Papers from the Second International Workshop on the Syntax of Predication and Modification

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Preface

The Second International Workshop on the Syntax of Predication and Modification (IWSPM 2025) was held at Hungarian Research Centre for Linguistics, Budapest, Hungary on September 1-2, 2025. The major objective of this workshop was to foster fruitful dialogue between researchers through analyses of a selection of construction types involving predication and modification. The present volume includes 5 papers, which represents the outcome of IWSPM 2025. The workshop was organized in collaboration with a research mobility project between Japan and Hungary (The JSPS Bilateral Joint Research Project (JPJSBP 120243802)). The publication of the present volume is supported by the JSPS Grant-in-Aids for Scientific Research (C) (Grant no. 24K03840).

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On diachronic variation and change of *aligha* 'unlikely' and *alighanem* 'probably': from low intensity to epistemic modality*

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Abstract
This paper investigates changes in the distribution of the Hungarian epistemic and inferential modifiers *aligha* 'unlikely' and *alighanem* 'probably'. Before the late 19th century, *aligha* predominantly expressed high probability which was syntactically marked by a negative particle (as a case of double negation). In Modern Hungarian, however, it primarily marks the negative pole by default, being incompatible with affirmative responses – which is an atypical feature among Hungarian modifiers. The extensive analysis of historical data, covering sources from the 16th to the mid-20th century, highlights that the structural characteristics of the host sentences containing *aligha* have also changed. Before the late 19th century, when *aligha* appeared in affirmative sentences, the predicate displayed neutral word order, whereas in Standard Modern Hungarian *aligha* triggers inversion between the verb and the verbal prefix. The study compares and contrasts functional variants in order to find plausible motivations for the observed changes.

Keywords: epistemic and inferential modification; historical corpus analysis; functional variation; word order; Hungarian; *aligha*; *alighanem*

1. Introduction

In standard Modern Hungarian, the epistemic and inferential modifier *aligha*, meaning 'barely' and 'unlikely', depending on the context, primarily expresses that the occurrence of the event it introduces or the existence of the state is unlikely. In the Hungarian Gigaword Corpus which contains recent Hungarian data, *aligha* 'probably not' has more than 27000 instances (for the description of the database, see Oravecz, Váradi, and Sass 2014). Consider (1).[1]

(1) *Rend, az persze aligha lesz*
order that of-course unlikely be-FUT-3SG
'Order, that unlikely will be.' (MNSZ2, #215159, 2003)

* This paper was presented at The 2nd International Workshop on the Syntax of Predication and Modification (IWSPM 2025) held in Budapest, Hungary on September 1-2, 2025. The research was funded by National Research, Development and Innovation Office – Hungarian Scientific Research Fund (NKFIH – OTKA) project grant 135186.: Variation in Middle Hungarian: a register perspective.

[1] Early Modern and Modern Hungarian data are cited according to corpora, with reference to database, to the identifier of the source and the year of the publication given as metadata.

The modifier *aligha* is used less frequently to express high probability as well: in this case, however, the form is different. *Alighanem* 'probably, likely' has less than 15000 instances in the Hungarian Giga-word Corpus. This is illustrated in (2).

(2) *Mit* *rugdos?* *– Alighanem* *labdát*
what-ACC kick.3SG probably ball-ACC
'What is he kicking? – Probably a ball' (MNSZ2, #977971, 2003)

Thus, as Modern Hungarian data suggests, *aligha* 'barely, unlikely' marks the negative pole that is incompatible with an affirmative response by default while those that refer to the positive pole are marked lexically and they occur less frequently. Nevertheless, *aligha* is a rather unique modifier in this respect, since marking the negative pole is an atypical feature for modifiers in Hungarian (Kugler 2009). The Second Edition of *the World Lexicon of Grammaticalization* (Kuteva et al. 2019) does not mention any examples suggesting that it is uncommon in other languages as well. Nevertheless there was a modifier in Middle English, *unethes* which collocated both with *any* and *n*-series (e.g. *never*), unlike *hardly* (Tubau and Ingram 2015).

The present paper argues that the current distribution of forms and functions of *aligha* is the result of a change that can be observed during the 19th century, according to historical corpus data (Section 3). Between the 16th and the 18th centuries, *aligha* predominantly expressed high (positive) probability, typically in clauses containing a negative particle, as it is shown in (3).[2]

(3) *Urunk* *aligha* *le* *nem* *megyen*
lord-POSS-1SG unlikely VPFX not go-3SG
'Our lord probably goes down.' (TMK, Kár. 32., 1705)

During the Early Modern Hungarian Period, the negative particle fused with the modifier *aligha*, giving rise to *alighanem* 'probably, likely' (Simonyi 1881, Klemm 1928–1942, D. Mátai 2003). *Aligha* followed directly by *nem* can be attested as early as the 17th century, though it only lexicalized in the 19th century. The details of this change and its structural consequences are insufficiently explored yet (on recent use, see Kugler 2009, 2013, 2014).

The phenomenon under scrutiny does involve some syntactic implications to be unraveled, although this paper does not aim to describe this change within a specific theoretical framework. The main research questions are the following:

1. If *aligha* occurs in the negative sentence that contains a verb with a verbal prefix (or particle), what word order pattern do they exhibit?
2. Similarly, what word order does the affirmative sentence exhibit containing *aligha* and a verb with a verbal prefix (or particle, depending of the approach)?
3. Can any change be observed regarding a) the spread of *alighanem* 'probably' and b) the spread of *aligha* 'probability not' and what are these changes?

[2] Historical data are cited in a normalized form: the spelling reflects to Modern Hungarian, while the original morphologic structures are preserved. For full citations, see Sources.

Until the 19th century, the VPFX–NEG–V was the default order in negative sentences, e.g., (3) *le* (VPFX) – *nem* (NEG)– *megyen* (V). This is claimed to be a heritage from *ha* 'if', a constituent of *aligha* (Kugler 2009, Gugán 2021).V

In Modern Hungarian neutral sentences, the word order of verbs with a verbal prefix is VPFX–V. Earlier research suggests that clauses with among others *alig* meaning 'hardly, barely' are non-neutral in that respect that the 'at least' interpretation is excluded and the negative polarity adverbial triggers inversion of the verbal prefix (or particle) and the verb due to its exclusive behavior (É. Kiss 2006). Kugler (2009, 2013) argues that in Modern Hungarian, *aligha* behaves similarly due to the restrictive use of one of its constituent *alig*, which *aligha* inherited. For example, *aligha oldotta* (V) *meg* (VPFX/PRT) '(s)he barely resolved it' is grammatical, while the order *aligha megoldotta* (VPFX–V) is ungrammatical. The present study investigates this problem involving qualitative and quantitative analysis on historical linguistic material (for the details, see Section 4) where the changing ratios of negative and affirmative patterns and the related structural variations and developments are concerned. The question of the interaction between negation and probability is also examined as well as the scope of *aligha* and *alighanem*.

The outline of the paper is as follows. First, the constituents of the compound *aligha* – *alig* 'hardly, barely' and *ha* 'if' – are described. Section 2 also raises the question that *aligha* may have been grammaticalized from a bi-clausal structure (Simonyi 1881, Klemm 1928-1942, Kugler 2009, 2013). Because of the insufficiency of the available actual historical linguistic data, many aspects of the question remain open. Then, the studied sources and the method of the analysis is provided (Section 3). This is followed by the corpus analysis, comparing and contrasting Middle Hungarian, Early Modern Hungarian, and Modern Hungarian data (Section 4). Finally, the structural aspects raised by the studied corpus data are discussed, especially the syntactically marked *aligha* [..] *nem* and the changes in the word order.

2. *Alig, ha, aligha* (*nem*): Origin and open questions

To describe *aligha* in advance: it is a compound of two constituents, namely the adverbial *alig* which is a lexicalized inflected form of *al* meaning 'lower part' and the terminative suffix *-ig*, meaning 'to a low extent ~ with difficulty'. Therefore, *alig* is a minimizer with the meaning 'to a very low degree, barely'.[3] Consider (4) and (5).

(4) *mely számot embernek ő elméje*
which number-ACC people-DAT (s)he mind-POSS-3SG
csak alig avagy nagy nehezen foghatja be
only barely or great hardly grasp-MOD-3SG VPFX
'which number the human mind can only grasp barely or with great difficulty'(ÓMK, ÉrsK.)

[3] *Alig* has a variety of meanings since Old Hungarian, such as collocations expressing intensity, *alig vár* 'hardly can wait', e.g.: *Alig várnám, hogy általesném rajta*. 'I can hardly wait to get through it' (TMK, Bark. 297.); near simultaneity or anteriority e.g.: *Haller Gábor Uram, alig szálltam meg, mindjárt érkezett* 'Mr. Gábor Haller, I had barely settled in, when he arrived' (TMK, Bark. 259.); low quantity: *alig van három lépésnyire tőlem* 'it is barely three steps away from me' (Székely László). However, most of these uses are over the scope of the present paper.

(5) *járni való ereje is alig volt*
walk-INF be-PRS strength too barely was
'he barely had the strength to walk.' (TMK, Bosz. 400., 1767)

Meanings 'to a very low degree' and 'with difficulty' can be regarded as sources for the development of the meaning 'probably (not)', such as in (6).

(6) *isteni édességet kér, de csak alig,*
divine sweetness-ACC ask-3SG but only barely
avagy soha meg nem nyerheti
or never VPFX not win-MOD-3SG-DEF
'asks for divine sweetness, but can only barely, or never get it' (ÓMK, VitkK.)

The second part of the compound is *ha* meaning 'if', which is the conjunction of conditional clauses, originally with temporal and 'whether' meanings (see Klemm 1928-1942, Juhász 1991). The meaning 'whether' is still actively used in the Middle Hungarian period (before 1772) but the temporal 'when' has become obsolete.

Aligha is described as a compound where the constituents are not related syntactically (D. Mátai 2003: 658, 2011: 268). Also, *alig* and *ha* have only one common use as a minimizer meaning 'barely', but specifically restricted to quantities (7).

(7) *lovag, gyalog ötezer, ha volt.*
knight foot-soldier five-thousand if was
'five thousand of knights and foot soldiers, if there were that much' (TMK, Tel. 35.).

A very similar meaning can be constructed with *alig* as well (see Footnote 2). The former example is related to probability in a broad sense since it does not address the question whether there were any knights or foot soldiers but how many of them were there.

Aligha as a compound can be attested as early as the 16th century. It is claimed to be grammaticalized from a bi-clausal structure (Simonyi 1881, Klemm 1928–1942, Kugler 2009). However, no actual linguistic data have yet been found to confirm the actual preceding structure (Gugán 2021). According to earlier approaches, the possible candidates for the main verb are *van* 'is' or *lehet* 'may/can be' (Simonyi 1881, Klemm 1928–1942), and *hisz* 'believes' is also mentioned (Simonyi 1881). The available historical data do not confirm the assumptions regarding the verb *van* or *lehet*. Main clauses involving *alig van* 'it is barely' or *alig lehet* 'it can be barely' are only exceptionally attested with a negative particle in the subordinate clause (see also Gugán 2021). Also, *alig lehetséges* 'barely possible' is attested only in the 20th century.

The conjunction *ha* 'if' does not appear in these clauses either. If there is a bi-clausal structure with *van* 'is' or *találkozik* in this context, meaning 'can be found', it connected with a relative pronoun *amely* or *mely* 'which'. Additionally, probability is a rather atypical semantic component of the instances under examination. Instead, *alig van* typically expresses a low degree – there is hardly any time, strength, and means – or a state that is difficult to maintain.

(8) *Magam a nagy katarusba csak alig vagyok*
myself the great cough-INE only barely be-1SG
'Because of the heavy cough, I myself am only barely [alive].', Bark II. 512, 1720).

Simonyi (1881) argues that *alighogy* 'almost' also occurs with the meaning of *aligha* and is easier to explain. The problem with this explanation is, that, according to Middle Hungarian data, *alighogy* indicates avertive relationship, suggesting that a given past event was imminent but ultimately did not occur (see. Gugán and Varga 2025), as in (9):

(9) *alighogy pofán nem csapám*
barely-that face.on not slap.PST-1SG
'I almost slapped him on the face' (Székely László, 1763–1771)

From a structural point of view, the two constructions share the presence of a negative modifier *nem* and the VPFX–NEG–V order. Additionally, *alighogy* is also a compound where the constituents *alig* 'hardly, barely' and *hogy* 'that' are syntactically unrelated. Historical studies on the Old Hungarian period claim that *hogy* 'that' tends to collocate with other conjunctions and other elements (e.g. *merthogy* 'because', *úgyhogy* 'so, therefore') due to its frequency, semantic bleaching, and functional diversity (Juhász 1992: 789, Haader 1995: 650–651).

However, in the case of *alighogy*, the original bi-clausal structure can also be attested. These tend to contain a main verb indicating that an undesirable event has been avoided. This also confirms that the component *hogy* is the conjunction of complement clauses, not a modal determiner 'how' since the occurrences are subordinated specifying the object: the event which was (almost not) avoided. Consider (10).

(10) *hirtelen ránk jöve nagy szélvész:*
suddenly on-us come-PST.3SG great windstorm
csak alig szaladhattunk egy kis szakadékban,
only barely run-MOD-1PL a small ravine-INE
hogy mind oda nem veszénk
that all away not sweep-PST-1PL
'Suddenly, a great storm came upon us: we could **barely** run into a small ravine to avoid being swept away.' (Thököly Imre, 1693)

Returning to the plausible bi-clausal origins of *aligha* as a compound, Simonyi (1881) also suggests that the main verb presumably was *hisz* 'believe'. According to Middle Hungarian data, the subordinate clause of *alig hisz* 'barely believes' occurs both with *hogy* and without any conjunction, and, only very rarely with *ha* 'if', as in (11) and (12):

(11) *kit alig hiszek, ha*
which-ACC barely believe-1SG if
megint más útra nem kelletik uramnak fáradni
again another path-onto not must man-DAT take-trouble-INF
'I believe my man probably will have to take another path.' (letter: MHöLev Nr. 138., 1607);

(12) *én alig hiszem,*
I barely believe-1SG
ha Gáspár uram nem morgotta el.
if Gáspár Mr. not grumble-PST-3SG VPFX
'I believe Mr. Gáspár probably grumbled about it.' (correspondence of Mihály Teleki, Vol. 2. Nr. 89., 1661).

The subordinate clause can be both negative or affirmative, but in the latter case the verb appears in the subjunctive (imperative or conditional) mood, a feature that may indicate the event is non-veridical.

The construction *nem hisz* 'does not believe' is also attested with a negative subordinate clause containing an imperative or conditional verb, yielding double negation and thus expressing high probability, similar to *aligha*, though the conjunction is typically *hogy* or zero. The further investigation of the original bi-clausal structure is beyond the scope of this paper in the absence of data.

3. Data and method

Turning to the present study, data were collected from the available digital historical corpora of Hungarian. The earliest written sources come from the Old Hungarian Period (before the first decades of the 16th century). *Aligha* is neither attested in contemporary codices nor in smaller secular records (cf. Old Hungarian Corpus, Simon and Sass 2012).

Considering the Middle Hungarian period (between the years 1526 and 1772), two digital databases are available. The Old and Middle Hungarian Corpus of informal language use (here abbreviated as TMK, for the description, see Novák et al. 2018) contains private letters and records of witch trials, especially witness depositions (consisting of more than 1.1 million tokens). *Aligha* was found with 34 instances (that is about 3 per 100,000 tokens), in three cases it was followed by *nem* (thus *alighanem* 'probably'). The Corpus of Middle Hungarian memoirs and dramas (here abbreviated as KED, consisting of more than 200,000 tokens) had one instance of *aligha*. Since some of the memoirs are sampled in the database, the full length texts were processed by using AntConc (Anthony 2023) resulting in three more occurrences. Contemporary letters, dramas, and religious prose out of corpora were also processed with AntConc or fully manually (amounting to more than 3 million words of texts). In total, 194 instances were found from the Middle Hungarian period.

Regarding the Early Modern and Modern Hungarian Period, the Hungarian Historical Corpus (here abbreviated as MTSZ, for the description, see Sass 2017) was consulted. Since the texts are not normalized, word forms and character sequences were queried as well ("alig ha" and "alig, ha", in total, 55 instances). In the case of the forms *aligha* and *alighanem*, samples were taken: 600 instances of *aligha*, from the earliest occurrences, i.e. 1793 to 1959 and 244 data points of the fused form *alighanem*, because those fall before 1959. In the case of *aligha*, the sample covers about half of the instances available from MTSZ, and in the case of *alighanem*, more than a third of the occurrences.

The aforementioned Hungarian Gigaword Corpus was consulted in order to find out whether the form *aligha* [...] *nem* is still attested. About fifty occurrences were found, all from archaic literature and historical sources, not particularly representing present-day language use.

Data were tagged manually according to the following aspects and research questions:

- form of the modifier (*aligha, aligha* [...] *nem*, or *alighanem*);[4]
- function: likeliness or improbability;
- clause: affirmative or negative;
- the scope of *aligha*
- word order of the verb with a verbal prefix;
- distribution of the data across sub-periods

From the register point of view, the majority of the Middle Hungarian data comes from letters, while Modern Hungarian data mostly come from fictional prose.

4. Corpus study

First, the variation and change of the functions of *aligha* and *alighanem* are examined. In other words, the ratios of how frequently *aligha* express improbability and likeliness in Middle Hungarian, in Early Modern and Modern Hungarian are determined and how this feature affects some of the structural characteristics of the clauses in which *aligha* and *alighanem* appear. Then, the study focuses on the word order of the predicates with verbal prefix and whether it is affected by the functional change of *aligha*.

4.1. Function and variation in the Middle Hungarian period

The distribution of *aligha* according to function during the Middle Hungarian period is observed as follows. The modifier under scrutiny predominantly indicates that the occurrence or state of affairs is very probable (90%), mostly expressed by the form *aligha* (see Figure 1).

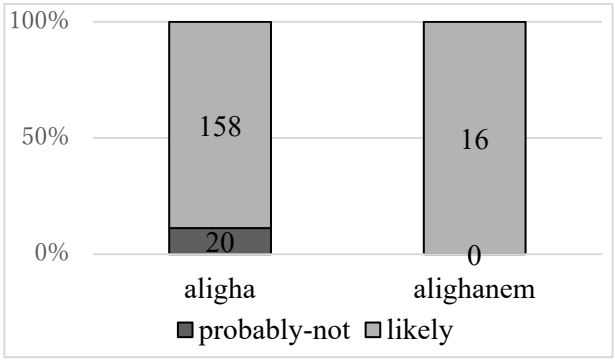

Figure 1: The distribution of *aligha* according to meaning between the 16th and 18th century (in total: 194 instances, sources: TMK, KED and manual data-collection)

Structure and function correlate with each other: improbability is always expressed in affirmative sentences (20 instances, 100%), while probability is expressed almost exclusively in negative sentences (173 instances, 99%). This feature can be regarded as a case of double negation, since *aligha* in itself belongs to the negative pole, and the addition of the negative particle triggers the highly probable (positive) interpretation (Gugán 2021). Note that the clause may contain not the negative particle *nem* 'no, not' but the negative form of the substantive verb, *nincs* 'not exist'. Consider (13).

[4] If *aligha* and *nem* occur directly adjacent, they are considered as *alighanem*, even if they are written separately in the historical sources since the published volumes followed different orthographic patterns.

(13) *Besenyei István szegény Csomaközi is aligha oda*
Besenyei István poor Csomaközi also unlikely toward
nincsen
not.exist-3SG
'István Besenyei and poor Csomaközi are also probably gone.' (correspondence of Mihály Teleki, Vol. 6. Nr. 393., 1674)

This verbal form can be attested in the 20th century and even recently as well, as it is shown in (14).

(14) *Ebben aligha nincs valami igazad*
this-INE unlikely not.exist-3SG some truth-POSS-2SG
'In this, you are probably right.' (MTSZ, 1906–1907)

A very similar clause can be found in a radio interview: *aligha nincs is valami igaza* 'he is also probably right', MNSZ2, 2012).

As a result of the fusion of *aligha* and *nem* into *alighanem*, the meaning of the negative particle becomes schematized. The broader context of (15) is as follows: *Én egy gonosz, Istentől elrugaszkodott embert keresek, a korhelyeknek céhmesterét*. 'I am looking for a wicked man, estranged from God, a master of drunkards.'

(15) *Alighanem engemet, mert ez az én titulusom*
probably me because this the my title
'Probably me, because that's my title.' (Jezs.2.11_Botfalvai, second half of the 18th century)

However, the distinction is not always clear even in the 19th century. In (16), both the double negation and the actual negation of the proposition can be interpreted.

(16) *Pedig az őz aligha nem nyomott többet,*
although the deer hardly not weigh-PST-3SG more-ACC
mint lövője
than hunter-POSS-3SG
'Yet the deer hardly weighed no more than its hunter.' (MTSZ, 1854-1855)

Both the variation of *aligha* […] *nem* and *alighanem* and the fusion of the latter variant raise the question of the scope of the modifiers. The forms *aligha* 'unlikely' and *aligha* […] *nem* 'probably' usually modify the whole event or proposition, whereas *alighanem* is more likely to function as a focalizer (Claridge 2020). The difference comes from the word order. In the former case, *aligha* itself is not always adjacent to the verb. Yet, in many cases, in 85 instances out of the 194 Middle Hungarian data points, they are still close to each other, only the verbal prefix is between them. Consider (17).

(17) aligha meg nem várom
unlikely VPFX not wait-1SG-DEF
'I [will] probably wait for it.' (TMK, Kár. 181., 1719)

Nevertheless, the negative particle is regularly located at a distance from *aligha* (47 instances), as it is illustrated in (18).

(18) *aligha az erdélyi kereskedők is a Lipcsei*
unlikely the Transylvanian merchant-PL too the Leipzig
húsvéti vásártól el nem rekesztetnek
Easter Fair-ABL VPFX not exclude-PASS-3PL
'Probably the Transylvanian merchants will be excluded from the Leipzig Easter Fair.' (TMK, Peregr1. 13.)

Still, the negative particle modifies the verbal predicate and the two components *aligha* and *nem* enclose the whole proposition thereby emphasizing the probability of the entire event or state. In the case of *alighanem*, where *aligha* and *nem* are directly adjacent or even fused, the modifier is regularly followed by other constituents beyond the verb, and its scope may have been reduced as a result of the change in the position of the negative particle. See (19).

(19) *alighanem most kezdődik itt az új komédia*
probably now start-3SG here the new comedy
'The new comedy is probably starting here now.' (letter of Miklós Bercsényi, 1704–1712)

Considering the ratios of the different uses across subperiods, the meaning 'likely to occur' predominates until the end of the period (mostly expressed by *aligha* [..] *nem*). Although there are only a few data points from the final subperiod, the distribution follows the patterns of the preceding decades (see Figure 2).

