAtÓ*	↔	V-*hAtAtlAn*
M		~M

The past participle of the antonym pair V-*t* ↔ V-*Atlan* is replaced by the present participle in the schema V-*t* ↔ V-*hAtAtlAn* presumably because -*hAt*-marked verbs have no present participle derivatives (e.g., there is no participial adjective **elképzel-het-ett,* meaning ‘possibly imagined, imaginable’). The reason for this gap is unclear. Perhaps there is a semantic conflict between -*hAt*, encoding an irrealis mood, and the participle suffix -*t,* marking perfectivity and implying completedness.

As argued by Jackendoff & Audring (2016) and Boiij (2019), among others, schemas have a generative function in shaping the individual’s mental lexicon. In my view, a historical

dimension can also be attributed to them; thus, the schema in (14) likely played a decisive role in creating the V-*hAtÓ* counterparts to V-*hAtAtlAn* complexes, and subsequently in shaping the selectional and distributional properties of V-*hAtÓ* forms. As a first step, the sequence -*hAt*-*AtlAn* may have been reinterpreted as a single complex suffix – that is, the structure [[V-*hat*]-*AtlAn*] was reanalyzed as [V-[*hatAtlAn*]]. The V-*hAtÓ* structure presumably emerged as the antonym of V-[*hatAtlAn*], and in the antonym schema, V-*hAtAtlAn* exerted analogical influence on V-*hAtÓ*. The suffix -*hAtÓ* adopted the constraint requiring a passivized verbal base, and V-*hAtÓ* adopted the potential to combine with a tense marker (whether bare or carried by a copula), as shown in (16b,c):

(16) a. V-*hatAtlAn* ↔ V-*hAtÓ*
M ~M
b. V_{pass}-*hAtAtlAn* → V_{pass}-*hAtÓ*
c. [V_{pass}-*hAtAtlAn*] + Tense → [V_{pass}-*hAtÓ*] + Tense

An instance of analogical feature transmission in antonym pairs represented by the schema in (10) has already been observed. As pointed out by D. Bartha (1980: 208) and H. Varga (2006: 96), the -*At*- element preceding the -*(V)s* suffix in the second members of the antonym pairs in (17) has been transferred from the first syllable of the privative suffix -*AtlAn*:

(17) *alkalm-**at**lan* → *alkalm-**at**os*
‘inopportune’ ‘opportune’
*állhat-**at**lan* → *állhat-**at**os*
‘irresolute’ ‘resolute’
*kellem-**et**len* → *kellem-**et**es*
‘unpleasant’ ‘pleasant’
*szemérm-**et**len* → *szemérm-**et**es*
‘immodest, shameless’ ‘modest’

In sum: The suffix -*AtlAn* attached to a passivized transitive verb derives an adjective whose meaning is the antonym of the participial adjective derived from the same stem with the suffix -*t*. When -*AtlAn* is combined with the suffix -*hAt*, the meaning of the V-*hAtAtlAn* complex is the antonym of the participial adjective derived from the same stem with the suffix -*Ó* combined with -*hAt*. -*hAtÓ* is assumed to have acquired its unexpected selectional and

distributional features from its antonym in the schema V-*hAtAtlAn* ↔ V-*hAtÓ* via analogical feature transmission.

4 Eliminating an apparent counterargument

Kenesei & Lipták claim that the suffix *-hAtÓ* derives non-finite clauses rather than adjectives – even if later some of the derivatives (e.g., that cited in (7a) above) happen to be lexicalized as adjectives. If this claim is tenable, then the categorial identity between the V-*hAtAtlAn* and V-*hAtÓ* forms underlying the schema in (14)–(15) does not obtain.

Kenesei & Lipták (2017) argue for the clausal status, i.e., [-tense] TP category, of expressions containing the suffix *-hAtÓ* on the basis that in contexts involving focus or negation, the *hAtÓ*-marked verb moves to the Foc or Neg head across the verbal particle, just as the tensed verb does in finite clauses. In (18a) and (18b), containing the particle verb *el-fogad* 'accept', *fogadható* undergoes Tense-to-Neg and Tense-to-Foc movement in their view. They analyze an element with the *-hAtÓ* suffix as an adjective only if it does not separate from its verbal particle even under negation, or if it bears a degree marker – as happens in (19a,b), containing the lexicalized version of *elfogadható*.

(18) a. A dolgozat [$_{\text{NegP}}$ nem **fogad-ható**$_{\mathbf{i}}$ [$_{\text{AspP}}$ **el** t_i]]
the paper not accept-HATÓ PRT
'The paper is not acceptable.'

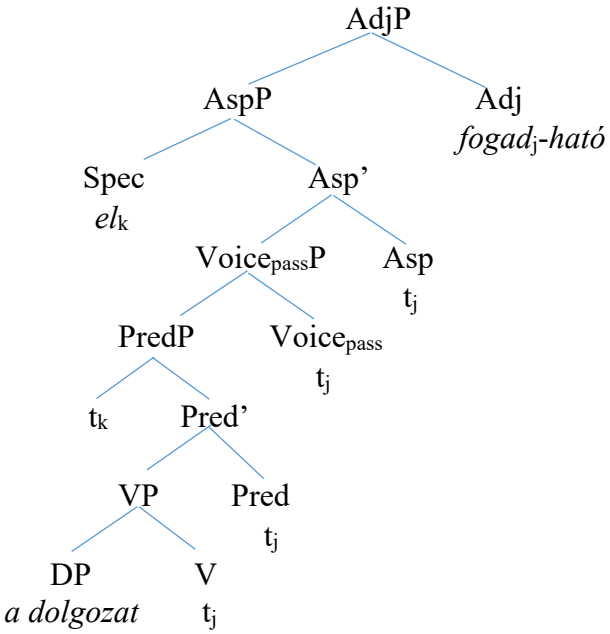
b. A dolgozat [$_{\text{FocP}}$ csak nagy jóindulat-tal **fogad-ható**$_{\mathbf{i}}$ [$_{\text{AspP}}$ **el** t_i]]
the paper only great leniency-with accept-HATÓ PRT
'The paper can only be accepted with great leniency.'

(19) a. A dolgozat nem **el-fogad-ható**.
the paper not PRT-accept-HATÓ
'The paper is not acceptable.'

b. Ez a dolgozat-a **el-fogad-ható-bb**, mint a korábbi-ak.
this the paper-3SG PRT-accept-HATÓ-COMP than the former-PL
'This paper of his is more acceptable than the former ones.'

The antonymic relationship between V-*hAtAtlAn* and V-*hAtÓ* containing the same verbal base presupposes that both elements belong to the same syntactic category. In my view, this is indeed the case. Following the Hungarian linguistic tradition and the proposals of Lundquist (2013) and Bešlin (2015), I regard the participle phrase as a mixed category where the suffix -*Ó* or -*hAtÓ,* complemented by an extended VP, is the head of an adjective phrase – as represented in (20). The VP is dominated by a PredP, whose specifier accomodates the verbal particle that forms a complex predicate with the verb (see Surányi 2009). The VoiceP above PredP is passive, suppressing the external argument. VoiceP is extended into an AspP. The verbal particle is moved into Spec,AspP, and the verb raises through the Pred and Voice positions to Asp. AspP is dominated by the AdjP layer headed by -*ható*.

(20)



The internal argument of the base verb is removed for case; in (18a,b) its case is licensed by the tense-marked adjectival predicate (or in an alternative approach, by a phonologically null tense-marked copula).