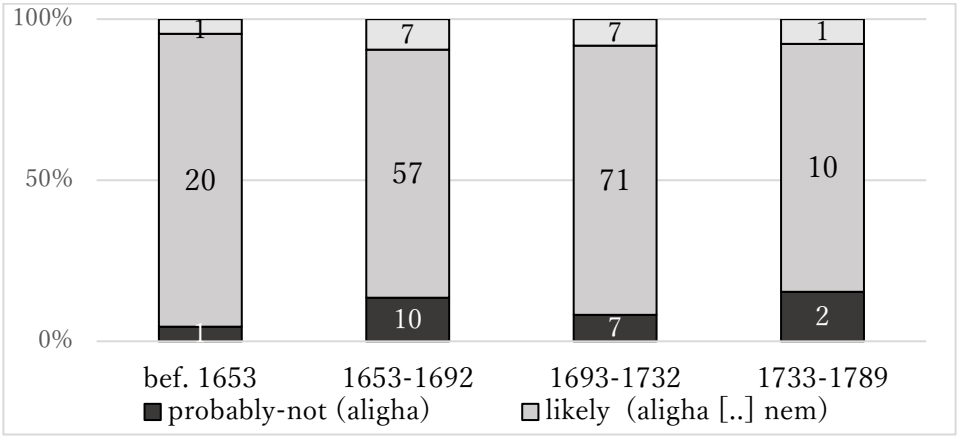

Figure 2: The ratios of the different uses of *aligha* between the 16th and the 18th century (in total: 194 instances, sources: TMK, KED and manual data-collection)

4.2. Early Modern and Modern Hungarian: a time for change

Turning to the Early Modern and Modern Hungarian periods, a change can be observed in the ratios of the different uses and forms according to data from the Hungarian Historical Corpus. *Aligha* still varies in expressing improbability and probability as well as the structure regarding the presence and the absence of the negative particle. Nevertheless, from the mid-1800s onward, *aligha* expressing improbability becomes

more frequent than uses with positive polarity covering the 60% or more of the occurrences in each subperiod (Figure 3).

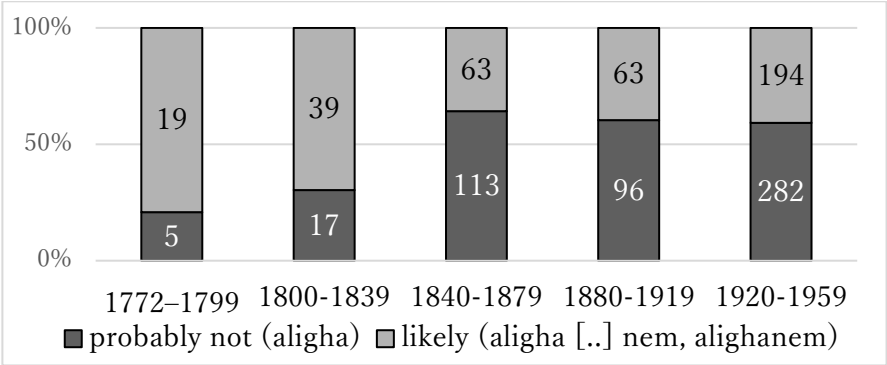

Figure 3: Change of the ratios of the modifiers *aligha, aligha*([…]*nem*) expressing high and low probability (total: 899 instances, corpus: MTSZ)

Over the same decades, *alighanem* begins to exceed the frequency of the unfused *aligha* […] *nem* (Figure 4).

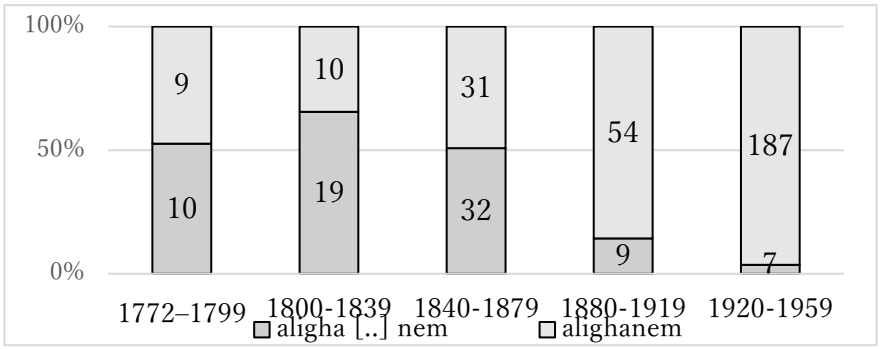

Figure 4: Change of the ratios of the functional variants *aligha* […] *nem* and *alighanem* expressing high probability (total: 378 instances, corpus: MTSZ)

Dividing the raw frequencies into decades reveals that *aligha* meaning 'probably' in negative sentences remains relatively stable in frequency over time, while the affirmative uses indicating improbability have been spreading slowly but steadily since the 1830s and 1840s. The form *alighanem* also spreads, though much more slowly (see Figure 5).[5]

[5] The raw frequencies could not have been normalized since the token numbers of the subperiods are currently not available and cannot be retrieved from the Hungarian Historical Corpus.

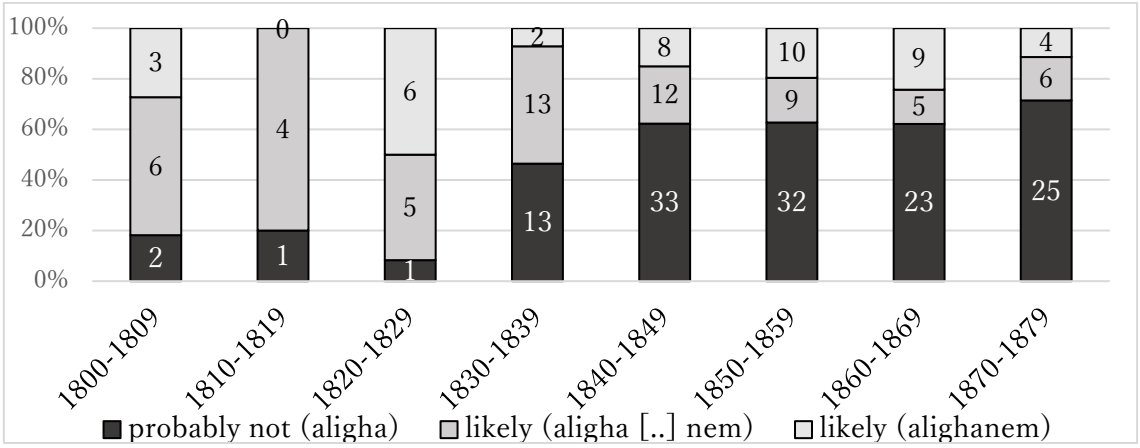

Figure 5: The changing ratios of the variants of *aligha* during decades (between 1800 and 1879, corpus: MTSZ)

Note, that during this period the scope of the modifiers became more varied as well. *Alighanem* and *aligha* meaning 'unlikely' can be observed as responsive marker as well – the former has instances by the end of the 18th century, while the latter is attested from the mid-19th century onward, as it is illustrated in (20) and (21), respectively.

(20) [BERÉNYI] : *Nem ismérsz tehát szavamról?*
[BERÉNYI] : No know-2SG then word-1SG-DEL
[JOLÁNTA]: *Alighanem. – De mégsem.*
[JOLÁNTA]: Probably. But still-not.
'[BERÉNYI]: So you don't know me from my word? [JOLÁNTA]: Probably (I do). – But still not.' (MTSZ, #7087019, 1795)

(21) *Sándor olvasta? – Azt nem tudom. De aligha.*
[Sándor] read-PST-3SG that-ACC no know-1SG But unlikely
'Has Sándor read it? – I don't know. But unlikely.' (MTSZ, #9163012, 1917)

The responsive uses highlight that the constituents of the modifier are lexicalized (Simonyi 1881). As an interim summary, corpus data indicate that during the mid-19th century there was a shift in the preference from the predominant use of *aligha* […] *nem* expressing high (positive) probability toward *aligha* expressing improbability. This resulted in the increase of a unique type of modification associated with the negative pole. The lexicalization and the growing frequency of the variant *alighanem* had an influence on the scope of the modifier as well, giving space to the focalizer and responsive uses as well. The syntactic aspect of the word order and how is it related to the change described above is discussed in the following section.

5. Word order patterns: variation and change

It has been argued (Kugler 2009, 2013, Gugán 2021) that the word order of *aligha*, which used to be VPFX-NEG-V, reflects the typical pattern of conditional clauses inherited from the second component of the compound *ha* 'if'. Considering the Middle Hungarian data, when *aligha* indicates high probability with a negated predicate and a verbal prefix is present in the structure (92 instances), the word order is predominantly VPFX–NEG–V (85 instances, 92%, see Examples 3, 17, and 18).

In a few cases (3 instances), the observed word order displays an inversion of the neutral VPFX–V order, namely: NEG–V–VPFX. The inversion is presumably related to the scope of the modifier: in these cases, *aligha* does not modify the entire proposition or clause referring to the probability of the whole event or state of affairs but rather a specific circumstance. In other words, the issue is not whether the event actually occurs, but whether one of its constituents or circumstances is affected by *aligha* functioning as a focalizer. Example (22) does not raise the question of whether the mentioned people leave their territory but the actual place is the subject of (un)certainty.

(22) *aligha* *Verestoronynál* *nem* *járnak* *ki*
unlikely Verestorony-ADE not go-3PL VPFX
'They probably go out by Verestorony.' [= a gorge in the South Carpathians] (correspondence of Mihály Teleki Vol. 8. Nr. 546., 1679)

Also, four instances display neutral VPFX–V order, due to temporal (e.g. *fog* 'will') or modal verb predicates (*kell* 'must') where the non-finite form of the verb has a verbal prefix, consider (23).

(23) *aligha* *magamnak* *nem* *kell* *bemennem*
unlikely myself.DAT not must VPFX.go-INF-1SG
'Probably I myself must go in.' (correspondence of Mihály Teleki, Vol. 4., Nr. 86., 1667)

By contrast, when *aligha* does not indicate probability and its host sentence is affirmative, the order is exclusively VPFX–Verb (10 instances), as illustrated in (24) and (25).

(24) *Az* *ország* *gyűlésének* *én* *az* *elejére*
the country assembly-DAT I the beginning-SUB
aligha *bemehetek*
unlikely VPFX.go-MOD-1SG
'I can unlikely go to the beginning of the country's assembly.' (correspondence of Mihály Teleki, Vol. 5. Nr. 16, 1670)

(25) *amint* *arányzom,* *aligha* *a* *hadat* *elkerülhetjük*
as suppose-1SG unlikely the army-ACC VPFX.avoid-MOD-1PL
'As I suppose we can hardly avoid the army/fight.' (letter: Bálint Lépes, Litpol., Nr. 138, 1614)

The observed pattern in (24) and (25) is ungrammatical in Modern Hungarian. The question arises when the change took place in this respect and whether it is affected by the spread of the frequency of the uses of *aligha* expressing improbability. According to Early Modern and Modern Hungarian data, *aligha* […] *nem* consistently preserved the VPFX–NEG–V order even in the 20th century when this pattern had become infrequent. The broader context for (26) is the following: *Hitemre, nem tudom, mint végződött volna a dolog* 'Upon my faith, I don't know how it would be ended'.

(26) *de* *valamelyikünk* *aligha* *le* *nem* *nyúzta* *volna*
but one-of-us unlikely VPFX not skin-PST-3SG be-COND-3SG

a másik bőrét
the other skin-POSS-3SG
'but one of us probably would pull the other's skin off.' (MTSZ, #9275031, 1950)

In the case of *aligha* meaning 'unlikely', however, a change can be observed along with the spread of its frequency. Until the mid-19th century, the VPFX–V order was neutral as it is illustrated by (27) and (28).

(27) *ha kérdi tőlem, mi a szerelem,*
if ask-3SG from-me what the love
aligha azt megmondhatom
hardly that-ACC VPFX.say-MOD-1SG
'If (s)he asks me what love is, I can hardly say.' (MTSZ, #7165014, 1794)

(28) *kedvezőtlenebb kép aligha feltárúl*
unfavorable-CMP picture unlikely VPFX.reveal-3SG
a magyar történetben
the Hungarian history-INE
'a more unfavorable picture in Hungarian history can hardly be revealed.' (MTSZ, #8505001, 1870)

Moreover, other modifiers also preceded the verb during the Early Modern Hungarian period which occur in post-verbal position in standard Modern Hungarian. Consider *készen lehetek* (29) and *bérbe adta* (30).

(29) *hogy aligha készen lehetek a kiszabott időre,*
that unlikely ready be-MOD-1SG the determine-PRS time
'that I can unlikely be ready by the deadline.' (MTSZ, # 8173059 1854)

(30) *Más fejdelem aligha bérbe adta volna*
other prince unlikely rent-ILL give-PST-3SG be-COND-3SG
'Any other prince would unlikely have rented out [part of his palace to the merchants].' (MTSZ, #8235013, 1858)

As Figure 7 suggests, the inverse order that is typical for non-neutral sentences became common only from the last decades of the 19th century as it is illustrated by (31).

(31) *hogy aligha cserélhetnők fel egymást valaki jobbal*
that unlikely replace-MOD-1PL VPFX each-other someone better
'that we could unlikely replace each other with someone better.' (MTSZ, #9290042 1913)

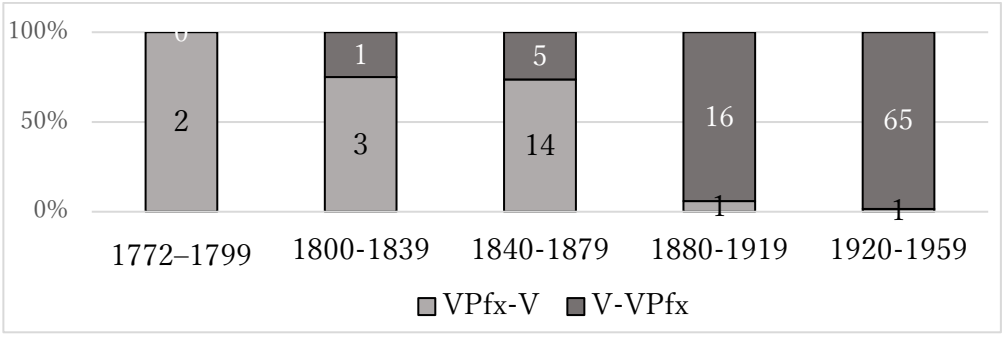

Figure 7: Changing ratios of the neutral and non-neutral word order in clauses involving *aligha* (raw numbers, corpus: MTSZ)

However, an example from the paper of the linguist Zsigmond Simonyi (1913: 92) suggests ongoing variation in this respect as well, at least in the scientific register.

(32) *nevezetes jelenség, mely a magyaron kívül*
specific phenomenon which the Hungarian-on other-than
más nyelvekben aligha előfordul
other language-PL-INE barely VPFX.appear-3SG
'it is a specific phenomenon which unlikely appears in other languages than in Hungarian.' (Simonyi, 1913)

Both the aforementioned utterance and the low frequencies available from MTSZ suggest that the question of the actual change requires further investigation and additional data collection from the 19th and 20th century. This could be a succeeding step of this research.

Nevertheless, the studied corpus data indicates the shift in the preference of *aligha* expressing improbability apparently involved not only declining use of double negation and the spread of *alighanem* but change in word order the spread of inversion of the verbal prefix as well.

6. Discussion

The results of the corpus study highlight some issues to be discussed. One of them is the syntactically marked structure of *aligha* […] *nem* and why that variant is more generally used in Middle Hungarian. In terms of function, there was basically no functional variant that directly expressed high probability during that time. Other elements indicated more general epistemic uncertainty, such as *talán* 'perhaps', *netalán* 'maybe'. *Valószínű* 'probable' and *valószínűleg* 'probably' can only be attested from the 19th century onward, similarly to *feltehetőleg*, *gyaníthatóan*, and *elképzelhető* which also indicate probability, marking the positive pole by default (see MTSZ and ÚESz.).

In terms of the structural features, several verbal phrases triggered logically not interpreted, in other words expletive negation as well as double negation in subordinate clauses, especially, before the 19th century (such as *tilt* 'forbid', *tagad* 'deny', *fél* 'be afraid', *kételkedik* 'doubt', Gugán 2022). The use of *aligha* […] *nem* might also be related to this tendency – as is was already mentioned, the avertive use of *alighogy* 'almost' involved expletive negation. This assumption requires further investigation.

Another issue to discuss is the explanation for the change in word order in the case of *aligha*, expressing unlikeliness. According to Kugler (2009: 146–147), the VPFX–NEG–V word order shows the word order of the conditional clauses and it is inherited

from the component *ha*. She argues that once the functional composition had become fixed, meaning that *alig* and *ha* did appear not only at the boundary of a clause but also at the beginning or within a clause, its order was replaced by the word order pattern characteristic of the restrictive modifier *alig*, that is inversion.

As it was mentioned in Section 2, there are no original bi-clausal utterances attested while *aligha* occurs at least as a collocation if not as a compound as early as the 16th century. It is also unusual that an element wedges itself between the constituents. According to data from TMK, KED, and manual sources, in total based on more than 900 data points of *alig*, there is only one exceptional example regarding how likely is that the modified event will actually happen. Consider (33).

(33) *Alig Édesem ha januáriust is itt nem töltöm*
hardly sweet-POSS-2SG if January-ACC too here not spend-1SG-DEF
'I probably spend January here too, my dear.' (TMK, Kár. 23, 1704)

Also, there is an example where not the event itself but the time of the actuation is questioned. Note, that in (34) the word order is neutral (VPFX–V):

(34) *A szegek csak alig hétfőn estére*
the nail-PL just hardly Monday-SUP evening-SUB
ha elkészülhetnek
if VPFX.be-made-MOD-3PL
'The nails can only hardly be made by Monday evening, if (not later).' (Correspondence of Mihály Teleki, Vol.1. Nr. 155., 1658)

From at least the 16th century onward, *aligha* tends to occur clause-internally as well, indicating that the compound is functionally fixed. By all means, it exhibits VPFX–NEG–V order for example in (35) and (36).

(35) *Álljatok meg, mert aligha meg nem*
stop-SUBJ.PL2 VPFX because unlikely VPFX no
kelletik változtatnunk akaratunkat
must-PASS-3SG change-INF-1PL will-POSS-1PL
'Stop, because we probably must change our mind.' (Aesop's Fables translated by Gábor Pesti, 1535)

(36) *s a gyűlésbe is aligha el nem megyek*
and the meeting.ILL too unlikely VPFX no go1SG
'and I will probably attend the assembly.' (letter of Miklós Bethlen, 1667)

As it has been shown in Section 5, these clauses displayed neutral VPFX–V order between the 16th and the 18th century even in cases when *aligha* occurs within the sentence, such as (37).

(37) *kinek különböztető színét aligha*
who-DAT distinctive color-ACC unlikely
valamely virág felülhaladja
some flower surpass-3SG

‘whose distinctive color is unlikely surpassed by any other flower.’ (Lippay, 1641)

Historical corpus data suggests that the presumably inherited order changes lately, despite the fact that *aligha* occurred clause internally from the 16th century onward, indicating that it is functionally fixed. Inversion in affirmative clauses became widespread only in the last decades of the 19th century (Section 5).

Klemm (1928–1942) argues that the inversion might have been influenced by adverbials with similar meanings, such as *nehezen* ‘difficultly’ and *bajosan* ‘problematically’. Those however, triggered inversion in Middle Hungarian period as well, and they infrequently expressed low probability even later on. Also, structures involving *nehezen* and *bajosan* exhibited neither expletive, nor double negation.

Note that the first constituent, *alig* itself, mostly triggered inversion from the earliest instances onward, even when expressing near-simultaneity. The exceptional environments include the aforementioned avertive construction, in which the word order is triggered by the expletive negation (Gugán 2022). Another specific environment is *alig hisz* ‘hardly believes’ followed by a subordinate clause, which is structurally different from the occurrences of *aligha*. Nevertheless, when the scope of *alig hisz* is sentential and the subordinate clause is affirmative, the word order is neutral, as in (38), similar to the variants involving *aligha* (see also Examples (24) and (25)).

(38) *alig hiszem, én az gyűlésre bemehessek*
hardly believe-1SG I the assembly-SUB VPFX.go-MOD-SUBJ-1SG
‘I hardly believe (that) I can go to the assembly’ (Correspondence of Mihály Teleki, Vol. 5. Nr. 35, 1670)

Presumably, the change of the word order involving *aligha* is related to a more general development affecting negation. There was a spread of inversion in the negative sentences during the 19th century. In the preceding period, the VPFX–NEG–V word order was common and pragmatically neutral; therefore, the change can be regarded as a specific instance of the Jespersen cycle (see Gugán 2017, 2021, 2025). The consequences of this change require further investigation of expletive negation and double negation, including the environments of *aligha* and other epistemic and inferential modifiers.

7. Summary

The present study investigated the history of the Hungarian modifier *aligha* ‘unlikely’ and its variant *alighanem* ‘probably’. *Aligha* is a specific modifier, as it indicates negative polarity – the negation of the modified proposition – by default. Considering the plausible bi-clausal origin of the constituents *alig* ‘hardly, barely’ and *ha* ‘if’, the provided historical data analysis suggests that the predicate of the main clause may originally have been a verb other than *van* ‘is’, *lesz* ‘will be’, or *lehet* ‘may be, can be’. One of the most plausible candidates is *hisz* ’believe’. Although the construction *alig hisz* co-occurring with the conjunction *ha* ‘if’ is attested, it is extremely rare. The latter constituent, the conditional conjunction *ha* may have been motivated by at least two factors. First, *alig* also occurred with the default conjunction of the complement clauses *hogy* ‘that’, however, in that case, the structure *alig* […] *hogy* ~ *alighogy* served a different function, namely the avertive. Second, *ha* ‘if’ had a potential to indicate that the clause did not

describe a fact but an event assumed with strong conviction. Nonetheless, this question remains open due to the lack of sufficient historical data.

The extensive historical analysis confirmed a change in the usage during the 19th century, resulting in the stronger preference of *aligha* expressing improbability, whereas in earlier periods, *aligha* in collocation with the negative particle *nem* 'no, not' was used to indicate high probability. Moreover, the shift in the preference presumably affected the syntactic features of the modifier as well. On the one hand, these features include the fusion and schematization of the negative particle when expressing high probability, yielding *alighanem*. On the other hand, *aligha* previously exhibited neutral word order (VPFX–V) when expressing improbability, which was gradually replaced by non-neutral (V–VPFX) order. The V–VPFX pattern was typical of the first constituent, *alig* 'barely' as early as the Old Hungarian period. However, *aligha* displayed a (VPFX–V) order similar to the collocation of *alig hisz* 'barely believes' until the late 19th century.