In the mixed projection in (20) the verbal particle occupying Spec,AspP is syntactically independen of the verb merging with the adjectivalizing suffix. Consequently, when the head of the projection is attracted into the head position of a dominating FocP or NegP, the movement operation does not affect the verbal particle; the V-*hAtÓ* complex moves to Foc or Neg leaving the particle behind, as seen in (18a,b). Head movement to Foc or Neg can target the heads of verbal and adjectival predicates alike, as shown in (21a,b), where V and Adj move to Neg out of their projections modified by a degree adverb in parallel fashions:

(21)a. A tengely egészen **el-ferdül-t**. / A tengely [$_{NegP}$ **nem** [$_{Neg'}$ **ferdül-t**
the axle completely off-slant-PST.3SG / the axle not slant-PST.3SG
[egészen [$_{VoiceP}$ **el** t_i]]]][3]
completely off
'The axle has slanted completely.'/'The axle hasn't slanted completely.'

b. A tengely egészen **ferde**. / A tengely [$_{NegP}$ **nem** [$_{Neg'}$ **ferde** [egészen [$_{AdjP}$ t_i]]]]
the axle completely slant / the axle not slant completely
'The axle is completely slant.' 'The axle isn't completely slant.'

It does not argue against the AdjP analysis of participle phrases, either, that participial adjectives are not gradable. As shown by Lundquist (2013), AdjPs – whether simple or mixed projections – are not gradable if they are non-scalar in nature. Since the suffix *-hAtÓ* adjectivalizes event descriptions, *-hAtÓ* phrases are not scalar.

The fact that the V-*hAtÓ* complex is an adjective heading an AdjP projection is shown by the morphological behavior of V-*hAtÓ* and by the distribution of the V-*hAtÓ* phrase. The V-*hAtÓ* form can be pluralized, which is not expected in the case of [-tense] verbs. What is more, its plural is formed just like that of adjectives. In contemporary Hungarian, the plural suffix *-k* directly attaches to stems ending in a vowel (22a), but it can be preceded by a linking vowel when the stem ending in a vowel is an adjective (Nádasdy 2026) – see (22b). V-*hAtÓ* forms can allow a linking vowel before the plural *-k* (22c).

(22) a. Holnap lesz.nek a **döntő-k/*-ek**.
tomorrow be-3PL the final-PL
'The finals will be tomorrow.'

b. Ezek az érv-ek **dönt-ő-ek**.
these the argument-PL decid-ing-PL
'These arguments are decisive.'

[3] The verbal particle can be cliticized to the verb, i.e., *A tengely nem ferdült el egészen* is also a possible spellout of the negated version of (20a).

c. Csak azok az érv-ek **fogad-ható-ak** el, mely-ek bizonyíték-ok-on
only those the argument-PL accept-HATÓ-PL PRT which-PL evidence-PL-on
alapul-nak.
be.based-3PL
'Only arguments that are based on evidence are acceptable.'

Furthermore, V-*ható* phrases share the distribution of AdjPs. AdjPs can be prenominal attributive modifiers, and predicates or predicate complements to the copula. V-*hAtÓ* phrases can appear in the very same contexts:[4]

(23) a. [$_{DP}$ A [[$_{AdjP}$ nyitott] és [$_{AdjP}$ **könnyen meggyőz-hető**]] résztvevő-k]
the open and easily persuade-HATÓ participant-PL
támogat-t-ák a javaslat-ot.
support-PST-3PL the proposal-ACC
'The open and easily persuadable participants supported the proposal.'

b. A résztvevő-k [[$_{AdjP}$ nyitott-ak] és [$_{AdjP}$ **könnyen meggyőzhető-ek**]] vol-t-ak.
the participant-PL open-PL and easily persuade-HATÓ-3PL be-PST-3PL
'The participants were open and easily persuadable.'

In view of these considerations, it can be maintaned that participial adjectives with the suffix *-hAtÓ* are heads of adjective phrases, and can therefore legitimately form an antonymic schema, or paradigm, with adjectives bearing the suffix *-hAtAtlAn*.