At the current state of the research, it can be assumed that the motivation of the observed change may be related to a more general development affecting negation and word order. Nonetheless, the details require a further investigation of the language use in the late 19th century, extending the analysis to main clauses with mental verbs, such as *hisz* 'believe', *gondol* 'think', as well as to other earlier patterns of double and expletive negation.

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On the synchrony and diachrony of grammaticalized result phrases in Hungarian*

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Abstract
The aim of this paper is to argue for an extended typology of Hungarian result phrases. Besides the canonical sublative-marked result phrases in Hungarian, there is also a subclass of translative-marked result phrases that can have two different functions even though their forms are syncretized. I argue that these two interpretations are made possible due to different underlying syntactic structures. On one interpretation these RPs can have a transparent resultative meaning, but they may also be interpreted as adverbial, intensifying elements. With my syntactic analysis, I aim to draw a parallel between the syntax of the two kinds of translative result phrases and the syntax of lexical and superlexical prefixes in Slavic languages as put forth by Svenonius (2004). Regarding the diachronic development of Hungarian superlexical RPs, I also show with historical and contemporary corpus data that some superlexical RPs show a higher level of grammaticalization than others, which is evidenced by their higher level of productivity.

Keywords: result phrases; lexical and superlexical prefixes; grammaticalization; Hungarian

1. Introduction

Resultative constructions have been of interest to linguists for decades both for their syntactic and semantic properties. Their grammatical behavior and (un)availability have been studied in various languages (see, e.g., Heinemäki 1988 for Finnish, Washio 1997 for Japanese, Mateu 2002 for Catalan, Kratzer 2005 for German, Beavers 2012 and Wechsler 2005 for English, Folli and Harley 2020 for Italian and English, Hopperdietzel 2022 for Mandarin

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Chinese and Samoan), including Hungarian (e.g., É. Kiss 2008, Hegedűs 2019, Kardos and Szávó 2024).

Consider the contrast between the canonical English examples in (1) and their Hungarian counterparts in (2). [1]

(1) a. *John hammered the metal flat.*
b. *Kate broke the vase into pieces.*

(2) a. *János lapos-ra kalapálta a vasat.*
János flat-SUBL hammered the metal.ACC
'János hammered the metal flat.'
b. *Kati darabok-ra törte a vázát*
Kati pieces-SUBL broke the vase.ACC
'Kati broke the vase into pieces.'

Both in Hungarian and English, the interpretation of these sentences is that there was a causing activity which is described by the verbal predicates - *hammered the metal*, *broke the vase*, *kalapálta a vasat*, *törte a vázát*. This causing activity culminated in the object referent obtaining a new result state, as specified by the result phrases (RPs) – *flat*, *into pieces*, *laposra*, *darabokra*. A difference, however, between how the two languages form resultative constructions is that on the one hand, English RPs appear postverbally, and they can be APs (*flat* in (1a)) or PPs (*into pieces* in (1b)). In Hungarian, however, RPs appear preverbally in neutral sentences. They are standardly analyzed as prepositional phrases (Hegedűs 2019), and in the most canonical cases they are composed of an adjective such as *lapos* 'flat' and a case marker such as *-ra/-re* for the sublative case. There are no AP resultatives in Hungarian (Hegedűs 2019), similarly to Slavic languages (Gehrke 2008).

RPs in English are known to be inner aspectual markers in that they provide event descriptions with an inherent endpoint in their most canonical uses. In other words, result-encoding elements such as RPs generally give rise to a telic interpretation of an event description by providing it with a culmination point beyond which an event specified by a given event description cannot continue (but see also Goldberg and Jackendoff (2004) for atelic resultative constructions).

Hungarian RPs are also telicity-inducing elements in their canonical preverbal position (É. Kiss 2008). Additionally, Hungarian is a language that has verbal particles (VPart) that also serve the same aspectual function and as such, their role is to provide the verb phrases that they are contained in with a telic interpretation (Csirmaz 2008, É. Kiss 2008, Kardos 2016). In their absence, atelicity arises. The examples from (3) through (5) show the behavior

[1] The abbreviations used in this paper are the following: 1SG: 1st person singular, 2SG: 2nd person singular, ACC: accusative, ADE: adessive, APL: associative plural, ATTN: attenuative, CMLT: cumulative, CMPL: completive, COMPL: complementizer, DLMT: delimitative, DSTR: distributive, IMP: imperative, INE: inessive, INCP: inceptive, PART: participle, POSS: possessive PRT: verbal particle, RPET: repetitive, SUBJ: subjunctive, SUBL: sublative, SUP: superessive, TRANS: translative, TERM: terminative.

of such a particle, *le-*, of an RP *fehérre* 'lit. onto white', and also their interaction with each other.

(3) a. *Mari egy óráig / *egy óra alatt festette a falat.*
Mari one hour.TERM / one hour under painted the wall.ACC
'Mari spent one hour painting the wall.'

b. *Mari egy óra alatt / *egy óráig le-festette a falat.*
Mari one hour under / one hour.TERM PRT-painted the wall.ACC
'Mari painted the wall in an hour'.

c. *Mari egy óra alatt / *egy óráig fehér-re festette* a
Mari one hour under / one hour.TERM white-SUBL painted the
falat.
wall.ACC
'Mari painted the wall white in an hour.'

The examples in (3) show that in Hungarian, a telic reading is only available in the presence of a preverbal VPart (3b) or RP (3c). With no VPart or RP (3a), the only possible reading is an atelic one. This is evidenced by the Hungarian equivalent of the *in*/*for* test (Vendler 1957) – the terminative-marked *-ig* adverbial being the Hungarian *for*-adverbial, and the *alatt*-adverbial being the Hungarian *in*-adverbial.

It is possible both for VParts and RPs to appear postverbally (4), though this word order is associated, for example, with imperfective grammatical aspect (4a) or subject focus (4b) (Csirmaz 2008, É. Kiss 2008).

(4) a. *Mari ment fel a lépcsőn, amikor meg-csörrent a telefon.*
Mari went PRT the stairs.SUP when PRT-rang the phone.
'Mari was painting the wall when the phone started ringing.'

b. *MARI festette a falat fehér-re.*
MARI painted the wall.ACC white-SUBL
'It was Mari who painted the wall white.'

In (4a), the first clause is interpreted imperfectively with the particle *fel* in postverbal position, describing an event that was in progress when the event described by the second clause interrupted it. The event of the second clause is interpreted perfectively with the particle being preverbal. In (4b), the subject *Mari* is a focused element, which in spoken language would be indicated by phonological emphasis besides the postverbal position of the RP, as also signaled by the small capital letters.

Finally, in (5) when VParts and RPs co-occur with each other, at least three different word order variations are available.

(5) a. *Mari le-festette a falat fehér-re.*
Mari PRT-painted the wall.ACC white-SUBL
'Mari painted the wall white.'

b. *Mari le-festette fehér-re a falat.*
Mari PRT-painted white-SUBL the wall.ACC
'Mari painted the wall white.'

c. *Mari fehér-re le-festette a falat.*
Mari white-SUBL PRT-painted the wall.ACC
'Mari painted the wall white.'

The particle can be in preverbal position while the RP is sentence-final (5a), the RP can be immediately postverbal, following the particle verb (5b), or the RP can precede the particle verb (5c). In this case, the particle ensures that the sentence can be interpreted telically, while the RP provides a further specification of the result state of the event.

Besides the more canonical resultative constructions demonstrated above, Hungarian also has a further subclass that usually features RPs that are case-marked nouns marked for translative case with the *-vá/-vé* suffix. What is also noteworthy regarding these RPs is that they often have two different interpretations. See (6) and (7).

(6) a. *Kati por-rá zúzta a tojáshéjat.*
Kati dust-TRANS crushed the eggshell.ACC
'Kati crushed the eggshells to dust.'
b. *A katonák rom-má bombázták a házakat.*
the soldiers dust-TRANS bombed the houses.ACC
'The soldiers bombed the houses to ruins.'

(7) a. *Kati por-rá alázta Jánost.*
Kati dust-TRANS humiliated János.ACC
'Kati completely humiliated János.'
b. Obamáék rom-má díszítették a Fehér Házat.
Obama.APL ruin-TRANS decorated the White House.ACC
'The Obamas decorated the White House from top to bottom.'

In (6), the RPs *porrá* 'to dust' and *rommá* 'to ruin' are interpreted in their literal sense, meaning that as a result of Kati's crushing, the eggshells turned into dust and as a result of the soldiers' bombing, the houses turned into ruins. In (7), however, the RPs are not interpreted in their literal sense, as also indicated by the translations, but as adverbial, intensifying elements. In other words, their function is to express that the results of the events denoted by the VPs were excessive.

My goal is to argue that these interpretations are a consequence of two different syntactic configurations associated with (6) and (7). They may look identical on the surface regarding their morphological composition, and they may occupy the same surface position, but as I show below, their grammatical behavior, besides their interpretational difference, seems to warrant a syntactic distinction. As I show based on various diagnostics, the grammatical behavior of the RPs in (6) parallels that of canonical, largely sublative-marked adjectival RPs from the previous literature, so I treat them on par with those. I take RPs of the kind that are featured in (7) to be grammaticalized elements, lacking the lexical content observable in the RPs in (6). In my syntactic analysis, I rely on the analysis of Hungarian verbal particles and result phrases as recently put forth by Kardos and Farkas (2022), inspired by Borer (2005), MacDonald (2008) and Travis (2010). They argue for a syntactic account of Hungarian inner aspect and posit an Aspect Phrase between *v*P and VP. The specifier of this AspP is the

position where VParts are base-generated and to which canonical RPs move from the complement of VP for feature checking purposes.

Additionally, with my analysis I aim to draw a parallel between the syntax of lexical and superlexical prefixes in Slavic languages as argued for in Svenonius (2004), and the RPs illustrated in (6) and (7), which – inspired by this terminology – I also call lexical and superlexical RPs. Lexical prefixes in Slavic languages are usually associated with a transparent resultative meaning and are assumed to be base-generated within VP, while superlexical prefixes are associated with additional meaning components such as excessive, distributive, attenuative or repetitive meanings, and are assumed to be base-generated above VP in an aspectual functional projection.

The structure of this paper is as follows: in Section 2 and 3 I present the relevant Slavic and Hungarian facts, respectively, that I rely on in my analysis. In Section 4 I provide the syntactic structures that I propose for the examples in (6) and (7) and provide support for my analysis by examining the distributional and interpretive properties of the RPs in the examples. Section 5 offers some insights into the diachronic development of Hungarian superlexical RPs, and finally Section 6 concludes.

2. Lexical and superlexical prefixes in Slavic languages

The lexical-superlexical dichotomy in the class of prefixes has been extensively argued for in the Slavic literature in works such as Schoorlemmer (1995), Babko-Malaya (1999), Romanova (2004), Svenonius (2004), Di Sciullo and Slabakova (2005), Pereltsvaig (2006), and Žaucer (2009), among others. In this section I discuss some of the data and the syntactic analysis of Svenonius (2004), which I rely on when drawing a parallel between the syntax of Slavic lexical and superlexical prefixes and Hungarian lexical and superlexical RPs.

Svenonius (2004) differentiates between lexical and superlexical prefixes in Slavic languages, relying on data such as the following:

(8) a. *Helder za-brosil mjač v vorota angličan.* (Russian)
Helder into-threw the ball in goal English
'Helder kicked the ball into the English goal.'

b. *David sovsem za-brosil futbol.*
David completely into-threw soccer
'David completely gave up soccer.'

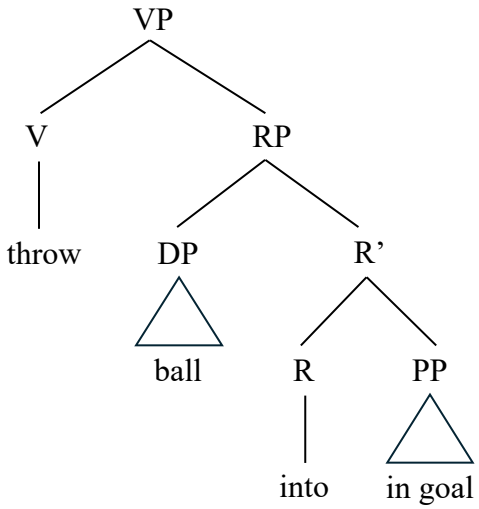
c. *Ricardo nervon za-brosal mjač.*
Ricardo nervously INCP-threw ball.
'Ricardo began to nervously throw the ball.'
(Svenonius 2004: 205-206)

We see the same prefix, *za-,* in all three of the examples in (8), though it contributes a different kind of meaning in each case. In the first two examples we see lexical uses of this prefix. In (8a), *za-* contributes a transparently resultative meaning, denoting the directed path of the throwing. In (8b) it takes on a more idiomatic meaning together with the same verb, meaning *give up.* Finally, in (8c) we see a superlexical use of *za-*, still with the same verb, the prefix and verb together meaning *begin to throw.* Besides the meaning differences, we can also tell the lexical and superlexical uses apart by considering the verb conjugation (*brosil*

vs. *brosal*). Lexical prefixes usually combine with verbs conjugated in the perfective paradigm (*brosil)*, while superlexical prefixes combine with verbs bearing imperfective conjugation (*brosal*).

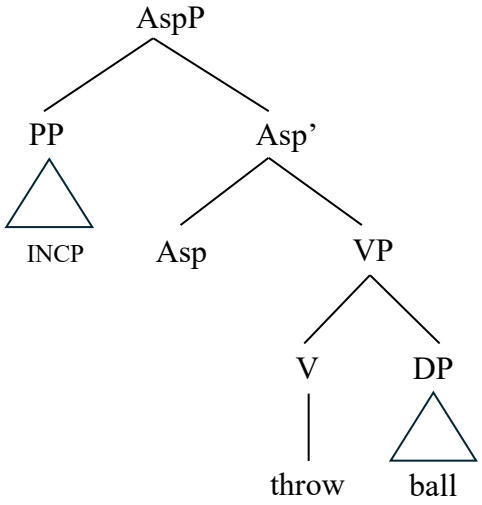
Svenonius proposes his syntactic analysis of lexical (9a) and superlexical (9b) Slavic prefixes relying on a syntactic decomposition inspired by works such as Ramchand and Svenonius (2002).

(9) a. The syntax of lexical prefixes



Svenonius (2004: 206, (2a))

b. The syntax of superlexical prefixes



Svenonius (2004: 206, (2b))

Lexical prefixes like *za-* in (8a) are argued to be base-generated in the head of a resultative small clause, as shown in (9a), that establishes a subject-predicate relation between the DP

ball and the PP *in goal*. Superlexical prefixes like *za-* in (8c) are argued to be base-generated in the aspectual projection AspP above VP. This is shown in (9b), where the inceptive PP occupies the specifier of AspP.

These syntactic structures show similarities with the structures proposed by Kardos and Farkas (2022) for Hungarian RPs and VParts, respectively. One difference, however, is that they do not assume that VPs in Hungarian take a resultative small clause. Instead, they assume that there is a Result Phrase in the complement of VP, which is a PP containing a case-marked adjective or noun, the case marker being the head of the phrase. Additionally, Kardos and Farkas also assume an AspP above VP, and it is the specifier of this AspP that contains telicity-inducing elements such as VParts and RPs – the former are base-generated there, while the latter occupy that position after movement.

3. The syntax of inner aspectual markers in Hungarian

Traditionally, Hungarian verbal particles have been associated with grammatical aspect (É. Kiss 2002, Alberti 2004, Kiefer 2006), but in later work, starting with works such as É. Kiss (2008) and Csirmaz (2008), verbal particles are considered to be markers of lexical and not grammatical aspect.

É. Kiss (2008) offers a small clause analysis of these elements, placing them in the specifier of a PredP above VP. A crucial assumption in her work, however, is that particles are predicative elements in the syntax and that telicity is a semantic, not a syntactic matter. More specifically, she assumes telicity to be a purely compositional property of verbal predicates.

More recently, however, Kardos and Farkas (2022) have proposed a functional projection analysis of Hungarian inner aspectual markers, assuming an AspP between *v*P and VP, and by extension also considering inner aspect to be a syntactic phenomenon in Hungarian. Kardos and Farkas build on works such as Borer (2005), MacDonald (2008), and Travis (2010). In these works, the authors also assume an aspectual functional projection, which provides a syntactic position for both overt and covert aspectual markers in the languages that they cite data from.

Kardos and Farkas argue that in Hungarian telicity arises as a non-cancelable entailment tied to the aspectual functional projection in the sentence. Telicizing VParts and RPs exert their telicizing function in this projection. On the other hand, Kardos and Farkas agree with Borer (2005) in that when event descriptions are interpreted atelically there is no need to assume an aspectual projection in the structure of the sentence. In other words, they associate more complex interpretations with more complex syntactic structures. As it was already illustrated above in example (3), in the presence of a VPart or RP in preverbal position, the only interpretation that is available is a telic one, while when neither of these elements is present in the sentence, the interpretation is strictly atelic.

In Hungarian telicity may also arise as a cancelable implicature in the absence of VParts and RPs in the case of a particular predicate class featuring creation/consumption verbs.

(10) a. *János öt perc alatt/ öt percig evett egy almát.*
János five minute under/ five minute.TERM ate an apple.ACC
'János ate an apple in five minutes / for five minutes.'

b. *János öt perc alatt / *öt percig meg-evett egy almát.*
János five minute under / five minute.TERM PRT-ate an apple.ACC
'János ate an apple in five minutes.'

With the consumption verb *eszik* 'eat,' (10a) is compatible both with the *for*-adverbial and the *in*-adverbial, meaning that the sentence can be interpreted both telically and atelically. In (10b), however, in the presence of the particle *meg*-, the only possible interpretation is a telic one.

Furthermore, as it is illustrated in (11), we can also show with creation/consumption verbs that the presence of aspectual elements such as a VPart gives rise to a *maximal event* interpretation (Filip and Rothstein 2006, Filip 2008). In the examples below this means that the entirety of the apple has been consumed.

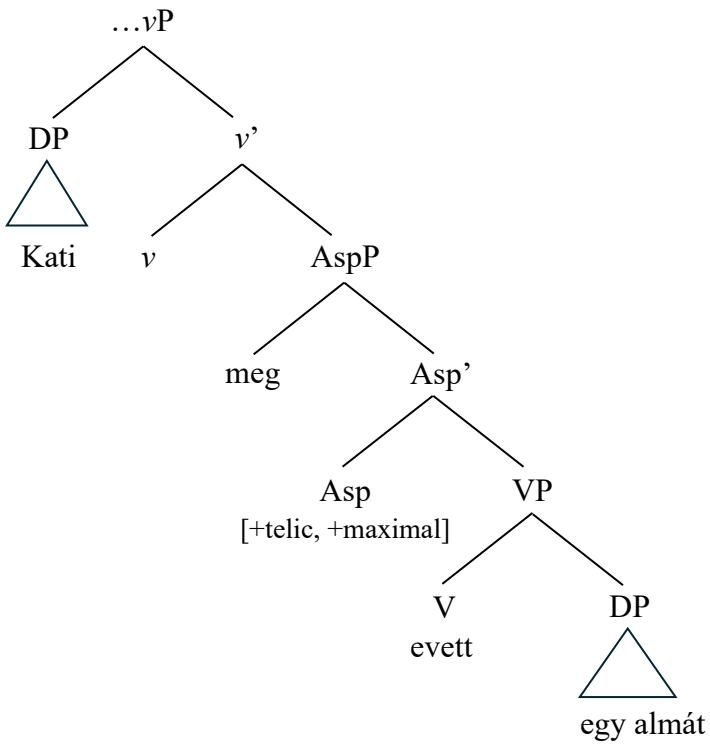
(11) a. *János meg-evett egy almát, #de még maradt belőle.*
János PRT-ate an apple.ACC but still remained from.it
'János ate an apple #but part of the apple remained.'

b. *János evett egy almát, de még maradt belőle.*
János ate an apple.ACC but still remained from.it
'János ate (at) an apple but part of the apple remained.'

In (11a), with a VPart in the sentence, it is infelicitous to cancel the attainment of the result state of the apple being completely consumed, while the same cannot be said about (11b). In this case, since the attainment of a result state is only an implicature without a VPart in the sentence, it does not lead to infelicity if we cancel the attainment of a changed final state. In the remainder of this paper my focus is only on non-creation/consumption predicates in Hungarian.

Based on data such as the ones cited above, Kardos and Farkas (2022) propose the following structure for VParts such as *meg* in Hungarian (12). They assume that the particle is base-generated in the specifier of AspP and it is in this specifier-head relation that it checks the [+telic] and [+maximal] features of the Asp head.

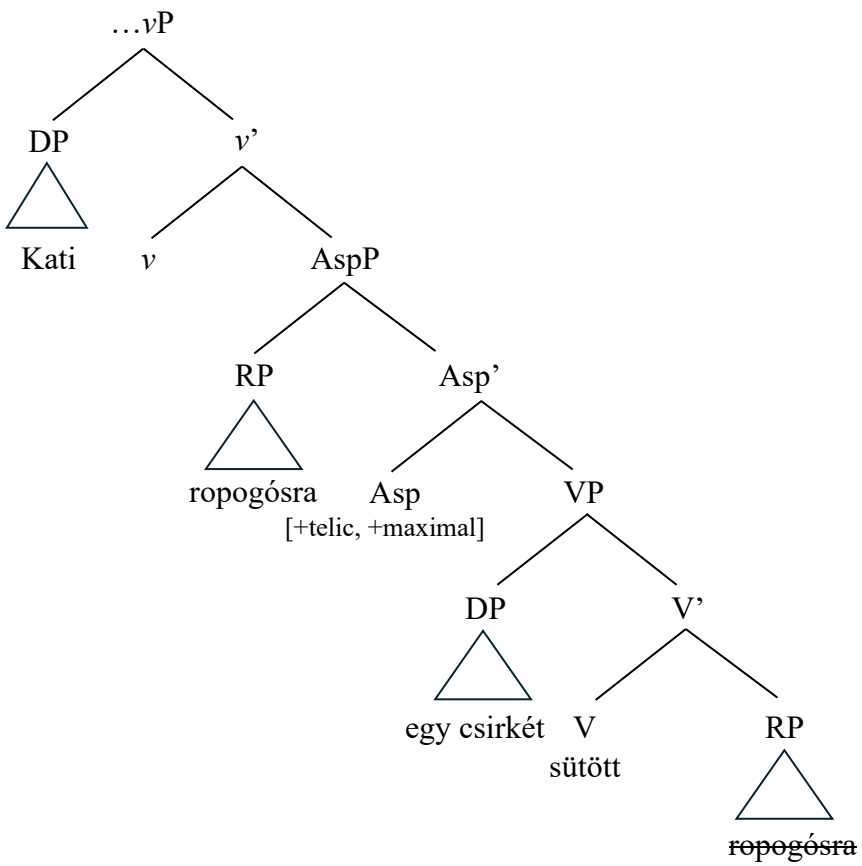
(12) The syntax of VParts in Hungarian



(Kardos and Farkas 2022: 822)

Furthermore, regarding the analysis of resultative constructions, Kardos and Farkas assume that RPs are base-generated in the complement of VP, and from this position they move to a preverbal position, to [Spec, AspP] in the absence of a VPart to check the [+telic] and [+maximal] features of the Asp head. These assumptions are shown in (13).