5 V-*hAtAtlAn* and V-*ható* structures in Old and Middle Hungarian

A condition of analogical feature transmission between elements in a paradigmatic relationship is that the source of feature transmission be more frequent than its target. In Modern Hungarian this condition is not satisfied; in the 30-million-word Modern Hungarian

[4] As mentioned in connection with examples (6a,b), the predicative use of the *-Ó* participle is blocked, presumably by the finite 3rd person verb fulfilling the same function. The question may arise why there is no blocking in the case of the predicative V-*hAtÓ* form. Actually, V-*hAtÓ* cannot be replaced by a simple finite verb. In Modern Hungarian, the external argument of a transitive verb can only be demoted in certain derivational processes; there is no passive conjugation. Consequently the predicative V-*hAtÓ* form, for example, that in (23b), could only be replaced by a more complex construction involving a modal verb and an infinitive:
(i) A résztvevő-k-et könnyen meg lehet-ett győz-ni.
the participant-PL-ACC easily PRT be.possible-PST.3SG convince-INF
'The participants could be convinced easily.'

corpus of Magyar történeti szövegtár[5], the number of items with the *-hAtÓ* suffix (62 800) is more than double the number of items with the *-hAtAtlAn* suffix (30 000). However, this was not the case in Old Hungarian. As will be demonstrated below, V-*hAtÓ* forms appeared in Hungarian much later than V-*hAtAtlAn* derivatives. The unidirectional analogical influence of *V-hAtAtlAn* emerged in parallel with the spreading of V-*hAtÓ* participial adjectives.

The privative suffix *-tlAn/-tAlAn/-AtlAn* is Ugric heritage (Csepregi 2001); it is already present in the earliest Hungarian documents:

(24) a. Vol-e-k **syrolm thudo-thlon**
be-PST-1SG woe know-PRIV
'I was ignorant of woe'
(Ómagyar Mária-siralom, late 13th c., *OHC*)[6]

b. **utal-atlon** fugadat-ia-t
hate-PRIV reception-POSS.3SG-ACC
'its unhated reception'
(Königsbergi töredék, 14th c., *OHC*)

The *-tlAn* suffix can attach productively only to nouns and to the passive stem of transitive verbs, and there are lexicalized *tlAn*-marked adjectives derived from unaccusative verbs and from adjectival bases, as well (*boldog – boldog-talan* 'happy – unhappy', *komoly – komoly-talan* 'serious – unserious') – but it does not combine with active transitive verbs. The V-*tlAn* form in (24a) contains the active transitive base verb *tud* 'know', but the fact that its object is caseless suggests that *-tlan* combines here with a participial AdjP headed by *tudó* 'knowing' – because only non-finite verbs could take a caseless object in Early Old Hungarian. (24b), where *-tlAn* attaches to a transitive verb with no external argument, represents the pattern that is productive today.

The earliest surviving book-length documents, Jókai Codex, Vienna Codex, and Munich Codex, contain instances of the complex *-hAtAtlAn* suffix, as well (Szegfű 1992: 269), e.g.:

[5] https://nagyszotar.nytud.hu/corpus.html
[6] The Old Hungarian examples are cited from the Old Hungarian Corpus, *OHC* http://omagyarkorpusz.nytud.hu, Simon és Sass 2012.

(25) a. **meg feyt-het-etlen** prophetalas le-g-en cristus-nak
PRT decipher-POSSIB-PRIV prophecying be-SJV-3SG Christ-DAT
gÿczeret-ÿ-re
praise-POSS-for
'let the undecipherable prophecying be to the glory of Christ'
(Jókai Codex, 1370/1448: 63, *OHC)*

b. **tv̇r-hèt-ètlèn** remọlèt ès-é-c ọ-reia-ioc
bear-POSSIB-PRIV terror fall-PST-3SG they-upon-3PL
'unbearable terror fell upon them'
(Vienna C., 1416/1450: 1/42, *OHC*)

The Old Hungarian Corpus[7], comprising codices and short textual fragments from the period 1195 – 1539, as well as 16th century and early 17th century Bible translations, contains 890 words with the suffix *-hAtAtlAn*. These include many recurring word forms; for instance, the search yields 190 instances of *mondhatatlan* 'unspeakable', 68 instances of *halhatatlan* 'immortal', and 81 instances of *lehetetlen* 'impossible', derived from *lehet* 'maybe', the perfective copula bearing the possibility suffix, lexicalized as a modal verb. The 890 examples contain 104 different verb stems – some combining with multiple verbal particles; of these, 76 are transitive verbs with their external argument demoted (73%) and 28 are unaccusative verbs (27%). Examples derived from passivized transitive verbs include *lát-hatatlan* 'invisible', *(meg)számlál-hatatlan* 'innumerable', *(meg/el)gondol-hatatlan* 'unimaginable', *győz-hetetlen* 'invincible', *(meg)mér-hetetlen* 'immeasurable', *megfejt-hetetlen* 'unsolvable', *mond-hatatlan* 'unspeakable', and *tűr-hetetlen* 'intolerable'. Examples derived from unaccusative verbs include *lehetetlen* 'impossible', *ég-hetetlen* 'incombustible', *meggyógyul-hatatlan* 'unhealable', and *hal-hatatlan* 'immortal' – the latter likely coined by Bible translators as the Hungarian equivalent for the Latin *immortalis*, as well as *tel-hetetlen* 'insatiable', and *meghervad-hatatlan* 'unwithering', cited in the examples under (26):

(26) a. hogÿ vezedelmes-b le-gy-en pocol tewz-e-nek **tel-het-ettlen**
that dangerous-COMP be-SJV-3SG hell fire-POSS-DAT satiate-POSSIB-PRIV
lang-a

[7] http://omagyarkorpusz.nytud.hu/en-intro.html

flame-POSS
'that the insatiable flame of the fire of hell be more dangerous'
(Vienna C., 1416/1450: 151, *OHC*)

b. akoron vee-gy-etek az erek dyczṓsegh-nek **megh herwat-hat-atlan**
then take-IMP-2PL the eternal glory-DAT PRT wither-POSSIB-PRIV
korona-ya-th
crown-POSS-ACC
'then take the unfadig crown of eternal glory'
(Jordánszky C., 1516: 854, *OHC*)

Forms with the suffix *-hAtÓ b*ecame widespread much later than adjectives with *-hAtAtlAn*. In the Old Hungarian Corpus, containing 890 words derived with *-hAtAtlAn*, I found only 47 items ending in *-hAtÓ*.[8] Only six of the 47 examples appear in 15th-century codices; the remaining data come from 16th-century and early 17th-century documents. The 47 examples involve 23 different base verbs combined with *-hAtÓ*. Only 13 of these base verbs are passivized transitive verbs that, with the suffix *-hAtÓ*, exhibit the pattern that is productive today. For example:

(27) a. meǵzamlal-a a fẻrfiak-at … zaz huz èzèr **vi-hato**
count-PST.3SG the men-ACC hundred twenty thousand take-HATÓ
galoǵ-ok-at 7 louaǵ-ok-at
footsoldier-PL-ACC and mounted.soldier-PL-ACC
'He counted the men…one hundred and twenty thousand movable footsoldiers and mounted soldiers'
(Vienna C. 1416/1450: 12, *OHC*)

b. mert oth vaǵon **tapaztal-hato** setetseg
because there is perceive-HATÓ darkness
'because there is perceptible darkness'
(Nádor C. 1508: 36v, *OHC*)[9]

[8] This number does not include occurrences of *minden-ható* 'almighty', lit. 'all-effecting', as it contains the adjectival participle form of the verb *hat* 'affect, effect' rather than the suffix *-hAtÓ*.
[9] *v* abbreviates *verso* 'on the reverse side'.

Four of the verbs combined with *-hAtÓ* are unaccusative – see (28a,b). The most common among them, *lehető*, must be a participial adjective derived from *lehet* ‘maybe’, a modal derivative of the copula, i.e., it is to be segmented as [[*le-het*]-*ő*].