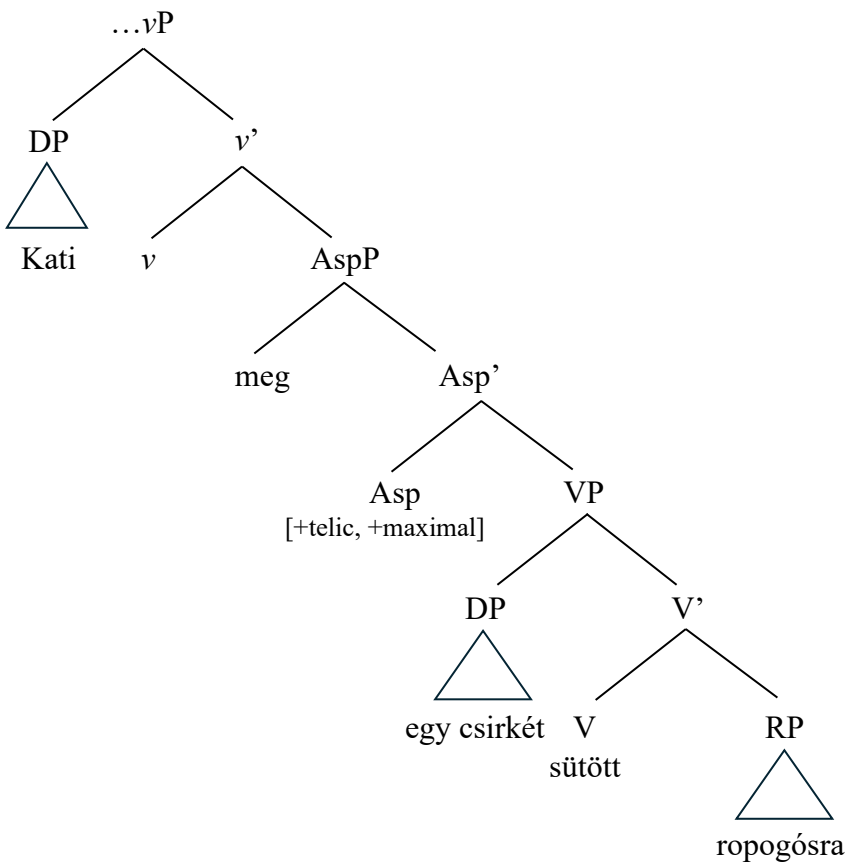
(13) The syntax of RPs in Hungarian



(Kardos and Farkas 2022: 828)

By assuming different base-generation positions for VParts and RPs, the analysis of Kardos and Farkas also allows for the co-occurrence of these two aspectual markers in one of the word order variants as illustrated in (5a) above. Specifically, in the presence of a VPart in [Spec, AspP], an RP may still appear in the sentence if it remains in its base-generation position in [Comp, VP] (14).

(14) The co-occurrence of VParts and RPs in Hungarian



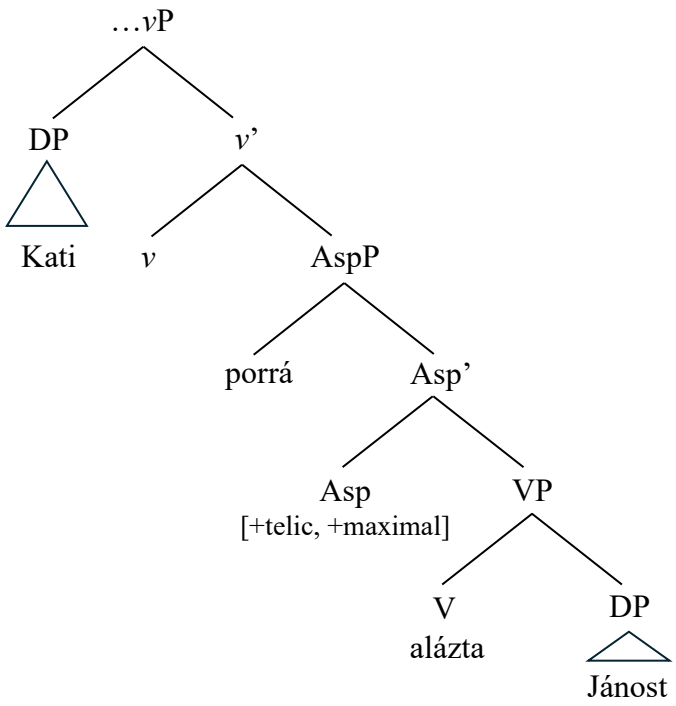
(Kardos and Farkas 2022: 829)

Kardos and Farkas ultimately assume that telicity is a syntactic matter directly linked to an aspectual projection in the Hungarian sentence between *v*P and VP. In this sense, they disagree with É. Kiss (2008) who assumes telicity to be a purely semantic matter. In the following section, I turn to my analysis and the diagnostics that I base my claims on.

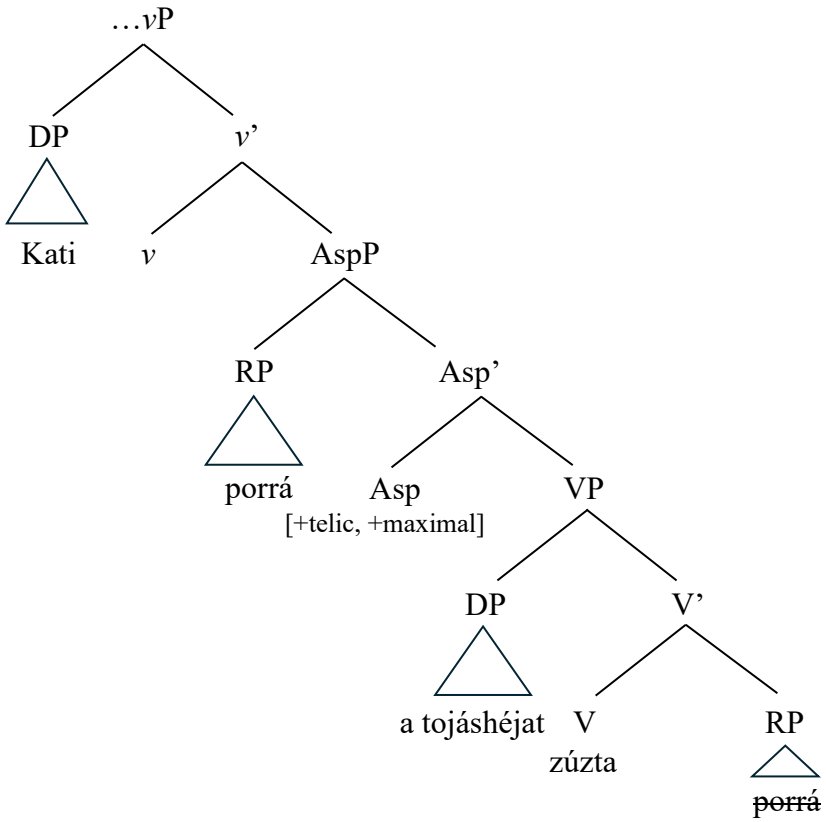
4. Lexical and superlexical RPs in Hungarian

In this section I propose a distinction in the syntax between the two kinds of translative-marked RPs that I illustrated above in (6) and (7), building on the analysis given by Kardos and Farkas (2022). My proposal is the following:

(15) The syntax of superlexical RPs in Hungarian



(16) The syntax of lexical RPs in Hungarian



I assume that in sentences such as in (15) where the translative RP fulfills an adverbial, intensifier-like function, it is base-generated in [Spec, AspP] between *v*P and VP. By extension, I assume these kinds of RPs to have become grammaticalized elements that serve a purely aspectual function, just like VParts, and as such, they have no referential, lexical content. In the remainder of the paper, I refer to them as superlexical RPs. In this regard, they stand in contrast with translative RPs that have referential content, such as in (16). These RPs are alike the more canonical sublative-marked RPs: they are base-generated in [Comp, VP] and in the absence of a VPart, they move to [Spec, AspP]. In what follows, I refer to these RPs as lexical RPs.

In the subsections that follow, I show through various diagnostics that the superlexical RPs resemble VParts like *meg-* in their distribution, syntactic behavior, and semantic content, and can be clearly set apart from lexical RPs.

4.1 The syntactic behavior of lexical vs. superlexical resultatives

In this section I demonstrate some similarities but crucially, several differences as well in the grammatical behavior of the two kinds of RPs in support of the syntactic analyses that I propose in (15) and (16).

Importantly, both lexical and superlexical translative RPs have a telicizing function in preverbal position, as it was also shown above in (3) with the canonical sublative RPs. This similarity between them serves as support for my assumption that their syntactic position is in AspP.

(17) a. *Kati egy perc alatt / *egy percig porrá zúzta*
Kati one minute under / one minute.TERM dust.TRANS crushed
a tojáshéjat.
the eggshell.ACC
'Kati crushed the eggshells to dust in one minute.'

b. *Kati egy percig / *egy perc alatt zúzta a*
Kati one minute.TERM / one minute under crushed the
tojáshéjat.
eggshells.ACC
'Kati spent one minute crushing the eggshells.'

(18) a. *Kati egy perc alatt / *egy percig porrá alázta*
Kati one minute under / one minute.TERM dust.TRANS humiliated
Jánost.
János.ACC
'Kati completely humiliated János in one minute.'

b. *Kati egy percig / *egy perc alatt alázta Jánost.*
Kati one minute.TERM / one minute under humiliated János.ACC
'Kati spent one minute humiliating János.'

Applying the *in/for* test to these sentences, with (17) containing a lexical RP and (18) a superlexical RP, what we see is that the result phrase *porrá* 'to dust' ensures the telic interpretation of the sentences in both of its uses, i.e. a sentence containing any RP in

preverbal position is compatible with the *in* time span adverbial, denoting how much time the crushing and the humiliating event required to be completed, and it is incompatible with the *for* durative adverbial.

Additionally, these translative RPs also seem to behave like verbal particles and their canonical sublative counterparts in the contexts shown above in (4). Under negation or in focus constructions they are left behind in a postverbal position, while the rest of the phrase moves to a higher functional NegP or FocP (É. Kiss 2008). Consider the examples below in (19) and (20).

(19) a. *Kati nem alázta por-rá Jánost.*
Kati no humilated dust-TRANS János.ACC
'Kati didn't humiliate János completely.'
b. *KATI alázta por-rá Jánost (nem Mari).*
Kati humiliated dust-TRANS János.ACC no Mari
'It was Kati who humiliated János completely, not Mari.'

(20) a. *Kati nem törte por-rá a tojáshéjat.*
Kati no broke dust-TRANS the eggshell.ACC
'Kati didn't crush the eggshells to dust.'
b. *KATI törte por-rá a tojáshéjat (nem Mari).*
Kati broke dust-TRANS the eggshell.ACC no Mari
'It was Kati who crushed the eggshells to dust, not Mari.'

In (19a) and (20a), under negation, both kinds of translative RPs appear on the surface in a postverbal position. In subject focus contexts, in (19b) and (20b), both RPs are postverbal as well. The fact that lexical and superlexical translative RPs pattern with canonical RPs and VParts in these non-neutral contexts suggests that lexical and superlexical translative RPs and sublative RPs occupy a similar syntactic position, which I argue to be [Spec, AspP].

The first piece of evidence that the RPs *rommá* and *porrá* in (6) and (7) above serve different functions in the grammar even if their forms are syncretized is that the co-occurrence of superlexical RPs with verbal particles is disallowed (21). As we have seen previously, sublative RPs can co-occur with VParts, and so can translative lexical RPs (22).

(21) a. **Kati meg-alázta Jánost por-rá.*
Kati PRT-humiliated János.ACC dust-TRANS
Intended: 'Kati completely humiliated János.'
b. *Obamáék fel-díszítették a Fehér Házat rom-má.
Obama.APL PRT-decorated the White House.ACC ruin-TRANS
Intended: 'The Obamas decorated the White House from top to bottom.'

(22) a. *Kati össze-zúzta a tojáshéjat por-rá.*
Kati PRT-crushed the eggshell.ACC dust-TRANS
'Kati crushed the eggshells to dust.'

b. *A katonák le-bombázták a házat rom-má.*
the soldiers PRT-bombed the house.ACC ruin-TRANS
'The soldiers bombed the houses to ruins.'

In (21), the sentences with superlexical RPs are ungrammatical if they also have a particle in preverbal position. I consider this incompatibility to be support for my assumption that they have the same base-generation position in the syntax – they cannot co-occur since [Spec, AspP] can only host one syntactic element. In (22), the co-occurrence of particles and lexical RPs does not lead to ungrammaticality, which I assume to be evidence for their different base-generation sites – the particle is base-generated in [Spec, AspP], while the RP is base-generated in [Comp, VP].

Another piece of evidence that points in the direction that superlexical RPs are in fact different from lexical RPs is that lexical RPs can be modified by adjectives (23), while superlexical RPs cannot (24).

(23) a. *A katonák lakhatatlan rom-má bombázták a házakat.*
the soldiers uninhabitable ruin-TRANS bombed the houses.ACC
'The soldiers bombed the houses to uninhabitable ruins.'
b. **Obamáék csillogó rom-má díszítették a Fehér Házat.*
Obama.APL shiny ruin-TRANS decorated the White House.ACC

(24) a. *Kati finom por-rá törte a tojáshéjat.*
Kati fine dust-TRANS crushed the eggshell.ACC
'Kati crushed the eggshells to fine dust.'
b. **Kati finom por-rá alázta Jánost.*
Kati fine dust-TRANS humiliated János.ACC

In the (a) sentences, *rommá* and *porrá* can be modified by the adjectives *lakhatatlan* 'uninhabitable' and *finom* 'fine' which I take to be evidence for the nominal complements of the PPs, *rom* 'ruin' and *por* 'dust,' still being syntactically active nouns, contributing referential meaning. In the (b) sentences, the RPs cannot be modified by adjectives, which seems to suggest that the nouns *rom* 'ruin' and *por* 'dust' in these cases are not referential nouns by themselves but form a grammaticalized unit together with the case suffix.

With these distributional facts in mind, in the following section I comment briefly on the semantic behavior of lexical and superlexical result phrases.

4.2 On the semantics of superlexical RPs

The aim of the section is to briefly illustrate some semantic characteristics of Hungarian superlexical RPs and to argue for their distinct grammatical status when compared to lexical RPs.

Despite being able to supply verbal predicates with telic interpretations as evidenced by the *in/for* test above, superlexical RPs also admit the *for* durative adverbial on the interpretation that there were multiple events of the same kind, predicated of one and the same entity. This is reminiscent of what MacDonald (2008) calls the *sequence of identical events* interpretation. He points out that in English it is possible to interpret an event

description telically even when it is judged as compatible with the *for*-adverbial, which in most canonical examples only accompanies atelic event descriptions. In these cases, the interpretation is an iterative one, meaning that the same exact event happened several times during the given period of time (*carried a goat into the barn in 10 minutes* vs. *carried a goat into the barn for 10 minutes*). This is not possible with lexical RPs as illustrated below in (25) and (26).

(25) a. *Obamáék évekig rom-má díszítették a Fehér Házat.*
Obama.APL years.TERM ruin-TRANS decorated the White House.ACC
'The Obamas decorated the White House from top to bottom for years.'

b. *Kati évekig minden nap por-rá alázta Jánost.*
Kati years.TERM every day dust-TRANS humiliated John.ACC
'Kati completely humiliated János every day for years.'

(26) a. **/?A katonák napokig rom-má bombázták a házakat.*
the soldiers days.TERM ruin-TRANS bombed the houses.ACC

b. **Kati percekig por-rá törte a tojáshéjat.*
Kati minutes.TERM dust-TRANS crushed the eggshell.ACC

Superlexical RPs are compatible with the *for*-adverbial on the interpretation that the same excessive event took place over and over again, carried out by the same agent, with the same patient as the undergoer. Since it is not the case in the events described by the sentences in (25) that the object referents turn into new entities such as dust and ruin, but rather that they continue to exist even after the first decorating or humiliating event, it is possible for the same event to happen again. Since, however, in the events in (26), the eggshells and the houses no longer exist, once they are crushed or bombed, it is not possible to crush or bomb them another time, thus a *sequence of identical events* interpretation is not available with lexical RPs.

Additionally, if superlexical prefixes telicize and denote excessiveness, they should be paraphrasable by the combination of two elements that denote these meaning components separately – one that denotes excessiveness and one that telicizes. This is what we see in the examples in (27) and (28) below. A sentence with a superlexical RP is paraphrasable with a sentence containing the intensifier *nagyon* 'very' and a verbal particle.

(27) a. *János por-rá alázta Pétert.*
János dust-TRANS humiliated Péter.ACC
'János absolutely humiliated Péter.'

b. *János nagyon meg-alázta Pétert.*
János very PRT-humiliated Péter.ACC
'János really humiliated Péter.'

(28) a. *Obamáék rom-má díszítették a Fehér Házat.*
Obama.APL ruin-TRANS decorated the White House.ACC
'The Obamas decorated the White House from top to bottom.'
b. *Obamáék nagyon fel-díszítették a Fehér Házat.*
Obama.APL very PRT-decorated the White House.ACC
'The Obamas really decorated the White House.'

In the examples in (27b) and (28b), the meanings of superlexical *porrá* and *rommá* are decomposed by the use of the intensifier *nagyon* and a particle on the verb. In (27a) and (28a), these two meaning components – excessiveness and telicity – are packaged into one syntactic element, the superlexical RP.

The assumption that superlexical RPs lexicalize both of these meaning components is supported by the fact that they are unable to co-occur with either an intensifier or a particle. In (21) above, I have already illustrated the ungrammaticality of the co-occurrence of particles and superlexical RPs. Here in (29) and (30), sentences in which *nagyon* 'very' and superlexical RPs co-occur with each other sound redundant. I assume that this is due to the fact that the intensifier's meaning is already included in the meaning of the superlexical RP.

(29) *??János nagyon por-rá alázta Pétert.*
János very dust-TRANS humiliated Péter.ACC
Intended: 'János absolutely humiliated Péter.'

(30) *??Obamáék nagyon rom-má díszítették a Fehér Házat.*
Obama.APL very ruin-TRANS decorated the White House.ACC
Intended: 'The Obamas decorated the White House from top to bottom.'

On the other hand, however, canonical sublative RPs like *laposra* 'lit. onto flat' are modifiable by *nagyon* 'very.' This is shown below in (31). Additionally, as it has already been demonstrated above in (5), canonical Hungarian RPs can co-occur with VParts.

(31) *János nagyon lapos-ra kalapálta a vasat.*
János very flat-SUBL hammered the metal.ACC
'János hammered the metal really flat.'

In the literature on gradability (see e.g., Kennedy and McNally 2005, 2010, Bochnak 2010, 2013, *i.a.*), it has been argued that being modifiable by intensifiers like *very* would be an indication that a lexical element lexicalizes a gradable scale. Lexical elements that lexicalize a non-gradable scale do not admit modification by *very*. Consider (32).

(32) a. *The coffee at the airport is very expensive.*
b. ?? *That drug is currently very available.*
Kennedy and McNally (2005: 369, 370)

In (32a), the adjective *expensive* is assumed to lexicalize a gradable scale that is composed of multiple points, i.e., we may talk about different degrees of expensiveness. In (32b), on

the other hand, the adjective *available* is assumed to lexicalize a scale that is not gradable – a scale of availability only has two points, one corresponding to the drug being either available or not available with no in-between points like in the case of *expensive.*

As it was discussed above, Hungarian superlexical RPs also resist modification by *nagyon* 'very.' I assume, however, that this is not because they lack scalar structure but because they already lexicalize the intensifier's meaning. That they do in fact lexicalize a scalar structure is evidenced by the fact they are modifiable by a degree adverb such as *félig* 'half.TERM' (33) (see e.g. Beavers 2011, Bochnak 2013).

(33) *Kati félig por-rá alázta Jánost.*
Kati half.TERM dust-TRANS humiliated János.ACC
'Kati almost completely humiliated János.'

Based on the example in (33), it seems that *porrá* 'to dust' lexicalizes a gradable scale, similarly to gradable adjectives like *expensive*. Without any further modification, its function is to express that the result of the event described by the verbal predicate was excessive, but it appears that this additional meaning component of excessiveness is associated with a multi-point scale. It is possible, then, to modify these RPs with degree adverbs that express that the final point on the scale of excessiveness was not achieved.

With this synchronic analysis in mind, in section 5 I turn to the diachronic development of superlexical RPs in Hungarian. I illustrate with the help of both historical and contemporary corpus data that some superlexical RPs seem to be at a higher level of grammaticalization than others.

5. On the diachronic development of superlexical RPs

In this section I present some corpus data from three Hungarian corpora that feature superlexical RPs. The earliest data are from the Middle Hungarian Memoir and Drama Corpus, followed by data from the Hungarian Historical Corpus, and finally the contemporary data are taken from the Hungarian National Corpus. Based both on historical and contemporary data, it appears that three superlexical RPs, *rommá* 'to ruin', *porrá* 'to dust' and *halálra* 'to death' seem to be at different stages of grammaticalization which is evidenced by the different argument structural patterns that they allow, particularly regarding the kind of verb that they can appear with.

Hegedűs (2020) also relies on similar evidence when discussing the grammaticalization of Hungarian postpositional elements such as *át* 'over', *végig* 'along' or *közel* 'near' into verbal particles. She observes that *át* 'over' shows a high level of productivity and can appear with a variety of different verbs, as well as be followed by a variety of differently case-marked prepositional phrases. *Végig* 'along' is a P element that shows a lower level of flexibility regarding the kind of verb it can appear with or the kind of PP that the verb can be followed by, while *közel* 'near' is the least flexible both regarding the verb and the PP complement that can follow it.

Regarding the grammaticalization of result phrases in Hungarian, Forgács (2004) discusses the diachronic development of *agyon-* 'to death / over.' It is a verbal particle in Modern Hungarian, though its case-marked RP-like nature is still detectable today, as it can

be decomposed into *agy* ‘brain’ or originally ‘skull’ and *-on* which is the superessive case suffix, meaning ‘on/onto.’

Originally, dating back to the 17th century, *agyon-* was only used in its literal locative sense. For example, with the verb *üt* ‘hit’ it formed the compound *agyon üt* simply meaning ‘hit on the head.’ Over time, by around the 19th/20th century, it has lost this transparent, lexical ‘on the head’ meaning and has grammaticalized into a verbal particle-like element whose function is to lexicalize excessiveness.