(28) a. Èmberec-nèl èz *lèhetetlen* istē̄-nèl ke· mēden-ᶜ **lèhètọ-c**
men-ADE this impossible good-ADE however all-PL possible-PL
‘With men this is impossible; but with God all things are possible.’
(Munich C. 1416/1466: 25r, *OHC*)

b. a' **meg** nem **vesz-hető**, és **meg** nem **ferteztet-hető**, és **meg** nem
the PRT not perish-HATÓ and PRT not corrupt-HATÓ and PRT not
hervad-hato ő̊rő̊kség-re
wither-HATÓ inheritance-to
‘to the inheritance that is not perisable, not corruptible, and not fadable’
(Káldi 1626: 1116, *OHC*)

Six verbs combined with *-hAtÓ*, e.g., those in (29a,b), are active transitive verbs. There are no examples of *-hAtAtlAn*-marked adjectives derived from active transitive verbs, hence these forms presumably did not originate as antonyms of adjectives with *-hAtAtlAn*. More generally, there could not yet have been a systematic correspondence between word forms with the suffixes *-hAtAtlAn* and *-hAtÓ*.

(29) a. Gondol-a … megh zamlal-tat-ni ez uilag-on han orzag-ok
think-PST.3SG PRT count-CAUS-INF this world-on how.many country-PL
uo-na-nak: … es han **feguer-fok-hato** embọrọk
be-COND-3PL and how.many arms-take.up-HATÓ men
‘He thought to have it counted how many countries there could be in the world, and how many men capable of taking up arms’
(Tihanyi C. 1531: 24v, *OHC*)

b. Mert meeg cristus vr-onk es · meg kyssebeyt-et-evt angel-ok-nal
for even Christ lord-1PL also PRT lessen-PASS-PRF.3SG angel-PL-ADE
az ev **keen** **zenued-hetev** elet-e-nek ok-a-ert

the he torment suffer-HATÓ life-POSS-DAT reason-POSS-for
'For even our lord Christ was made smaller that the angels through his life suffering torment'
(Horvát C. 1522: 46r, *OHC*)

In most of these examples, like in the case of (28a), we are likely dealing with a participial adjective derived from a verb bearing the *-hAt* suffix, exhibiting the structure [[[V]-*hat*]-*Ó*].

In the Hungarian Historical Corpus of Informal Language (HCI)[10], containing data mostly from the Middle Hungarian period (1527–1772), the ratio of forms with the suffixes *-hAtAtlAn* and *-hAtÓ* is already more balanced. There are 180 words bearing the suffix *-hAtAtlAn* and 181 ending in *-hAtÓ* – although half of the latter group is made up of occurrences of *hihető* 'believable' and *tűrhető* 'tolerable'. The number of base verbs combining with *-hAtÓ* is 45, and 33 (73%) of them are already passivized transitive verbs bearing the complex *-hAtÓ* suffix (rather than separate *-hAt* and *-Ó* suffixes). For example:

(30) a. Kegyelm-ed is, Édes Szív-em, … az Isten **tapasztal-ható** segítség-é-t
grace-2SG too sweet heart-1SG the God perceive-HATÓ help-POSS-ACC
meg-lát-ja.
PRT-see-3SG
'Your Grace, my sweetheart, will also see God's perceptible help.'
(Bark. 14. 1703, *HCI*)

b. Az gyalog-unk-ban, ugy hisz-em, mind magyar s német, franczia
the infantry-1PL-in so think-1SG all Hungarian and German, French
megszámlál-ható az ki eljött
count-HATÓ that who came
'In our infantry, I think, all the Hungarians, German, French, who came, are countable.'
(Kár. 27. 1705, *HCI*)

The Middle Hungarian corpus still includes some instances of *-hAtÓ* suffixes attached to unaccusative verbs (31a) and active transitive base verbs (31b) that are not lexicalized forms;

[10] https://HCI.nytud.hu/; see also Dömötör et al. (2017); Novák et al. (2018)

they must be participial adjectives derived from *-hAt*-marked verbs. The small number of such examples indicate that the possibility of deriving present participles from unaccusative and active transitive verbs was disappearing – perhaps because of the blocking effect of the emerging complex *-hAtÓ* suffix.