On this semantically bleached interpretation, it functions as an intensifier and appears with a variety of verbs, meaning ‘over’ or ‘to death.’ For example, in *agyon-ver* ‘beat to death’ or *agyon-dolgozza magát* ‘work oneself to death.’ In Modern Hungarian, the particle verb *agyon-ver* does not mean ‘hit on the head,’ but that a person was beaten excessively, so much so that they have died. The ‘to death’ interpretation of *agyon-* seems to be even more semantically bleached in *agyon-dolgozza magát* ‘work oneself to death’ where the working activity does not lead to death, but simply means that a person has done an excessive amount of work and has become absolutely exhausted.

Additionally, regarding the RP *halálra* ‘to death’ Jurth (2013) notes that since in her corpus search in the Hungarian National Corpus she did not find any occurrences of the RP *halálra* ‘to death’ in co-occurrence with verbal particles, it must mean that *halálra* ‘to death’ itself has become a verbal particle-like element.

Superlexical uses of *porrá* ‘to dust’ and *halálra* ‘to death’ can already be found in the Middle Hungarian Memoir and Drama Corpus. P*orrá* ‘to dust’ appears in 6 sentence and *halálra* ‘to death’ appears in 7 sentences altogether, though there are no sentences containing *rommá* ‘to ruin.’ Examples are shown below.

(34) […] *egygyet* *se* *mukkany,* *mindgyárt* ***porrá*** ***zuzlak.*** (1762)
one.ACC not make.sound.IMP right.away dust.TRANS crush.1SG
‘Do not say a word, or I will ***crush you to dust*** right away.’

(35) *Meg-vagyon* *a* *parantsolat,* *hogy* *én* *amannak*
PRT-be.3SG the order that I that.person.DAT
tagjait ***porrá*** ***törjem*** […]. (1766)
limbs.POSS dust.TRANS break.1SG.SUBJ
‘I have been ordered to ***break*** that person’s limbs ***to dust.’***

Furthermore, the Hungarian Historical Corpus contains 300 instances of *porrá* ‘to dust’, 19 instances of *rommá* ‘to ruin’ and 1041 instances of *halálra* ‘to death.’ Consider the examples from (36) to (38).

(36) […] *hajnal* *hafadtánál* ***porrá*** ***törlek*** […]. (1780)
dawn breaking.ADE dust.TRANS I.break.you
I will ***break you to dust*** at the break of dawn.’

(37) ***rommá*** ***dőlt*** *életterve* […] *mellett* *miért* *csüggedne*
ruin.TRANS collapse.PART life.plan.POSS next.to why lament.COND
el *épen* *az* *ember* […]. (1858)
PRT even the person

'Why would someone even lament over […] their life's plan that has ***collapsed to dust?'***

(38) *mi utan* ***halálra*** ***neveték*** *magokat* *hívtak*
after which death.SUBL laugh.3PL themselves.ACC they.invited.me
templomba, […]. (1836)
church.ILL

These RPs in the sentences from (34) to (38) all describe situations in which it is not the case that the object referents turn into dust or ruin or die as a result of the events described by the verbs, but that the results of the events described by the primary predicates were excessive.

Finally, what the contemporary data from the Hungarian National Corpus seem to suggest is that *rommá* 'to ruin' and *halálra* 'to death' are at a relatively higher level of grammaticalization since they are able to co-occur with a variety of different verbs.

(39) […] *hogy* […] *az egész város* ***rommá*** ***röhögje*** ***magát.***
so.that the entire city ruin.TRANS laugh.SUBJ itself.ACC
'So the entire city will ***laugh itself to ruin.***'

(40) *míg egy nagy esőzés* ***rommá*** ***nem*** ***áztatta,***
'til one big rainfall ruin.TRANS no soaked.it.3SG
'til some heavy rainfall ***soaked it to ruin***'

(41) *és* ***rommá*** ***lövöm*** *a palit.*
and ruin.TRANS shoot.1SG the guy.ACC
'And I ***shoot the guy to ruin.***'

(42) *Arca* […] *kifejezéstelen, mint aki* ***halálra*** ***unja*** *az*
face.POSS.1SG expressionless like who death.SUBL bore.3SG the
egész hercehurcát.
whole thing.ACC
'His/her face is expressionless, like of somebody who is ***bored to death*** of the whole thing.'

(43) […] *a rituális táncosok szinte* ***halálra*** ***táncolják*** ***magukat.***
the ritual dancers almost death.SUBL dance.3PL themselves.ACC
'Ritual dancers almost ***dance themselves to death***.'

These superlexical RPs seem compatible both with transitive verbs and pseudo-object verbs of various types. Verbs of motion like *táncol* 'dance', verbs of nonverbal expression such as *röhög* 'laugh', but also verbs of killing such *lő* 'shoot' (for verb classifications and alternations, see Levin (1993)).

On the other hand, in comparison with *rommá* 'to ruin' and *halálra* 'to death', *porrá* 'to dust' appears to be at a lower level of grammaticalization. It seems less productive and seems to show a tendency for co-occurring with verbs describing disintegration.

(44) *[Az] előválogató testület négy jelentkező reményeit gyorsan*
the preselection board four applicant hopes.POSS.ACC quickly
porrá ***zúzta.***
dust.TRANS crushed.3SG

'The preselection board quickly ***crushed the hopes of four applicants to dust***.'

(45) […] *a nevezők fele az első kanyarban* ***porrá***
the applicants half.POSS the first turn.INE dust.TRANS
törte *a járművét*.
broke.3SG the vehicle.POSS.ACC
'Half of the applicants ***broke their vehicles to dust*** at the first turn.'

As opposed to the high level of productivity in the case of *rommá* 'to ruin' and *halálra* 'to death', *porrá* 'to dust' mostly appears with verbs such as *zúz* 'crush' and *tör* 'break.' In other words, these are verbs which are transitive and describe processes of disintegration.

Based on these data, it appears that not all superlexical RPs are at the same level of grammaticalization. Since *rommá* 'to ruin' and *halálra* 'to death' show a higher level of productivity, it can be said that they are further along the grammaticalization process than *porrá* 'to dust', which shows a lower level of productivity.

6. Conclusion

I have argued for a syntactic distinction between lexical and superlexical result phrases in Hungarian. I have attempted to show that superlexical RPs are grammaticalized, adverbial elements that are base-generated in the specifier of an aspectual functional projection between *v*P and VP just like verbal particles, while lexical RPs are base-generated in the complement of VP.

I also assume that the RPs that I have cited above in my examples are becoming grammaticalized in a similar fashion, just like *agyon-*. I have attempted to briefly demonstrate the diachronic development of RPs in Hungarian such as *rommá* 'to ruin', *porrá* 'to dust' and *halálra* 'to death'. It appears that similarly to *agyon-* these RPs are also going through a grammaticalization process and are taking on verbal particle-like functions, though not all of them seem to be at the same level of grammaticalization.

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NP_2 copular agreement in Czech presentational contexts*

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Abstract
We discuss a class of classificatory NP-NP copular clauses, such as *This tree is a linden tree*. They display NP_2 φ-feature agreement (copular and inter-sentential anaphoric agreement), even though NP_2 is a predicate. We argue that this agreement is mediated by a complex covert pronoun in the Middlefield topic position. The proposal thus predicts that only languages in which the covert pronoun can be merged in the Middlefield position may have NP2 agreement. Second, even if a language allows NP_2 agreement, NP_2 agreement arises only when no other element occupies the Middlefield topic position. Moreover, our proposal has semantic consequences. We argue that semantic double-classification of an individual (as a tree and as a linden tree, in our example) must involve two derivational steps (two applications of extended conceptual covers, Aloni 2001).

Keywords: NP-NP copular clauses, NP_2-agreement, topic, Middlefield, classification.

1. The empirical challenge

1.1. Copular clause primer

Since the seminal work of Higgins (1979), formalized in contemporary terms in Mikkelsen (2005), scholars distinguish at least three types of NP-NP copular clauses: **predicational** clauses, as in *Mary is a doctor*, **specificational** clauses, as in *The problem is the children*, and **identificational** clauses, as in *This doctor is Max*. The differences can be nicely demonstrated in Czech, a Western Slavic language in the centre of our investigation, as Czech displays morphosyntactic properties that highlight the structural differences among these three types of copular clauses (Bartošová 2017, a.o.). In this

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language, only nominals in Nominative case may trigger φ-feature agreement, and, conveniently, subject NPs of copular clauses must be in Nominative. Moreover, the copular verb (a form of *be*) is always overt and agrees in number and person in all tenses, and crucially, it also agrees in (grammatical) gender in the past. The latter property makes it possible to track which nominal within a copular clause is the source of φ-feature agreement. As for predicate NPs, they may alternate between Nominative and Instrumental case, that is, between two structural cases that reflect aspect and event properties of the copular clause. Very roughly, only stage-level predicates display this case alternation. Crucially, individual-denoting NPs never display this case alternation.

With this background in mind, let us consider an example of a predicational clause, (1). Here, NP_1 (*Marie*) is **individual-denoting**, and NP_2 (*professor*) is a predicate. As the example demonstrates, the copular agreement in predicational clauses is always with NP_1. This NP is in Nominative. NP_2 cannot trigger agreement and may alternate between Nominative and Instrumental.

(1) *Marie byla/ *byl profesor/ profesorem*
Marie.**F**.SG was.**F**.SG/was.**M**.SG professor.**M**.SG.NOM/INST
na univerzitě.
at university
'Marie was a university professor.'

Specificational and identificational clauses are crucially different in that their NP_2 is **individual-denoting**, and in some languages, it may trigger agreement (Moro, 1991, a.o.). Czech is such a language. An example of a specificational clause is given in (2). Here, NP2 specifies or provides an answer to a question raised by NP_1, which gives rise to implementations where NP_1 is construed as a concealed question or a proposition (Romero 2005, Heycock 2012, a.o.). NP_2 is also the source of agreement and must be in Nominative. NP_2 alternates in case.

(2) *Ten problém/ problémem jsou děti.*
the.m.sg problem.M.SG.NOM/INSTR are children
'The problem is the children.'

In identificational clauses, NP_2 assigns some form of a referential identity to NP_1. This can be modeled, for example, via a special semantic operator, such as the one proposed in Percus and Sharvit (2024). As we can see in (3), in these clauses the copular agreement is triggered by NP2. In these clauses, NP_1 is mostly in Nominative. Instrumental requires a special scenario, such as a role-playing scenario; otherwise**,** the temporal restriction that Instrumental enforces on the referential identity matching is judged as infelicitous (e.g., Uličný 2000), (4).

(3) *Ten doktor byla Marie.*
this.M.SG doctor.M.SG.NOM was.F.SG.NOM Marie.F.SG.NOM
'This doctor was Marie.'

(4) *Tím* *doktorem* *byla* *Marie.*
this.M.SG doctor.M.SG.INSTR was.f.SG.NOM Marie.F.SG.NOM
'Marie was (=played/ personified) the doctor.'

Existing accounts of NP_2 agreement implement the overarching intuition that in the relevant languages NP_1 of identificational and specificational clauses is not structurally accessible to agreement. This may be because the nominal is not the underlying subject and it only moved to the subject position (Mikkelsen 2005, Dikken 2006, a.o.), or because it corresponds to a more complex structure that lacks *φ*-features (e.g., a concealed proposition or a concealed question; Romero 2005, Heycock 2012, a.o.). Under these accounts, the crosslinguistic variation between NP_1 and NP_2 agreement is then reduced to differences in the feature composition of the probe, for example, as in Béjar and Kahnemuyipour (2017, 2018).

1.2. Enter Czech and German classificatory clauses

In addition to these three types, Czech (and also German) exhibits a distinct class of copular clauses which has previously been characterized as a class of identificational clauses (Higgins 1973, Mikkelsen 2005). They are typically used in a presentational context but are not necessarily constrained to it. We call them *classificatory clauses* to distinguish them from typical identificational clauses with an individual-like NP_2. In this paper, we only discuss Czech data because they display gender and number agreement in all relevant environments. Consider the data in (5).

(5) a. *Tenhle strom* *byl/* *byla* *lípa.*
this tree.M.SG was.M.SG/was.F.SG linden_tree.F.SG
'This tree was a linden tree.' (e.g., while pointing at a tree stamp)
b. *Tenhle film* *byl/* *byla* *komedie.*
this movie.M.SG was.M.SG/was.F.SG comedy.F.SG
'This movie was a comedy.' (e.g., while pointing at an old movie poster)
c. *Tahle sazenice* *byla/* *byl* *dub.*
This seedling.F.SG was.F.SG/was.M.SG oak.M.SG
'This seedling was an oak.' (e.g., while pointing at a pile of seedlings roughed up by a puppy)

The first property that distinguishes these clauses from their better-established counterparts is that both NPs must be in Nominative. There is no case alternation we have observed with the other types of copular clauses. Second, these clauses exhibit **variable agreement**. That is, the copula can agree either with NP_1 or with NP_2. There is no evidence that the difference in agreement would correlate with movement of one of the NPs. Third, the *φ*-features (person, number, gender) of an inter-sentential anaphor can match the *φ*-features of either NP_1 or NP_2, as demonstrated in (6). Czech is a *pro-drop* language. We include a pronominal subject in these examples, but the more natural version is with the subject being dropped and its features only being reflected on the verb.

(6) *Tenhle strom* *byl/* *byla* *lípa.*
this tree.M.SG was.M.SG/F.SG linden_tree.F.SG
'This tree was a linden tree.'
a. *(On) byl* *vysoký.*
(he) was.M.SG tall.M.SG
'It[=the tree] was tall.'
b. *(Ona) byla* *vysoká.*
(she) was.F.SG tall.F.SG
'It[the linden tree] was tall.'

These three properties are entirely unexpected once we consider an additional critical fact, namely, that in classificatory clauses, NP_2 is always a predicate. Unlike in other copular clauses where NP_2-agreement has been associated with individual-denoting properties of NP_2, in classificatory clauses NP_2 is not a referential expression or an existential quantifier of a sort. This can be simply demonstrated by the observation that NP_2 in these clauses does not display any scope interactions with any known operator. The pseudo-Czech examples in (7) demonstrate the readings we do not get.

(7) a. This tree is not a linden tree.
≠ There is a linden tree such that this tree is not it.
b. Every tree is a linden tree.
≠ There is a linden tree such that that every tree is it.

Note that even if we were to assume that the copula construction (PredP') was a scope island, this would still not help, because it is well known that indefinites should be able to ignore scope islands. Hence, any analysis that uses the assumption that NP_2 is referential to derive agreement with NP_2 seems empirically problematic.

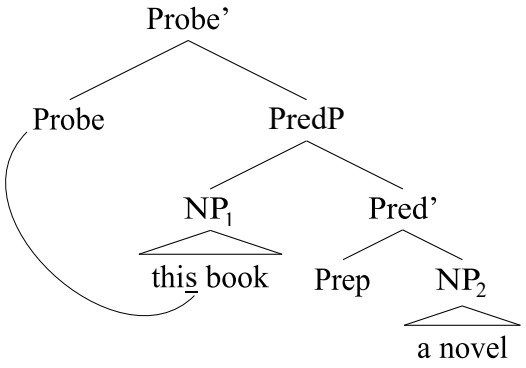
We are now in a position to formulate the puzzle and our research questions. First, in other structural environments in Czech, predicates do not trigger agreement in gender and number. Instead, default agreement, i.e., agreement in neuter singular, is attested with them. However, in classificatory clauses**,** the copula seems to agree with a predicate. This is our first puzzle. The second puzzle concerns anaphors. In other environments, anaphors referring to non-individuals display default agreement (neuter singular). However, in classificatory clauses**,** an anaphor seems to agree with a predicate.

These properties also demonstrate how this class of copular clauses differs from its better-established counterparts. That NP_1 is individual-denoting and that NP_2 is a predicate makes these clauses similar to predicational copular clauses. In contrast, the fact that NP_2-agreement is possible and the fact that NP_2 cannot be in Instrumental case makes them look more like identificational clauses.

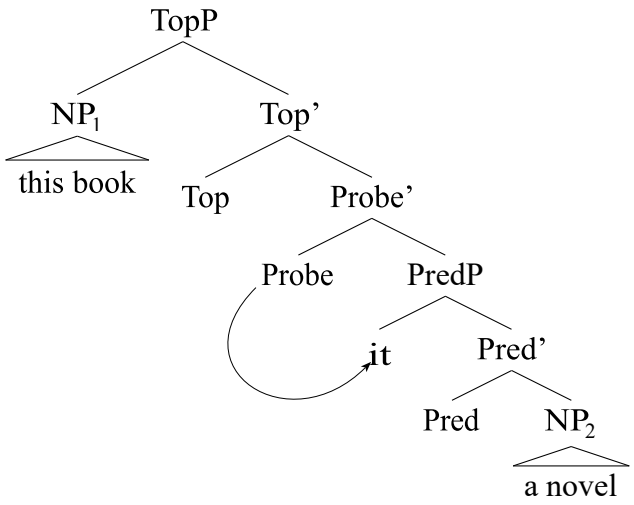
In order to account for these properties, we will argue that we are dealing with a case of a structural ambiguity, and that the agreement variability—both for copula agreement and inter-sentential anaphors—results from two underlying structures. The first structure corresponds to a regular predicational clause. This structure will give rise to an obligatory

NP_1 agreement. The second structure is more complex. We argue that true classificatory clauses (we will define below what exactly we mean by that) are derived within presentational clauses in which NP_2 agreement is mediated by a complex covert pronoun which we will call *it*. This pronoun will inherit features of NP_2 (via concord), and it will inherit referential properties of NP_1 in a binding-like configuration. We will motivate the presence of the covert pronoun by the semantic interpretation of classificatory clauses, and by structural restrictions on when this special type of semantic interpretation arises. A simplified version of the predicational structure we will assume is given in (8), and a simplified version of the more complex structure of classificatory clauses is given in (9).

(8) *A simplified predicational structure:*



(9) *A simplified presentational structure*:



While in the predicational structure, (8), NP_2 predicates directly over NP_1, and NP_1 is the closest accessible goal for the active probe, the presentational structure, (9), is more complex. Here, NP_2 does not predicate over NP_1. Instead, it predicates over the covert pronominal. NP_1 is merged higher in the structure, namely, in the specifier of TopicP, which makes it inaccessible to a low agreement probe. Agreement is then with the covert pronoun, and

indirectly with the φ-features of NP_2.

The consequence of this proposal is that when NP_1 cannot be merged in TopicP either because the language lacks a Middlefield TopicP (as in English), or because the position is occupied by another structural element (we will see examples below), only NP_1 agreement is possible.

The story for the anaphoric agreement will be slightly less straightforward because we need to account for the fact that even predicates can indirectly function as anaphoric antecedents if the pronoun is interpreted as an elliptical definite description that has a presupposition entailed by the initial sentence (Elbourne, 2005). Since such an interpretation requires an accommodation, we will rely on subtle judgement differences between anaphoric expressions with a structurally present antecedent (high ratings) and those where the antecedent needs to be accommodated (lower ratings, slower processing). With this clarification in place, anaphoric agreement displaying φ-features of NP_2 will either result from a direct agreement with *it*, or via the Elbourne-style of accommodation procedure with NP_2.

In addition to discussing a previously unreported type of copular clauses, our proposal reduces crosslinguistic differences in agreement patterns within copular clauses to independently motivated restrictions on the availability of argument positions in the structure, namely, the availability of the Middlefield topic position.

2. The case for a covert pronoun

Our analysis critically relies on the assumption that there is a covert pronominal element in the structure. Since diagnosing covert elements is notoriously difficult, we will first discuss the evidence that points in the direction of such an element. Let us first recall the basic properties of Czech copular clauses. The essential contrast we are trying to explain is between predicational clauses, such as that in (10), in which the copula must agree with NP1, and classificatory clauses, such as those in (11), where NP_2 classifies NP_1 and the copula may agree either with NP_1 or with NP_2. Crucially, NP_2 retains its predicative properties in both agreement patterns. Note also that the pattern cannot be explained by some form of markedness, as any combination of gender features is possible in these sentences, and the agreement is still variable.

(10) *Marie* *byla/* **byl* *profesor* *na univerzitě.*
Marie.F.SG was.F.SG/was.M.SG professor.M.SG at university
'Marie was a university professor.'

(11) a. *Tenhle strom* *byl/* *byla* *lípa.*
this tree.M.SG was.M.SG/was.F.SG linden_tree.F.SG
'This tree was a linden tree.' (e.g., while pointing at a tree stamp)
b. *Tenhle film* *byl/* *byla* *komedie.*
this movie.M.SG was.M.SG/was.F.SG comedy.F.S
'This movie was a comedy.' (e.g., while pointing at an old movie poster)

c. *Tahle sazenice* *byla/* *byl* *dub.*
This seedling.F.SG was.F.SG/was.M.SG oak.M.SG
'This seedling was an oak.' (e.g., while pointing at a pile of seedlings roughed up by a puppy)

The fact that the copula appears to agree with a predicative NP, i.e., NP_2, is unexpected. For predicates do not trigger gender/number agreement in Czech. Instead, they appear in default agreement configurations (neuter singular), as exemplified by (12).

(12) *Být* *pracovitý* *bylo* *užitečné.*
to_be hard_ working.M.SG was.N.SG useful.N.SG
'To be hard working was useful.'

Critical insights come from anaphoric agreement properties. Even though the *φ*-features of an inter-sentential anaphor can match either NP_1 or NP_2, speakers prefer the copular and anaphoric agreement to match (confirmed with several speakers of Czech in interviews), but a mixed pattern is accepted as well (13).

(13) *Tenhle strom* *byl/* *byla* *lípa.*
this tree.M.SG was.M.SG/F.SG linden_tree.F.SG
'This tree was a linden tree.'
a. *(On) byl* *vysoký.*
(he) was.M.SG tall.M.SG
'It[=the tree] was tall.'
b. *(Ona) byla* *vysoká.*
(she) was.F.SG tall.F.SG
'It[=the linden tree] was tall.'

Similar to predicates, Czech anaphors display default agreement (neuter singular) when referring to non-individual denoting phrases. The distinct continuations in (14a) and (14b) demonstrate this. When the antecedent of the anaphor is construed as an individual, then the anaphor agrees in *φ*-features with the individual-denoting NP (14a). When the antecedent is propositional or situation-denoting, then the anaphor is in neuter singular (14b).

(14) *Petr chodil s dívkou z Prahy…*
Petr walked with girl from Prague
'Petr dated a girl from Prague.'
a. *Ta* *byla* *nudná.*
that.F.SG was.F.SG boring.F.SG
'She was boring.'
b. *To* *bylo* *nudné.*
that.N.SG was.N.SG boring.N.SG
'It [=dating the girl from Prague] was boring.'

Moreover, as (15) shows, predicative NPs in predicational copular clauses cannot function as antecedents of anaphors. This fact also demonstrates that being an NP in Nominative is not a sufficient condition to function as an antecedent of an individual-denoting anaphor.

(15) *Marie* *byla* *profesor* *na univerzitě.*
Marie.**F**.SG was.**F**.SG professor.**M**.SG.NOM at university
'Marie was a university professor.'
a. Byla úspěšná.
was.**F**.SG successful.**F**.SG
`She was successful.'
b. #Byl úspěšný.
was.**M**.SG successful.**M**.SG
Intended meaning: `She was successful.' (can only mean `some previously mentioned male was successful')

Yet, in classificatory copular clauses inter-sentential anaphors can share φ-features with a predicative NP – NP_2. This is entirely unexpected.

Moreover, the observed variability in anaphoric agreement correlates with distinct semantic interpretations. While the anaphor agreeing with NP_1 is compatible with a range of predicates, the anaphor agreeing with the φ-features of NP_2 restricts the interpretation of the individual denoted by NP_1 only to the semantic content classified by NP_2. We demonstrate what we mean first with the English example in (16). As the continuations demonstrate, the meaning of the anaphoric *it* is ambiguous between the book as the physical object and the content of the book (i.e., as being a novel).

(16) This book is a historical novel.
a. It is heavy [=the book as a physical object, not the novel as its content]
b. It is engaging [= the content of the book being a novel]

As (17) demonstrates, when the copula of a classificatory clause agrees with NP_1, we retain the antecedent ambiguity attested in English. However, when the copula and the anaphor agree with NP_2, only the continuation referring to the classified content of the book, that is, the book being a novel, is felicitous (18).

(17) *Tahle* *knížka* *byla* *historický román.*
this.F.SG book.F.SG was.F.SG historical novel.M.SG
'This book was a historical novel.'
a. *Byla* *těžká.*
was.F.SG heavy.F.SG
'It was heavy.' [=the book as a physical object, not the novel as its content]
b. *Byla* *nudná.*
was.F.SG boring.F.SG
'It was boring.' [= the content of the book being a novel]

(18) *Tahle knížka byl historický román.*
this.F.SG book.F.SG was.M.SG historical novel.M.SG
'This book was a historical novel.'
a. *#Byl těžký.*
was.M.SG heavy.M.SG
Intended: 'It was heavy.' [=the book as a physical object, not the novel as its content]
b. *Byl nudný.*
was.M.SG boring.M.SG
'It was boring.' [= the content of the book being a novel]

The profile of the anaphoric data strongly suggests that even though it looks like the anaphoric agreement is directly with NP_2, it is in fact with a *new object* created by NP_2 classifying over NP_1.

There is one more piece of data we have not discussed yet. The variable agreement only arises when the copula linearly intervenes between NP_1 and NP_2. When the copula precedes NP_1, the copula must agree with NP_1, as in (19). In this case, anaphoric agreement with NP_2 requires an accommodation of the corresponding antecedent, which is readily available in configurations that yield NP_2 copular agreement.

(19) *Podle mého názoru, byl/ *byla tenhle strom lípa.*
according_to my opinion was.M.SG/*was.F.SG this tree.M.SG linden_tree.F.SG
'In my opinion, this tree was a linden tree.'
a. *(On) byl vysoký.*
He was.M.SG tall.M.SG
'It was tall.'
b. ??*(Ona) byla vysoká.*
she was.F.SG tall.F.SG
'It was tall.'

A similar word-order pattern has been reported for other NP_2-agreement copular clauses. Specifically, Hartmann and Heycock (2018, 2020) report that Germanic speakers (German, Icelandic, Faroese) require NP_2 agreement in specificational and identificational clauses when the copula intervenes between NP_1 and NP_2, while they allow or even strongly prefer NP_1 agreement in configurations in which the copula linearly precedes NP_1. The Germanic pattern goes against the spirit of existing analyses of NP_2 agreement because they crucially assume that the internal structure of NP_1 does not lend itself to being an accessible Agree goal. Making the copula potentially closer to NP_1 should not make a difference. We will adopt this overall conclusion for our classificatory clauses as well, and instead of assuming that NP_1 simply became a closer goal, we will consider a different structural solution.

We will put forward a proposal that strictly relies on the presence of a covert complex pronoun, and we will argue that what is special about the copula–NP_1–NP_2 orders is that their structure does not allow for this covert pronoun to be merged. Instead, the linear order is only compatible with a regular predicational clause, and in turn only displays NP_1 agreement. When, however, the pronoun can be merged, we obtain a presentational structure in which

the pronoun inherits φ-features of NP_2, and the copula and the inter-sentential anaphor may indirectly agree with them, giving rise to what looks like NP_2 agreement.

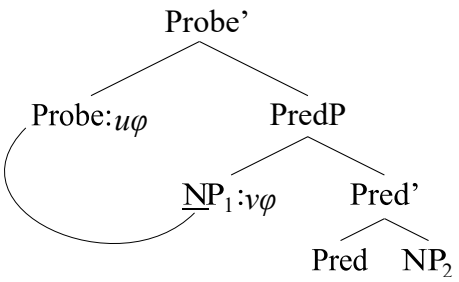
3. The analysis

We argue that the variable agreement attested with classificatory clauses reflects a structural ambiguity. The linear string of these clauses is compatible with an analysis that corresponds to a predicational clause, and an analysis that requires a new type of structure – a presentational clause where the agreement is mediated by a covert complex pronoun.

3.1. The predicational structure

Let us first consider the predicational structure option. With much of the literature on predicational clauses, we assume that NP_1 and NP_2 form a small clause. When the φ-Probe merges in the structure, NP_1 is the closest accessible goal. In turn, NP_1 values the unvalued φ-features of the Probe (we will discuss the structural identity of the Probe later in this section). Finally, NP_1 raises to Spec,TP to satisfy the EPP. A simplified structure of the proposed derivation is given in (20). The tree only includes the relevant part of the derivation where we see why NP_1 is the source of agreement.

(20)



In terms of semantics, we assume a standard analysis according to which NP_1 is applied as a semantic argument of NP_2. However, our analysis is also easy to restate using silent semantic operators that combine the elements of the small clause, e.g., along the lines of Percus and Sharvit (2024).

The structure we assume has one individual-denoting NP – NP_1 – that can serve as an anaphoric antecedent. However, since an anaphoric pronoun construed as an elliptical definite description would have its presupposition entailed by the first sentence, anaphoric reference using the φ-features of NP_2 is not completely excluded (Elbourne, 2005).

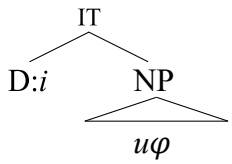
3.2. The presentational structure

Our analysis crucially relies on the intuition that when an anaphor displays φ-features of NP_2, it does not refer to the predicate denoted by NP_2. Instead, it refers to a new object formed by NP_2 classifying over NP_1. This intuition is supported by the data we repeat in (21). When the copula agrees with NP_2 and the anaphor shares features of NP_2, the predication quantifies over the classified content of NP_1, instead of NP_1 itself.

(21) *Tahle knížka byl historický román.*
this.F.SG book.F.SG was.M.SG historical novel.M.SG
'This book was a historical novel.'
a. *#Byl těžký.*
was.M.SG heavy.M.SG
Intended: 'It was heavy.' [=the book as a physical object, not the novel as its content]
b. *Byl nudný.*
was.M.SG boring.M.SG
'It was boring.' [= the content of the book being a novel]

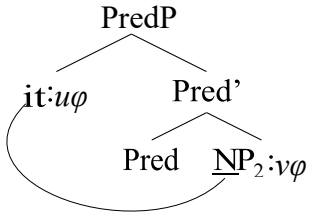
The intuitive meaning we get is IT (=*what this book is*) is a historical novel. We model this intuition as a relationship between NP_1 and NP_2 mediated by an additional structural element, which we formalize as a complex covert pronoun – IT. For concreteness, we assume that the covert pronoun is composed of a nominal part (a set of unvalued *φ*-features – *uφ*) and a variable (*i*; akin to Kratzer 2009's minimal pronoun index).

(22) *The structure of IT:*



This complex pronoun (IT) forms a small clause with NP_2. Once the small clause is formed, the unvalued *φ*-features of IT get valued by the features of NP_2 by concord (or possibly by Agree, if the pronoun is directly merged with NP_2, prior **to** the predicative functional structure being merged). The first part of the derivation is schematized in (23).

(23)



This initial derivational step captures two of our core empirical generalizations: First, in this structure, NP_2 fully retains its predicative properties, as it predicates over the covert pronoun IT. Second, the structure now contains an individual-denoting element that can become an antecedent of an anaphor, and the anaphor then may indirectly match the *φ*-features of NP_2.

At this derivational stage, however, the covert IT still contains an unbound variable. We argue that in the presentational structure of classificatory clauses the variable gets bound by NP_1, merged higher in the structure. The question is where.

3.2.1. NP_1 is merged in Spec,TopicP

Our proposal needs to capture two generalizations discussed in section 2. First, since the copula agrees with the features of NP_2, mediated by the covert pronoun IT, the copula – or, more precisely, the Probe that determines the features of the copula – needs to be structurally closer to IT than (the base-generated position of) NP_1. Second, since XP-copula-NP_1-NP_2 orders only allow NP_1 copular agreement (and disprefer NP_1 anaphoric agreement), this structure cannot contain the covert pronoun IT. The core data **are** repeated in (24).

(24) *Podle mého názoru, byl/ *byla tenhle strom lípa.*
according_to my opinion was.M.SG/ *was.F.SG this tree.M.SG linden_tree.F.SG
'In my opinion, this tree was a linden tree.'
a. *(On) byl vysoký.*
he was.M.SG tall.M.SG
'It was tall.'
b. *?? (Ona) byla vysoká.*
she was.F.SG tall.F.SG
'It was tall.'

Critically, the restriction on NP_2 agreement arises only when NP_1 remains lower in the structure. As we can see in (25), when NP_1 follows the XP and precedes the copula, NP_2 agreement is possible.

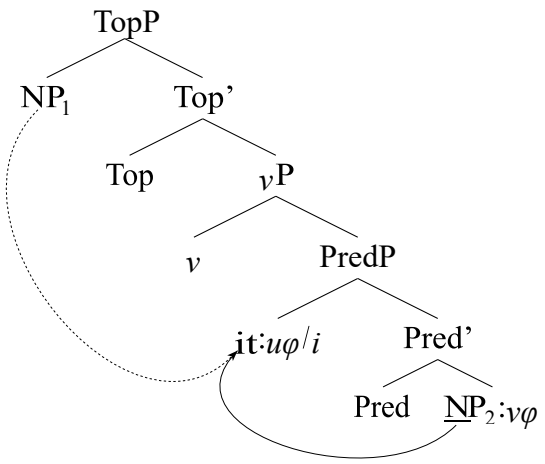
(25) *Podle mého názoru, tenhle strom byl/ byla lípa.*
according_to my opinion this tree.M.SG was.M.SG/was.F.SG linden_tree.F.SG
'In my opinion, this tree was a linden tree.'
a. *(On) byl vysoký.*
he was.M.SG tall.M.SG
'It was tall.'
b. *(Ona) byla vysoká.*
she was.F.SG tall.F.SG
'It was tall.'

The data strongly suggest that when NP_1 stays low, the covert pronoun IT cannot be in the structure. In other words, the pattern suggests that NP_1 is in a complementary distribution with the covert pronoun IT. In contrast, when NP_1 raises, it may raise from a position that is distinct from the base-generated position of IT.

To account for the contrast, we argue that in the NP_1 agreement configurations, NP_1 gets merged in the specifier of TopicP, an A-position located in the Middlefield (e.g., Frey 2000 for German). The covert pronoun IT itself merges in the specifier of the small clause.

The result is that the φ-features of IT get valued by NP_2, and its open variable gets bound by NP_1. The corresponding syntactic derivation is schematically given in (26).

(26)



3.2.2. *v* as the primary *φ*-Agree probe

So far, we have not addressed the question of the identity of the *φ*-Agree probe. If our reasoning about the derivational steps is correct, then T cannot be the relevant *φ*-Agree probe. Instead, we argue that the primary *φ*-Agree probe in Czech (but also in German we do not discuss in detail here) is *v*.

If T were the probe, then NP_1 would always be closer, and there would be no NP_2 agreement. This reasoning holds irrespective of whether we only assume downward Agree or whether we allow agreement to take place in specifier-head configurations (or some version of upward Agree). For T to be the probe and for the covert pronoun IT to be structurally closer to T, NP_1 would have to merge higher than T, for example, in the specifier of TP (assuming Agree is strictly downward). However, such a structure would incorrectly predict that NP_1 should never be in a complementary distribution with the covert pronoun IT. Therefore, *v* must be the primary probe (see e.g. Sigurðsson 2012, Schäfer 2012, Kučerová 2016 for other data patterns and analyses arguing for *v* being the primary probe in languages that, like Czech, display NP_2 agreement).

3.3. But why the covert pronoun when the predicative structure is possible?

At this point, we still face another question: Why is the covert pronoun IT needed and why can't we always merge NP_1 in the small clause (as it seems to be the case in languages like English)? We propose a semantic answer.

We assume that classificatory clauses in their presentational guise generally answer a question under discussion (in the sense of Roberts 2012 and subsequent literature) such as those in (27).

(27) This is NP_2.
  a. What is this?
  b. Who is this?

The availability of these two types of questions under discussion (with 27b being restricted to animate referents) precisely mirrors the intuition that the intuitive reading of (27) is (28):

(28) What this is is NP_2.

Simplifying somewhat, we model a question such as (27a) as in (29).

(29) $\{\lambda w.P(w)(this)|P \in_{<s,et>} \wedge P \in CC\}$

Thereby, CC is understood as an extended conceptual cover (Aloni, 2001) defined as follows:

(30) CC is a conceptual cover exactly iff:
$\forall w \in W : \forall d \in D : \exists! P \in CC : P(w)(d)$

What (30) expresses is that a conceptual cover is essentially a partition of concepts such that for every individual in any world there is exactly one concept that applies to it. In practical terms, we assume that a conceptual cover always only applies to a subset of individuals and is contextually determined. This makes essentially all full taxonomies of the conceptually relevant domain of individuals a conceptual cover. By contrast, the original theory of Aloni (2001) had a stronger requirement that restricted members of conceptual covers to individual concepts.

We further assume a general semantic principle according to which there is a minimal syntactic or pragmatic domain in which the *wh*-word and the descriptions of other elements of that domain cannot belong to different CCs. Consider the example in (31).

(31) This tree is a linden tree.

Suppose we had no IT pronoun and NP_1 and NP_2 were interpreted in the same minimal domain as a presentational construction. The question under discussion would then be: *What is this tree?* And since this tree is already a concept denoting the relevant object, the only possible true answer would be (32).

(32) This tree is this tree.

We follow Gajewski (2002) in assuming that such L-analytical sentences are ungrammatical. Thereby, a sentence is L-analytical if its meaning is tautological or contradictory regardless of which non-logical lexical items are used in the sentence. Precisely this would be the case for (32). The IT pronoun, having no features of its own, circumvents this principle, as no features constrain the CC.

One crucial prediction is that whenever NP_1 is topical the issue does not emerge, as the reference of NP_1 is "handled" at a higher discourse level. This semantic assumption makes two immediate predictions. First, in presentational constructions, the NP_1 must always be topical and will have a trace with no interpreted features relevant to CCs. Second, if the NP_1 is base-generated in a topic position, it can bind an element that has no intrinsic φ-features that are relevant to CCs.

Another prediction is related to the availability of Topic positions and anaphoric agreement. If a language does not have a low argumental Topic position (in the Middlefield),

such a language cannot accommodate a copular clause with two NPs and a presentational pronoun such as the covert pronoun IT we propose. Consequently, such a language only allows NP_1 agreement. This prediction is borne out in languages like English (33).

(33) I am / *are you.

Since this type of language cannot accommodate both NP_1 and a covert pronoun like IT, presentational copular clauses in these languages are expected to only have a presentational pronoun as NP_1 (34).

(34) That/ It was Mary.

5. Conclusions

Our case study demonstrates that NP_2 agreement in copular clauses may be mediated by an additional structural element. If our proposal is on the right track, it opens a real possibility that the linguistic variation in the domain of NP_2 copular agreement reduces to the availability of the mediating element – in our case, the covert pronoun IT. The availability of such a pronoun correlates with an independently attested language property: the availability of a topic position in the Middlefield. No other mechanism is needed.

As for the proposed semantic interpretation, conceptual covers (CCs) are our way to spell out the intuition that these constructions classify the presented item.

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HOWs as Syntactic Predicates: Evidence from Tsou and Saisiyat*

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Abstract
This paper reexamines the cross-linguistic generalization that interrogative HOW words function primarily as adverbs by demonstrating that in two Formosan languages—Tsou and Saisiyat—HOWs operate as full lexical verbs with predicative capabilities. By systematically applying five syntactic diagnostics (primary predication eligibility, theta-role assignment, object topic licensing, clause embedding, and complementation with control/causative verbs), we establish that HOWs in these languages are lexical predicates rather than adjuncts or light verbs. Furthermore, we identify an interrogative split: Measure/Resultative HOWs consistently employ structures of subject-predication in both languages, while Manner/Method HOWs exhibit complementation with obligatory control and voice concord of Saisiyat but either coordination or complementation in Tsou. This structural divergence suggests a grammaticalization pathway from coordination to complementation, with Tsou preserving the conservative pattern, while Saisiyat represents an innovative development. Our findings contribute to the cross-linguistic typology of interrogative words, control theory, voice restructuring phenomena in Austronesian languages, and clause union hierarchies.

Keywords: interrogative HOW, lexical predicate, transitivity, agreement, coordination, complementation, control restructuring

1. Introduction and Background

1.1. The cross-linguistic status of interrogative HOWs

Across the world's languages, interrogative HOW words overwhelmingly function as adverbial elements—that is, adjuncts which modify predicates without functioning as predicates themselves. In English, for instance, HOWs question manner or degree (*How did Mary cook the fish?*) but do not introduce arguments or license object positions. This adverbial pattern is typologically dominant for encoding manner, method, measure, and degree interrogatives. However, a small subset of languages exhibits a strikingly different pattern wherein HOW words function as full verbs. Hagège (2008) documents rare cases where manner interrogatives are encoded as verbal predicates; however, such cases remain exceptional typologically.Formosan languages—the indigenous Austronesian

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languages of Taiwan—stand out as particularly systematic examples of this phenomenon. Extensive previous research has documented verbal HOWs across multiple languages in the family, including descriptions by C. Chang (1996), H. Chang (1997, 2024), Huang et al. (1999), Tsai and M. Chang (2003), Chou (2008), Lin (2015), Yeh (2018a), Hsieh (2019), and Tsai (2024), among others. These foundational studies provide the empirical backdrop for the present investigation.

1.2. Formosan languages and voice systems

The Formosan language set comprises approximately 14 languages spoken by indigenous communities in Taiwan, representing the highest internal diversity within Austronesian and likely preserving archaic features of Proto-Austronesian (Blust 2013). These languages exhibit complex voice/focus systems that have been central to debates about the nature of Philippine-type alignment, with scholars disagreeing on whether voice represents feature agreement/nominative-accusative case alignment or transitivity/ergative-absolutive case alignment (Chen 2025, Aldridge to appear).

Tsou and Saisiyat, the focus languages of this study, belong to different primary subgroups within Formosan. Tsou represents a first-order split from Proto-Austronesian, while Saisiyat groups belong among the Northwest Formosan languages. Both languages retain robust voice systems with morphological marking distinguishing Actor Voice (AV) from non-Actor Voice (NAV, including Patient Voice/PV). Voice morphology interacts with case-marking and word order to determine which argument occupies the syntactically privileged "topic" or "subject" position. This intimate connection between verbal morphology and argument structure becomes significant when examining HOW interrogative roots that integrate into the verbal system.

1.3. The HOW paradigm in Tsou and Saisiyat

In Formosan languages, HOW words figure prominently among wh-words in that they occur consistently as verbs while other wh-words occur either as nominals (e.g., WHO, WHAT and WHERE words) or as adverbials (e.g., WHEN words) (C. Chang 1996, Huang et al. 1999). Tsou and Saisiyat are no exception in this regard. In Tsou, the interrogative HOW paradigm consists of *mainenu* (AV form, glossed as 'do.how.AV') and *yainenu* (PV form, glossed as 'do.how.PV'). These forms transparently consist of HOW roots combined with voice morphology: the prefix *m-* for AV and the root form lacking the AV voice morphology for PV. The existence of distinct voice-marked forms immediately signals that these elements have verbal properties, as voice morphology in Formosan languages canonically attaches to verbal predicates rather than adverbial or functional elements. In Saisiyat, the corresponding forms are *nak'ino'* (AV, 'do.how.AV') and *taka'ino'on* (PV, 'do.how-PV'). Here too, voice morphology (the suffix *-en*[1] for PV) distinguishes different HOW forms. Both languages permit null variants of voice marking in certain contexts, but the availability of overt voice morphology constitutes a critical diagnostic for verbal status. The presence of inflectional marking tied to grammatical function and argument realization sets these elements apart from canonical adverbs, which typically show no such morphological variation.

The semantic range of these HOW words encompasses four main categories with distinct pragmatic and syntactic properties. Manner HOWs question how an action is

[1] The suffix *-en* turns into *-on* in the suffix form due to its phonetic assimilation to its immediately preceding vowel of the root.

performed; Method HOWs question the means or instrument by which an event is accomplished; Measure HOWs question the degree or extent to which an event or state occurs; and Resultative HOWs question the resulting state after an event. This semantic diversity interacts with syntactic structure in revealing ways, as we demonstrate in the analyses below.

1.4. Research questions

Against this background, we address two central questions. First, what type of verbs are HOWs—do they behave as functional verbs (grammaticalized auxiliaries with minimal semantic content), lexical verbs (content-bearing predicates assigning theta-roles), or light verbs (intermediate between functional and lexical categories)? Second, what syntactic structures do HOWs project—do they form coordination structures (symmetric clausal conjunction), subordination (asymmetric embedding without selection), or complementation with control/raising (tight integration with argument-sharing)?

1.5. Organization

The remainder of this paper proceeds as follows. Section 2 presents our data sources and methodology. Section 3 applies five syntactic diagnostics to establish the lexical predicative status of HOWs. Section 4 analyzes the syntactic structures of HOW constructions, contrasting coordination and complementation patterns and examining the voice concord phenomenon in Tsou and Saisiyat. Section 5 explores theoretical implications for clause union typology, control theory, and Austronesian voice systems. Section 6 concludes and outlines directions for future research.