(31) a. mi-vel kelle-ne az szegény Feleség-em láb-a-t orvosla-no-m,
what-with need-COND.3SG the poor wife-1SG leg-POSS-ACC cure-INF-1SG
gjógyúl-hat-atlan é vagj **gjógjúl-hat-ó?**
heal-POSS-PRIV Q or heal-POSSIB-PTCP
'What should I cure my poor wife's leg with? Is it unhealable or healable?'
(Bosz. 61. 1716, *HCI*)

b. Az élete-t, áldas-t, és bekesség-et nagy böven **parontsol-hat-o** Isten
the life-ACC blessing-ACC and peace-ACC very amply order-POSSIB-PTCP God
az Úr-ra … parantsol-y-on viragzó elet-et,
the master-on order-SJV-3SG florishing life-ACC
'God, capable of ordering life, blessing, and peace, should order flourishing life for the Master.'
(Peregr1. 53. 1716, *HCI*)

The Old and Middle Hungarian data presented above support the chronological primacy of the suffix *-hAtAtlAn* over the suffix *-hAtÓ*. While *-hAtAtlAn* can be traced back to our earliest linguistic records, with nearly 900 examples in the Old Hungarian Corpus, only a few dozen Old Hungarian examples with *-hAtÓ* are found, and almost half of them appear to contain separate *-hat* and *-Ó* suffixes rather than the compound *-hAtÓ* suffix. The proportion of words with *-hAtÓ* increased during the Middle Hungarian period, a time when the analogical influence of *-hAtAtlAn* also became apparent. Within the Middle Hungarian material of the Historical Corpus of Informal Language, the 73% share of passivized transitive base verbs among forms with *-hAtÓ* approaches the 77% share observed for adjectives with the suffix *-hAtAtlAn*.

The majority of words with *-hAtÓ* found in the Old Hungarian Corpus and the Historical Corpus of Informal Language have a corresponding form with *-hAtAtlAn* – for example: *lehetetlen* vs. *lehető* '(im)possible', *gyógyulhatatlan* vs. *gyógyulható* '(un)healable', *tűrhetetlen* vs. *tűrhető* '(in)tolerable'. *hihetetlen* vs. *hihető* '(un)believable', *szenvedhetetlen*

vs. *szenvedhető* ‘(in)sufferable’, *tehetetlen* vs. *tehető* ‘(un)feasible’. Sentences contrasting adjectives with the suffixes *-hAtAtlAn* and *-hAtÓ* can also be found – see (28a) and (31a). I hypothesize that the pattern in (32), generating a gradually increasing number of V-*hAtÓ* forms, emerged in sentences containing such contrasting pairs.

(32) V-*hAtAtlAn* → V-*hAtÓ*
M ~M

The analogical influence of V-*hAtAtlAn* also extended to the selectional features of *-hAtÓ*, and the distributional characteristics of the emerging V-*hAtÓ* form. The range of possible base verbs for *-hAtÓ* – similarly to those for *-hAtAtlAn* – became restricted to passivized transitive verbs. At the same time, the potential uses of the V-*hAtÓ* form expanded; similar to V-*hAtAtlAn* adjectives, the V-*hAtÓ* form became usable as a tensed predicate or as part of a tensed complex predicate.