2. Data and methodology

2.1. Data sources

This study draws on multiple complementary data sources for both Tsou and Saisiyat. For Tsou, we conducted group interviews with three or four native speakers to obtain grammaticality judgments and elicit detailed linguistic insights regarding complex syntactic structures. We also consulted the E-Dictionary of Indigenous Languages and drew upon published resources including *Tsou Gospel* (2012), as well as two key monographs: Chang and Pan (2018) and Lin (2022). For Saisiyat, we conducted fieldwork sessions with two native speakers, supplemented by consultation of the E-Dictionary of Indigenous Languages, published narrative materials from Saisiyat Seasonal Festival Teaching Materials, and published resources by Yeh (2018b, 2022). These varied data sources provide authentic examples of the phenomena under investigation drawn from both natural discourse and carefully elicited contexts.

2.2. Methodology

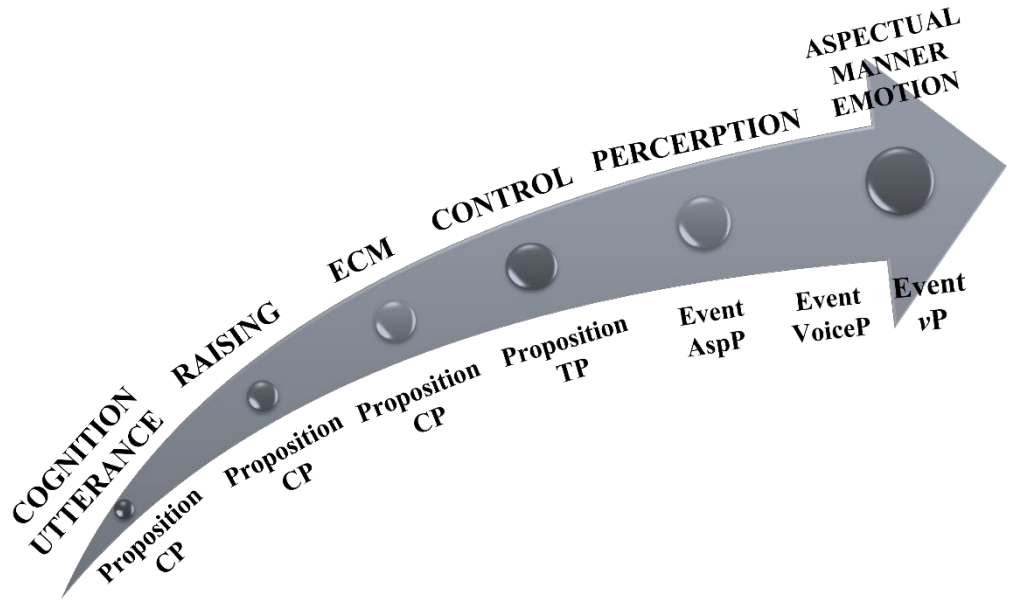
This study investigates two central research questions. First, what is the lexical status of HOW-predicates in Formosan languages—specifically, should these elements be classified as functional, lexical, or light verbs? Second, what syntactic configurations do HOW-constructions instantiate in these languages—do they pattern with control, raising, or represent some distinct structural type? Drawing on extensive evidence from both Tsou and Saisiyat, the analysis probes the fundamental nature of clause union in these systems and seeks to elucidate the formal mechanisms underlying the variation observed in patterns of embedding.

To address the first question regarding the lexical domain of HOW-predicates, our

methodology applies five core syntactic diagnostics from theoretical syntax. These diagnostics—primary predication eligibility, theta-role assignment, object topic licensing, clause embedding capability, and distribution as complements of control or causative verbs—systematically distinguish predicates from adjuncts and differentiate clausal embedding types. Specifically, the diagnostics examine whether a linguistic element can serve as the sole clause predicate, assign theta-roles to its arguments, license objects as topics through voice alternations, select clausal complements, and function as a complement to control or causative verbs.

The theoretical underpinnings of this research are grounded in the licensing theory recently articulated by the first author (Chang 2025), the Unified Theory of Embedding Licensing (*u*TEL). With reference to Givón's binding model (2001, 2009) and Wurmbrand's (2024) account of restructuring, *u*TEL posits that embedded clauses are dependent on their respective matrix clauses, requiring explicit licensing from above. This licensing proceeds along a principled hierarchy: deeper levels of integration correspond to greater structural reduction and higher semantic dependence, as illustrated in Figure 1 below.

Figure 1: Embedding Licensing Hierarchy (Chang 2025)



Underlying this licensing process are three semantic parameters, each capturing a distinct aspect of the matrix person's relation to the embedded clause:

(i) Whether the matrix person is actively or directly involved in carrying out the embedded event;
(ii) Whether the matrix person volitionally engages in the embedded event;
(iii) Whether the matrix person possesses solid knowledge of, or strong commitment to, the truth of the embedded proposition.

These structuring foregrounds the agentivity, volitionality, and epistemic stance of the matrix participant as central to the hierarchical licensing of embedded clauses in the *u*TEL framework.

3. Data and analysis: HOWs as lexical predicates

We now present five syntactic diagnostics establishing that HOWs in Tsou and Saisiyat function as lexical predicates rather than adverbs, functional elements, or light verbs. Each diagnostic provides independent evidence for verbal status; their convergence yields a robust conclusion about categorial assignment.

3.1. Diagnostic 1: Eligibility for primary predication

The most fundamental property distinguishing predicates from adjuncts is the ability to serve alone as the main predicate of a clause. Adverbs and adjuncts cannot fulfill this function—they necessarily modify an existing predicate. Furthermore, both Tsou and Saisiyat HOWs can stand as the sole predicate, taking a subject argument:

(1) *Mi-su* *m-ainenu* *maitan'e*? (Tsou)
NF.AV-2S.NOM AV[2]-do.how today
'How are you doing today?'

(2) *So'o* *nak'ino'* *'ila?* (Saisiyat)
2S.NOM do.how.AV COS
'How come about you? / What happened to you?'

In both examples, the HOW word serves as the main predicate, with the subject (you/he) as its sole argument. There is no additional verbal predicate being modified. This contrasts sharply with adverbial HOWs in languages like English, where how cannot appear without a content-bearing verb. The ungrammaticality of '*How did you?*' demonstrates that adverbial how requires a matrix predicate for licensing. The Formosan data establish that HOWs in these languages lack such requirements, indicating that they project their own predicative structure.

This primary predication capability immediately establishes that HOWs in these languages are categorially verbal rather than adverbial.

3.2. Diagnostic 2: Theta-role assignment

Lexical predicates assign theta-roles (semantic roles such as Agent, Patient, and Theme) to their arguments, whereas functional elements and adjuncts lack this capacity. HOWs in Tsou and Saisiyat demonstrate theta-role assignment through their ability to introduce external arguments in Actor Voice constructions and internal arguments in Patient Voice constructions.

(3) *Os-ko* *yainenu* *si* *ohaesa-su?* (Tsou)
NF.NAV-2S.GEN do.how.PV NOM brother-2S.POSS
'What did you do to your brother?'

(4) *Siya* *niSo'* *taka'ino'-on* *ila?* (Saisiyat)
3S.NOM 2S.GEN do.how-PV COS
'What did you do to him?'

[2] This paper follows the Leipzig Glossing Rules, with the following amendments: AV (Actor Voice), COS (Change of state), NAV (Non-Actor Voice), NF (Non-Future), PLN (Place name), PRT (Particle), PV (Patient Voice), RED (Reduplication).

In these examples, the HOW word takes voice morphology and licenses both an external argument (the Agent, marked with genitive case in NAV forms) and an internal argument (the Patient, marked nominative). The fact that HOWs assign an Agent role to their external argument and simultaneously obligatorily co-occur with a Patient/internal argument demonstrates that they are lexical predicates with agentive semantics, not merely manner modifiers that supervene on existing predicates.

This contrasts with functional verbs such as English be or light verbs like do (in English do damage), which do not assign substantive theta-roles but rather inherit their argument structure from their complements. HOW words in Tsou and Saisiyat independently assign their own theta-roles, showing the independence characteristic of lexical predicates.

3.3. Diagnostic 3: Capable of licensing object topics

Lexical predicates have the capacity to license objects as topics, while functional elements and adjuncts cannot introduce topicalized objects. HOWs in Tsou and Saisiyat demonstrate their status as lexical verbs through their ability to license object topics.

(5) *Os-'o* *payo'-a* *'o* *av'u,* *te-'o* *yainenu?* (Tsou)
NF.NAV-1S.GEN lost-PV NOM dog, FUT-1S.GEN do.how.PV
'As for my dog (which was lost), what should I do with it?'

(6) *Sizaeh* *ila* *paS'ala',* *ta'oeloeh* *taka'ino'-on* *ila?* (Saisiyat)
finish COS celebration head, do.how-PV COS
'As for the head (of the celebration), what should we do with it?'

In these examples, the object (the Theme argument) is advanced to topic position, and the HOW word obligatorily co-occurs with this topicalized constituent. The capacity of *yainenu* and *taka'ino'-on* to introduce and license object topics demonstrates that they are lexical verbs capable of binding objects as arguments. This contrasts with functional verbs or modifiers, which cannot independently establish topical relationships with objects. The licensing of object topics by HOW words shows their fundamental status as lexical predicates with robust argument-licensing capacity, not adjunct-like elements that merely modify existing predicates.

3.4. Diagnostic 4: Clause Embedding Capability

Lexical verbs can take clausal complements, selecting for specific clause types (finite versus non-finite, indicative versus subjunctive, etc.). HOWs in both languages demonstrate this capability by embedding clauses representing the events whose manner or method is questioned:

(7) *Te-ko* *m-ainenu* *ho* *maine'e?* (Tsou)
FUT-2S.GEN AV-do.how COMP go.home.AV
'How will you go home?'

(8) *'am* *nak'ino'* *rima'* *walo'?* (Saisiyat)
FUT do.how.AV go.AV PLN
'How can I get to Tungho?'

In Tsou, the complementizer ho marks the embedded clause *maine'e* 'go home'. In Saisiyat, by contrast, the complement *rima' walo'* 'go to Tungho' directly follows the HOW predicate without an overt complementizer. The embedded clauses denote events, and the HOW predicate questions the manner or means of those events. Crucially, as we demonstrate in Section 4.3, these embedded clauses have specific structural properties—they are tenseless and exhibit voice concord in Saisiyat—indicating that HOWs impose selection restrictions on their complements. These selectional properties are characteristic of lexical predicates.

3.5. Diagnostic 5: Distribution as complements of control or causative verbs

Lexical predicates, but not functional elements or adjuncts, can occur as complements in specific grammatical environments—such as under control verbs or causative verbs—where a full predicate is required. HOW words in Tsou and Saisiyat (e.g., *yainenu*, *taka'ino'-on*) demonstrate their lexical status by occupying complement positions that are otherwise restricted to verbs with argument-structuring capacity.

Control Verb Complement Examples

(9) *Te-mu* *akoev-a* *no* *ti'vo'on-a?* (Tsou)
FUT-2PL.GEN plan-PV COMP do.how-PV
'What would you plan to do?'

(10) *Nimon* *ka-tak'ino'-on* *ila?* (Saisiyat)
2P.GEN would.PV-do.how-PV COS
'What would you like to do?'

Causative Verb Complement Example

(11) *Te-ko* *poa* *m-ainen-u* *na*
FUT-2SG.GEN CAUS.PV AV-do.how NOM
te-ko *pei'i?* (Tsou)
FUT-2SG.GEN cook.PV
'How would you cook it?'

In each case, the HOW word appears as a complement to a higher lexical verb: 'plan' or 'cause'. Such environments only license full verbs with their own thematic structure, not functional or adjunct elements. The ability of *yainenu* and *taka'ino'-on* to occur in these positions demonstrates that they possess the properties of lexical predicates, providing independent argument structure and semantic content.

This distribution is a hallmark of lexical verb status, further distinguishing Tsou and Saisiyat HOW words from functional items that cannot appear in such complement positions.

3.6. Summary: HOWs as lexical verbs

The evidence from Tsou and Saisiyat shows that HOW words in both languages are full lexical predicates, not adverbial modifiers, or functional verbs. They satisfy five core diagnostics of verbal status: eligibility for primary predication, ability to assign theta-roles, capacity to license object topics, selection of clausal complements, and distribution

as complements of control and causative verbs. These properties confirm that HOWs in these languages exhibit genuine verbal syntax and semantics.

HOW words stand alone as main clause predicates, assign agent and patient roles, introduce topicalized objects, embed clauses, and occupy syntactic slots reserved for verbs. Their verbal morphology, argument structure, and syntactic flexibility sharply distinguish them from typical adverbial HOW markers found in languages like English. The convergence of these diagnostics establishes that Tsou and Saisiyat HOWs have all the characteristics expected of lexical verbs, underlining their role as true verbal predicates that structure clauses and license arguments independently.

4. Syntactic structures of HOW constructions

Having established that HOWs in Tsou and Saisiyat function as lexical predicates rather than adverbs or functional elements, we now turn to the second research question: what syntactic structures do these predicative HOWs project? The answer reveals a systematic split based on semantic type and cross-linguistic variation between the two languages.

4.1. The interrogative split: Type I vs. Type II

HOW constructions in both Tsou and Saisiyat exhibit a fundamental structural bifurcation that correlates with semantic interpretation. Type I constructions involve HOWs functioning as primary predicates of a subject, typically with Measure or Resultative interpretations. Type II constructions involve HOWs co-occurring with another lexical verb, representing either coordination or complementation structures, typically with Manner or Method interpretations. Since Type I constructions straightforwardly instantiate simple predication (as demonstrated in Section 3.1), the present analysis concentrates on the more complex Type II patterns, where the structural relationship between the HOW predicate and the associated event predicate becomes theoretically significant.

Type I constructions briefly merit illustration before we proceed to the focal Type II analysis. In both languages, Measure and Resultative HOWs can serve as the sole predicate taking a subject argument:

Tsou Measure HOW (Type I):

(12) *Mi-su=cu* *m-ainenu* *na* *hia* *noana'o* *ho*
NF.AV-2SG.NOM=COS AV-DO.HOW NOM NMLZ STAY.LONG.AV CONJ
axsvxsvxtx *buacou?*
learn.AV speak.TSOU
'How long have you learned speaking Tsou?'

Tsou Resultative HOW (Type I):

(13) *Mo* *m-ainenu* *na* *hia-su* *tosvxtx?*
NF.AV AV-DO.HOW NOM NMLZ-2S.POSS TEST
'How are your tests going?'

Saisiyat Measure HOW (Type I):

(14) *Moyo* *makak-Sekla',* *koza'* *kin-honaehnge:* *ila?*
2PL.NOM RECIP-recognize how.much NMLZ-long COS
'How long have you known each other?'

Saisiyat Resultative HOW (Type I):

(15) *Nisiya* *ka* *kin-'i'iya'eh* *nak'ino'* *'ihan?*
3S.GEN LNK NMLZ-live do.how.AV Q
'How is his life going?'

These Type I examples establish that HOWs can function independently as predicates. The remainder of this section focuses exclusively on **Type II** constructions, where the interaction between HOW predicates and event predicates reveal crucial structural variation.

To determine whether Type II constructions systematically instantiate coordination or complementation, we now apply three particularly robust diagnostics derived from the clause union typology literature.

4.2. Analytical framework: Distinguishing coordination from complementation

To determine whether Type II constructions instantiate coordination, subordination, or complementation, we apply a battery of established syntactic diagnostics derived from the typological and theoretical literature on clause union (Foley and Van Valin 1984, Dahl 1985, Lehmann 1988, Givón 2001, 2009, Cristofaro 2003, Noonan 2007, Haspelmath 2007, Wurmbrand 2001, 2024, Chang 2017, Mayr and Schmitt 2017). The diagnostics include:

(i) Independent tense marking: Coordination permits independent tense specifications in each conjunct, while complementation typically requires tense dependence.
(ii) Global negation scope: In coordination, negation of one conjunct need not scope over the other; in complementation, matrix negation typically scopes over the embedded clause.
(iii) Hierarchical integration: Complementation structures exhibit tighter syntactic integration than coordination, reflected in restructuring phenomena.
(iv) Selection by matrix verb: Complementation involves semantic selection by the matrix predicate; coordination does not.
(v) Assertion/Presupposition status: Coordinated clauses are independently asserted; complements may be presupposed.
(vi) Island effects and binding asymmetries: Coordination creates opaque domains for extraction and binding; complementation under restructuring permits transparency.
(vii) Merging position: Complementation involves a sister relation to the selecting verb; coordination typically involves a higher adjunction site.

We concentrate on three particularly robust diagnostics that yield clear empirical contrasts in our data: (i) tense independence, (ii) voice concord, and (iii) control of the embedded external argument. These three properties converge to distinguish coordination from complementation structures in Tsou and Saisiyat Type II constructions.

4.3. Tsou Type II: Coordination and complementation

Tsou exhibits structural variation within Type II constructions depending on whether the HOW predicate shows intransitive (Actor Voice) or transitive (Patient Voice) morphology. Intransitive Manner HOWs pattern with coordination, while transitive Method HOWs exhibit complementation with control properties.

4.3.1. Manner HOWs as coordination

When Tsou HOWs appear in Actor Voice (AV) forms to express manner interrogatives, they co-occur with the coordination marker *ho*, linking two clauses of equal syntactic status:

(16) *La-ko* *m-ainenu* *ho* *mi-su* *miusnu*
HAB-2SG.NOM AV-do.how CONJ NF.AV-2SG.NOM go.towards.AV
ta *'o'oko* *ho* *aomotx'x?*
OBL children CONJ talk.AV
'How do you talk to children?'

The morpheme *ho* in Tsou functions as a conjunction marker introducing coordinate clauses. Several properties support analyzing this as coordination rather than complementation. First, each clause can independently bear tense/aspect marking, though often the second clause inherits tense from the first for pragmatic economy. Second, the two predicates exhibit **voice non-concord**: the HOW predicate and the event predicate may take different voice morphology without inducing ungrammaticality, indicating that they occupy separate voice domains. Third, the construction permits two separate assertions—'you do how' and 'you talk to children'—characteristic of coordinate structures. The *ho*-linked structure represents a symmetric relation between two predicates sharing a subject argument, consistent with coordination.

4.3.2. Method HOWs as complementation

In contrast, when Tsou HOWs appear in Patient Voice (PV) forms to express method or instrumental interrogatives, they exhibit complementation properties:

(17) a. *Te-ko* *yainenu* *ho* *pei'i* *'e* *yoskx?*
FUT-2SG.GEN do.how.PV COMP cook.PV NOM fish
'How will you cook the fish?'

b. *Te-ko* *yainenu* *ho* *peyaehuf-a*
FUT-2SG.GEN do.how.PV COMP peel.off-PV
ho *mo* *uk'a* *f'uhu?*
SUB NF.AV not.exist knife
'How can you peel off the palm tree without a knife?'

Although the morpheme *ho* appears in these examples as well, three critical diagnostics reveal that the relationship between the HOW predicate and the event predicate differs fundamentally from coordination.

Evidence 1: Tenseless complement

The embedded clause cannot independently bear tense marking. The future tense marker *te-* appears once in the matrix clause and takes scope over the entire construction, but cannot be repeated with the embedded predicate:

(18) a. *Te-ko* *yainenu* *ho* *peyaehuf-a*
FUT-2SG.GEN do.how.PV COMP peel.off-PV
ho *mo* *uk'a* *f'uhu?*
SUB NF.AV Not.exist knife
'How can you peel off the palm tree without a knife?'

b. **Te-ko* *yainenu* *ho* *te* *peyaehuf-a* *ho* *mo*
FUT-2SG.GEN do.how.PV COMP FUT peel.off-PV SUB NF.AV
uk'a *f'uhu?*
not.exist knife

The ungrammaticality of (18b) demonstrates that the embedded clause is structurally smaller than a full TP—it lacks an independent tense projection. This restriction is characteristic of complementation, where embedded clauses are often reduced to VoiceP or *v*P projections, but incompatible with coordination, which permits each conjunct to independently host tense.

Evidence 2: Obligatory voice concord

The embedded predicate must match the voice morphology of the matrix HOW predicate. When the HOW predicate takes Patient Voice, the embedded predicate must also take Patient Voice:

(19) a. *Te-ko* *yainenu* *ho* *peyaehuf-a*
FUT-2SG.GEN do.how.PV COMP peel.off-PV
ho *mo* *uk'a* *f'uhu?*
SUB NF.AV not.exist knife
'How can you peel off the palm tree without a knife?'

b. **Te-ko* *yainenu* *ho* *peyaehuf*
FUT-2SG.GEN do.how.PV COMP peel.off.AV
ho *mo* *uk'a* *f'uhu?*
SUB NF.AV not.exist knife

In (19a), both *yainenu* and *peyaehuf-a* take PV morphology, yielding grammaticality. In (19b), the mismatch between PV *yainenu* and AV *peyaehufu* results in ungrammaticality. This obligatory voice agreement constitutes hallmark evidence for restructuring—the matrix and embedded predicates form a monoclausal domain for voice feature valuation (Paul et al. 2021, Bryant et al. 2023). Voice concord emerges when the embedded VoiceP lacks an independent voice feature specification and must inherit it from the matrix

predicate through an Agree relation. This phenomenon is diagnostic of complementation under restructuring, distinguishing it from coordination where each clause independently determines its own voice morphology.

Evidence 3: Obligatory control of external argument

The matrix external argument introduced by the method HOW controls the reference of the embedded external argument, which appears as a null pronoun (PRO):

(20) *Te-ko*$_i$ *yainenu ho* PRO$_i$ *peyaehuf-a*
FUT-2SG.GEN do.how.PV COMP peel.off-PV
ho mo uk'a f 'uhu?
SUB NF.AV not.exist knife
'How can you (as the Agent) peel off the palm tree without a knife?'

The genitive-marked external argument of the matrix HOW predicate (*-ko* 'you.GEN') obligatorily controls the interpretation of the embedded Agent. This control configuration establishes an asymmetric dependency between matrix and embedded clauses—the embedded clause cannot introduce an independent external argument but must inherit its reference from the matrix subject. Obligatory control is a defining property of complementation structures, contrasting with coordination where each conjunct independently introduces and licenses its own arguments.

The convergence of these three diagnostics—tenselessness, voice concord, and obligatory control—establishes that transitive Method HOWs in Tsou select for tenseless VoiceP complements in an obligatory control configuration. Despite the surface presence of ho, the syntactic structure differs fundamentally from the coordination pattern observed with intransitive Manner HOWs. We analyze ho in these contexts as having grammaticalized from a coordination marker into a complementizer introducing restructuring complements—a diachronic development consistent with broader pathways of clause union evolution (Givón 2001, 2009, Tsai 2007).

Unlike Tsou, which preserves structural variation between Manner and Method constructions, Saisiyat exhibits uniform complementation structures for all Type II constructions, regardless of whether the HOW predicate expresses Manner or Method interrogatives.