(33) [V_{pass}-*hAtAtlAn*]+Tense → [V_{pass}-*hAtÓ*]+Tense

The paradigmatic levelling between the *-hAtAtlAn* and *-hAtÓ* adjectives continued into the Modern Hungarian period. The reverse dictionary of Hungarian (Papp 1969) contains 166 deverbal adjectives bearing the suffix *-hAtAtlAn,* 150 of which are derived from passive verb stems, representing the pattern that can also be generated productively. Each one of these adjectives has an antonym formed with the suffix *-hAtÓ* (even if only 82 of them are listed in the reverse dictionary). 16 adjectives with the suffix *-hAtAtlAn* are derived from unaccusative base verbs, and only two of them have V-*hAtÓ* antonyms (*éghető* ‘inflammable’ and *lehető* ‘possible’).[11] The fact that each regularly derived V-*hAtAtlAn* form has a V-*hAtÓ* equivalent confirms the generative function of the antonymic schema.

[11] Actually, the suffixes *-hAt* and *-Ó* can still be applied sequentially in present-day Hungarian, albeit marginally. In such cases, the analogical influence of the *-hAtAtlAn* suffix does not apply, e.g., the base verb can be unaccusative or unergative. Such constructions have a special, elaborate, or ironic stylistic value:

(i) A könnyen **megromol-ható** étel-ek-et tart-s-uk a hűtőszekrény-ben.
the easily perish-HATÓ food-PL-ACC keep-SJV-1PL the refridgerator-in
‘Let us keep easily perishable foods in the refrigerator!’

(ii) ?A kérelm-et **engedélyez-hető** ügyintéző szabadság-on volt.
the request-ACC grant-HATÓ case.officer leave-on was
‘The case officer authorized to grant the request was on leave.’

In sum: Whereas V-*hAtAtlAn* adjectives have been part of Hungarian throughout its documented period, V-*hAtÓ* forms only emerged in the 15th century and started spreading in the 16th century. Sporadically appearing antonym pairs derived by the suffixes -*hAtAtlAn* and -*hAtÓ* from the same base verb resulted in the emergence of a schema that generated V-*hAtÓ* antonyms to the existing V-*hAtAtlAn* forms, and whose dominant V-*hAtAtlAn* member also influenced the selectional properties of the -*hAtÓ* suffix and the distributional characteristics of the V-*hAtÓ* complex.

6 Conclusion

In this paper, I sought to explain the fact that the compound suffix -*hAtÓ* has properties that are different from the properties of its constituent parts. Whereas the possibility suffix -*hAt* and the present participle suffix -*Ó* can individually attach to verbs of any kind, -*hAtÓ* productively combines only with verbal projections containing a transitive verb with no external argument. Furthermore, whereas participles derived with the -*Ó* suffix (lacking -*hAt*) cannot function as the predicates or predicate complements of tensed clauses, expressions with the -*hAtÓ* suffix can be used predicatively. I argued that words with the -*hAtÓ* suffix emerged in the language as antonyms to adjectives bearing the -*hAtAtlAn* suffix, and acquired their unexpected features from the latter through analogy. Modeled on -*hAtAtlAn*, -*hAt*+*Ó* was reanalyzed as a single complex suffix, adopting the selectional constraints of -*hAtAtlAn* and the distributional properties of V-*hAtAtlAn*. At the same time – as predicted by Matushansky's (2015) theory – the complex -*hAtÓ* suffix retained the original function of the -*Ó* element: that of deriving a participial adjective, a mixed projection.

In Modern Hungarian, the number of V-*hAtÓ* forms far exceeds the number of V-*hAtAtlAn* adjectives. However, historical linguistic data indicate that the spreading of adjectives with the suffix -*hAtAtlAn* predated the emergence and spreading of their -*hAtÓ*-suffixed counterparts by centuries; thus, chronological evidence supports the hypothesized unidirectional analogical influence between the members of these antonym pairs.

Analogy is a well-known source of morphosyntactic changes; nevertheless, the data surveyed above also offer new theoretical insights. On the one hand, they demonstrate that antonym pairs can serve as contexts for analogical influence. On the other hand, they call attention to the fact that the quantitative prominence of the source category over the target in an analogical relationship may persist only temporarily, and may subsequently level out or be lost.

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