4.4. Saisiyat Type II: Uniform complementation

Unlike Tsou, Saisiyat exhibits uniform complementation structures for all Type II constructions, regardless of whether the HOW predicate expresses Manner or Method interrogatives. Both subtypes demonstrate the three diagnostic properties of complementation with obligatory control.

4.4.1. Manner HOWs as complementation

Saisiyat Manner HOWs directly embed event predicates without an overt coordination marker or complementizer:

(21) *S'insangan* *nak'ino'* *mayaka:i'?*
doctor do.how.AV speak.AV
'How does the doctor speak?'

Although superficially simpler than the Tsou construction, this pattern exhibits the full suite of complementation diagnostics, as demonstrated below.

4.4.2. Method HOWs as complementation

Method HOWs in Saisiyat similarly embed event predicates directly:

(22) a. *'am* *nak'ino'* *rima'* *walo'?*
FUT do.how.AV go.AV PLN
'How can we go to Tungho?'
b. *Hini* *'aelaw* *niSo'* *ka-taka'ino'-on* *talek-en?*
this fish 2S.GEN would.PV-do.how-PV cook-PV
'This fish, how would you like to cook?'

The structural properties of both Manner and Method constructions converge on complementation with control, as evidenced by the following diagnostics.

Evidence 1: Tenseless complement

The embedded clause cannot independently bear tense marking. The future/irrealis marker *'am* must appear in the matrix clause only:

(23) a. *Hini* *'aelaw* *niSo'* *ka-taka'ino'-on* *talek-en?*
this fish 2S.GEN would.PV-do.how-PV cook-PV
'How will you cook the fish?'
b. **Hini* *'aelaw* *niSo'* *ka-taka'ino'-on* *'am* *talek-en?*
this fish 2S.GEN would.PV-do.how-PV FUT cook-PV

The ungrammaticality of (23b) demonstrates that the embedded predicate *talek-en* 'cook-PV' cannot host its own tense marker. This tenselessness indicates that the embedded clause is reduced to a VoiceP or *v*P projection lacking TP, consistent with restructuring complementation.

Evidence 2: Obligatory voice concord

The embedded predicate must match the voice morphology of the matrix HOW predicate:

(24) a. *Hini* *'aelaw* *niSo'* *ka-taka'ino'-on* *talek-en?*
this fish 2S.GEN would.PV-do.how-PV cook-PV
'How will you cook the fish?'
b. **Hini* *'aelaw* *niSo'* *ka-taka'ino'-on* *t<om>alek?*
this fish 2S.GEN would.PV-do.how-PV cook<AV>

When the matrix HOW predicate takes Patient Voice (*taka'ino'-on*), the embedded predicate must also take Patient Voice (*talek-en*). Voice mismatch, as in (24b) where AV *t<om>alek* appears under PV *taka'ino'-on*, yields ungrammaticality. This obligatory voice agreement demonstrates that the matrix and embedded predicates form a single domain for voice feature valuation, diagnostic of restructuring. The voice concord pattern in Saisiyat parallels the Tsou pattern documented above, indicating that both languages employ voice agreement as a morphological reflex of syntactic restructuring under complementation (Paul et al. 2021, Bryant et al. 2023,Wurmbrand and Shimamura 2017).

Evidence 3: Obligatory control of external argument

The matrix external argument controls the reference of the embedded external argument:

(25) *Hini* *'aelaw* *niSo'$_i$* *ka-taka'ino'-on* *PRO$_i$* *talek-en?*
this fish 2S.GEN would.PV-do.how-PV cook-PV
'This fish, how will you (as the Agent) cook (it)?'

The genitive-marked Agent *niSo'* 'you.GEN' in the matrix clause obligatorily controls the interpretation of the embedded Agent position. The embedded clause cannot introduce an independent external argument, confirming obligatory control. This argument-sharing configuration is characteristic of complementation, distinguishing it from coordination where each conjunct independently licenses its own arguments.

The convergence of tenselessness, voice concord, and obligatory control establishes that both Manner and Method HOWs in Saisiyat uniformly project complementation structures with restructuring. Unlike Tsou, which exhibits variation between coordination (Manner) and complementation (Method), Saisiyat has generalized the complementation strategy across all Type II constructions.

4.5. Comparative summary: Structural divergence between Tsou and Saisiyat

The analysis reveals systematic cross-linguistic variation in the structural encoding of Type II HOW constructions. These structural properties can be systematized as follows, revealing the systematic divergence:

Table 1: Comparative Summary of Tsou and Saisiyat Type II HOW Constructions

Property	**Tsou**	**Saisiyat**
Manner HOWs	Coordination (with *ho*)	Complementation (no overt linker)
Method HOWs	Complementation (*ho* as complementizer)	Complementation (no overt linker)
Voice Concord	Required in complementation; absent in coordination	Required in all Type II constructions

Tense Independence	Permitted in coordination; prohibited in complementation	Prohibited in all Type II constructions
Control	Obligatory in complementation; absent in coordination	Obligatory in all Type II constructions
Structural Integration	Variable (low in coordination, high in complementation)	Uniformly high (complementation with restructuring)

As this comparison reveals, Tsou preserves a conservative distinction between Manner coordination and Method complementation. Saisiyat, by contrast, has generalized complementation. This structural divergence suggests a diachronic grammaticalization pathway: coordination → complementation.

Tsou preserves a structural distinction between Manner constructions, which employ coordination, and Method constructions, which employ complementation. The morpheme ho appears in both contexts but functions differently: as a coordination marker in Manner contexts and as a complementizer in Method contexts. Saisiyat, by contrast, has generalized complementation across both Manner and Method constructions, exhibiting uniform voice concord, tenselessness, and obligatory control.

This structural divergence suggests a diachronic grammaticalization pathway: **coordination → complementation**. We hypothesize that Proto-Formosan employed coordination for Type II HOW constructions, a pattern conservatively preserved in Tsou Manner HOWs. Saisiyat subsequently reanalyzed the coordinate structure as complementation, triggering restructuring and the emergence of voice concord as a morphological consequence of tight syntactic integration. This diachronic trajectory aligns with cross-linguistic tendencies whereby frequently co-occurring clausal sequences undergo grammaticalization from loose coordination to tight complementation (Lehmann 1988; Givón 2001, 2009, Haspelmath 2007, Cristofaro 2003, Tsai 2007). The presence of an overt linker (*ho*) in Tsou, which can be analyzed as undergoing functional reanalysis from coordinating conjunction to subordinating complementizer in Method contexts, supports this grammaticalization hypothesis.

5. Theoretical implications

This study has established that HOW words in Tsou and Saisiyat function as lexical predicates rather than adverbs, and that they project distinct syntactic structures conditioned by semantic type and mediated by cross-linguistic variation. These findings carry significant implications across multiple theoretical domains, contributing to our understanding of interrogative typology, voice systems, control theory, and clause union hierarchies.

5.1. HOWs as two-place predicates: Agent and event

A central finding of this study is that HOW predicates in Tsou and Saisiyat function as **two-place predicates** taking an agent (external argument) and an event as their two arguments. This analysis aligns with Neo-Davidsonian event semantics, where verbs are analyzed as one-place predicates of events, with thematic relations connecting event participants to events (Parsons 1990). As Parsons demonstrates, on the Neo-Davidsonian

view, verbs denote event predicates, and participants are related to events through thematic roles such as Agent, Patient, and Theme.

Building on this framework, Tsai and Chang (2003) argue that manner adverbials in certain languages can themselves function as one-place predicates of events—requiring an event as their argument. In the present analysis, we extend this insight: HOW predicates in Tsou and Saisiyat operate as two-place predicates that introduce both an external argument (the agent) and select an event complement. Specifically, HOW predicates assign an Agent theta-role to their external argument (as demonstrated by voice morphology alternations in Section 3.2) and simultaneously take an event predicate as their complement (as demonstrated by clause embedding in Section 3.4).

This two-place predicate structure accounts for the full range of syntactic behaviors documented in Sections 3 and 4. In Type II constructions (Manner/Method HOWs), the HOW predicate assigns an Agent role to its external argument and embeds an event-denoting clause as its complement. The embedded event predicate describes the action being questioned (e.g., 'cook', 'go home'), while the HOW predicate questions the manner or method by which that event is executed. Crucially, the matrix Agent obligatorily controls the embedded Agent position (PRO), establishing an argument-sharing configuration characteristic of obligatory control.

The ability of HOW predicates to introduce external arguments distinguishes them categorially from adverbial modifiers, which lack argument-introducing capacity. This argument-introducing function parallels the role of Voice in introducing external arguments via functional heads (Kratzer 1996), confirming that HOWs are full lexical verbs with their own argument structure rather than functional or light verbs that merely inherit argument structure from their complements.

Method HOWs and the structural licensing of patient arguments

A critical dimension of the two-place predicate analysis emerges when we examine **Method HOWs** in conjunction with **Patient Voice (PV) morphology**. As documented in Diagnostic 2 (Section 3.2), Method HOWs taking Patient Voice obligatorily co-occur with patient/object arguments, repeated in (26-27):

(26) *Os-ko* *yainenu* *si* *ohaesa-su?* (Tsou)
NF.NAV-2S.GEN do.how.PV NOM brother-2S.POSS
'What did you do to your brother?'

(27) *Siya* *niSo'* *taka'ino'-on* *ila?* (Saisiyat)
3S.NOM 2S.GEN do.how-PV COS
'What did you do to him?'

In these examples, the HOW predicate not only introduces an Agent (the external argument marked with genitive case) but also obligatorily licenses a Patient argument (marked with nominative case). Superficially, this might suggest that HOWs are **three-place predicates** taking an Agent, a Patient, and an Event as three distinct lexical arguments. However, a closer examination of the data reveals that the patient/object argument is **structurally generated rather than lexically specified**.

The crucial evidence comes from the interaction between Method HOWs and Patient Voice morphology. When a Method HOW takes Patient Voice, it necessarily embeds a transitive event predicate that independently introduces its own internal argument.

Consider again example (17a), repeated in (28) from Section 4.3.2:

(28) *Te-ko* *yainenu* *ho* *pei'i* *'e* *yoskx?*
FUT-2SG.GEN do.how.PV COMP cook.PV NOM fish
'How will you cook the fish?'

In this construction, the patient argument *'e yoskx* 'the fish' is not a lexical argument of the HOW predicate *yainenu* itself. Rather, it is the internal argument of the embedded predicate *pei'i* 'cook'. The HOW predicate does not independently select for this patient argument; instead, it selects an **event complement**, and that event complement happens to be a transitive predicate with its own internal argument structure.

The patient/object emerges through **structural composition** rather than lexical specification: the Method HOW in Patient Voice embeds a Patient Voice complement, and through voice concord and restructuring (as documented in Sections 4.3.2 and 4.4.2), the two predicates form a single extended voice domain. Within this unified domain, the embedded predicate's internal argument is licensed and becomes the topic/subject of the entire construction. Critically, this patient argument is introduced by the **embedded event predicate**, not directly by the HOW predicate.

This analysis preserves the **two-place predicate** characterization of HOWs while accounting for the surface appearance of patient arguments. HOW predicates take two arguments at the lexical level: (i) an external argument (Agent) and (ii) an event complement. When that event complement is itself transitive (i.e., introduces its own internal argument), and when restructuring creates a unified voice domain through complementation, the result is a surface structure in which the HOW predicate appears to co-occur with both an Agent and a Patient. However, the Patient is not a lexical argument of the HOW predicate itself but rather **a structural consequence of embedding a transitive event predicate under Patient Voice**.

This distinction between lexical and structural argument introduction is theoretically significant. **Lexical arguments** are directly selected and theta-marked by a predicate's argument structure; **structural arguments** emerge through syntactic operations such as complementation, restructuring, and voice agreement. The patient/object in Method HOW constructions falls into the latter category: it is licensed by the embedded event predicate and surfaces as the topic/subject due to Patient Voice marking on both the matrix HOW and the embedded predicate.

This analysis has direct implications for rejecting a **three-predicate analysis**. A three-predicate approach would treat HOWs as predicates that lexically select three arguments: Agent, Patient, and Event. Such an analysis would incorrectly predict that HOW predicates can independently assign theta-roles to patient arguments even in the absence of an embedded transitive predicate. However, the data demonstrate that patient arguments only appear when the embedded complement is transitive and when restructuring integrates the two predicates into a unified voice domain. This dependency confirms that the patient is structurally derived, not lexically specified by the HOW predicate.

In sum, Method HOWs in conjunction with Patient Voice structurally introduce patient/object arguments through complementation and voice concord. The patient/object is generated by the syntax—specifically, through embedding a transitive predicate and unifying voice domains via restructuring—rather than being lexically selected by the HOW predicate. This analysis maintains the two-place predicate characterization while

accounting for the full range of argument structures observed in the data.

5.2. Voice as a multifunctional system: Reconciling agreement and transitivity perspectives

The voice concord phenomenon documented in Tsou and Saisiyat contributes directly to ongoing theoretical debates about the nature of voice morphology in Austronesian languages. As noted in Section 1.2, scholars disagree on whether voice in Philippine-type languages represents agreement/nominative-accusative case alignment or transitivity/ergative-absolutive case alignment (Chen 2025, Aldridge to appear). Rather than viewing these perspectives as mutually exclusive, our findings reveal that voice morphology in these languages is **multifunctional**, simultaneously encoding both agreement relations and transitivity distinctions.

Voice as agreement: The nominative-accusative perspective

From the agreement/nominative-accusative perspective, voice functions as a syntactic feature sensitive to φ-features and structural configurations. The obligatory agreement between matrix and embedded voice morphology (documented in Sections 4.3.2 and 4.4.2) demonstrates that Voice participates in standard syntactic mechanisms—Agree and feature valuation—that govern agreement systems cross-linguistically (Carstens and Diercks 2013). Under this view, Actor Voice marks nominative case on the external argument (the Agent), while Patient Voice marks nominative case on the internal argument (the Patient/Theme), yielding a nominative-accusative alignment pattern.

Voice concord arises through feature-sharing mechanisms: when the embedded VoiceP lacks independent voice feature specification (due to structural reduction to VoiceP without independent TP), it must inherit voice features from the matrix predicate through upward or downward Agree (Wurmbrand and Shimamura 2017). This feature dependency creates a unified voice domain across matrix and embedded clauses, where both predicates receive their voice specification from a single Agree operation. This analysis treats voice morphology as an agreement phenomenon, where the voice marker reflects syntactic agreement between a Voice head and the external/internal argument it licenses.

Voice as transitivity: The ergative-absolutive perspective

From the transitivity/ergative-absolutive perspective, voice morphology tracks transitivity properties rather than case alignment per se. Actor Voice marks intransitive predicates (one-place predicates of events taking only an event argument), while non-Actor Voice marks transitive predicates (two-place predicates taking both agent and patient arguments). Under this analysis, the nominative-marked argument in Actor Voice constructions represents the absolutive (S/P) argument (the single argument of intransitive verbs and the patient of transitive verbs), while the genitive-marked external argument in Patient Voice constructions represents the ergative (A) argument (the agent of transitive verbs).

Voice concord in restructuring contexts then reflects merger of two predicates into a single transitivity domain: the matrix predicate's transitivity specification extends to the embedded predicate because they form an integrated unit for purposes of event selection and argument licensing. When a matrix HOW predicate (which is two-place, taking an agent and an event) embeds an event-denoting clause, both predicates participate in a single extended transitivity system. The fact that the matrix predicate is necessarily in

Patient Voice (non-Actor Voice) when the embedded predicate is in Patient Voice indicates that transitivity is computed over the merged predicate structure, not independently for each predicate. This analysis treats voice morphology as a transitivity phenomenon, where the voice marker reflects the predicate's argument structure and valency properties.

Multifunctionality: Voice encodes both agreement and transitivity

The critical insight is that these two perspectives are not contradictory but complementary: voice in Formosan languages is **multifunctional**, simultaneously encoding agreement relations and transitivity distinctions. This multifunctionality explains why voice concord serves as a diagnostic for both structural dependence (the agreement view) and semantic/event-structural integration (the transitivity view).

Consider the Type II constructions in Saisiyat (Manner/Method HOWs), where obligatory voice concord is observed. From the agreement perspective, voice concord reflects feature-sharing via Agree: both the matrix and embedded Voice heads value their voice features from a shared syntactic source due to structural reduction. From the transitivity perspective, voice concord reflects event integration: the matrix HOW predicate (two-place, selecting an event) and the embedded predicate form a single extended event structure where transitivity is computed over the entire merged domain.

Crucially, both interpretations apply to the same morphological facts. The voice marker is simultaneously (i) an agreement morpheme reflecting the syntactic configuration (external/internal argument licensing and feature valuation), and (ii) a transitivity marker reflecting the predicate's argument structure (one-place vs. two-place predicate type). This dual encoding is possible because agreement mechanisms and argument structure properties are informationally linked: feature agreement on Voice typically targets the external or internal argument, and argument structure directly determines which arguments are available for agreement.

The analysis of patient/object arguments as structurally generated (Section 5.1.1) directly supports this multifunctional characterization. When Method HOWs take Patient Voice and embed transitive complements, the resulting patient argument is licensed through the interaction of two systems: (a) the agreement system, which requires voice concord and promotes the internal argument to topic/subject position, and (b) the transitivity system, which integrates the matrix and embedded predicates into a unified event structure. The patient/object is not lexically selected by the HOW predicate but emerges as a structural consequence of how voice morphology operates within restructuring configurations.

The multifunctional status of voice morphology explains why the data support both analytical frameworks. Type I constructions (Measure/Resultative HOWs) employ simple subject-predication structures with uniformly Actor Voice marking, consistent with the agreement view (the single argument receives nominative marking and controls agreement) and the transitivity view (one-place predicates uniformly select Actor Voice). Type II constructions (Manner/Method HOWs) employ two-place predicates with transitivity-driven voice selection, where voice concord simultaneously encodes (a) feature-sharing dependencies reflecting syntactic restructuring, and (b) integrated event structure reflecting semantic dependence.

The cross-linguistic variation between Tsou and Saisiyat further illuminates this multifunctionality. In Tsou, Manner HOWs preserve coordination structures without voice concord, consistent with both perspectives: syntactically, the clauses remain

independent (no feature-sharing requirements, hence no voice concord); semantically, the two predicates remain functionally independent (two separate events, hence no transitivity integration). In Saisiyat, the reanalysis of coordination to complementation entailed structural reduction and event integration, making voice concord obligatory as a reflex of both deeper syntactic binding and unified transitivity specifications.

By treating voice as multifunctional—encoding both agreement features and transitivity properties—we arrive at a unified analysis that explains why voice phenomena serve as diagnostics for restructuring in Austronesian, why voice concord correlates with obligatory control, and why the same voice system appears to support both nominative-accusative and ergative-absolutive analyses. Voice morphology in Tsou and Saisiyat is not simply marking case or simply tracking transitivity; rather, it is a multidimensional grammatical phenomenon encoding structural configurations, argument structure properties, and event semantic integration simultaneously. This multifunctionality reflects the richness and complexity of voice-prominent languages, where a single morphological system simultaneously encodes multiple levels of linguistic organization.

5.3. Control theory and restructuring

The obligatory control and voice concord documented in Tsou Method HOWs and all Saisiyat Type II constructions provide cross-linguistic evidence for the relationship between control and restructuring in Austronesian languages. Following recent work by Paul et al. (2021) on "crossed control" and Bryant et al. (2023) on voice restructuring semantics, we interpret voice concord as a morphological reflex of syntactic restructuring: the matrix and embedded predicates form a single extended verbal domain within which voice features are uniformly valued.

Our findings demonstrate that voice agreement serves as a diagnostic for obligatory control in Austronesian, parallel to how case agreement and tense dependency function in Indo-European control structures (Landau 2004, 2024). The Voice head in these languages plays a role analogous to the T(ense) head in canonical control configurations, creating syntactic dependency that forces argument-sharing between matrix and embedded predicates. Specifically, when the embedded clause is structurally reduced to VoiceP (lacking TP), it cannot independently determine its own voice morphology and must inherit voice features from the matrix predicate. This feature dependency creates an obligatory control configuration: the matrix external argument controls the embedded external argument position (PRO), and both predicates share the same voice specification. The structural licensing of patient arguments in Method HOW constructions (discussed in Section 5.1.1) further illustrates the mechanics of restructuring. When a Method HOW in Patient Voice embeds a transitive complement, restructuring creates a unified voice domain in which the embedded predicate's internal argument is promoted to topic/subject position. This promotion is not a property of the HOW predicate's lexical specification but rather a consequence of voice concord under restructuring: the Patient Voice specification on the matrix predicate percolates down to the embedded predicate, and the embedded predicate's internal argument receives nominative case and becomes the syntactic pivot of the construction. This process confirms that restructuring operates at the level of syntactic structure rather than lexical argument structure.

The three converging diagnostics—tenselessness, voice concord, and obligatory control—establish that HOW complementation in these languages instantiates restructuring, a syntactic configuration characterized by tight clausal integration and

reduced structural size of embedded complements (Wurmbrand 2001, 2024). The absence of independent tense projection (TP) in the embedded clause forces the embedded predicate to depend on the matrix predicate for temporal interpretation. The absence of independent voice specification forces voice feature-sharing under Agree. The absence of independent external argument licensing forces obligatory control. These three dependencies converge to create a monoclausal domain for purposes of voice agreement, tense interpretation, and argument licensing.

This finding contributes to the cross-linguistic typology of control by establishing voice concord as a language-specific diagnostic for restructuring in voice-prominent languages. While Indo-European languages diagnose restructuring through phenomena such as clitic climbing, long-distance passivization, and auxiliary selection (Wurmbrand 2001), Austronesian languages diagnose restructuring through voice agreement. The underlying structural mechanism—merger of matrix and embedded predicates into a single functional domain—remains constant across language families, but the morphological reflex varies according to the language-specific properties of verbal inflection.

5.4. Clause union typology and grammaticalization pathways

The structural contrast between Tsou and Saisiyat illuminates cross-linguistic pathways of clausal integration along established clause union hierarchies (Lehmann 1988, Givón 2001, 2009, Cristofaro 2003, Haspelmath 2007). Our findings position Tsou Manner HOWs at the coordination end of the hierarchy (two relatively independent clauses linked by *ho*) and Saisiyat Manner/Method HOWs at the complementation/restructuring end (tightly integrated monoclausal domain with voice concord and obligatory control).

This structural divergence suggests a diachronic grammaticalization pathway from **coordination to complementation**, wherein Proto-Formosan coordination patterns were preserved in Tsou but reanalyzed as complementation in Saisiyat. The mechanics of this reanalysis likely involved several stages: (i) phonetic reduction or loss of the coordination marker, (ii) reinterpretation of frequently co-occurring clausal sequences as matrix-complement structures rather than symmetric coordination, (iii) structural reduction of the embedded clause from a full TP to a VoiceP , and (iv) emergence of voice concord as a consequence of tight syntactic integration and feature-sharing under restructuring.

This proposed pathway aligns with broader cross-linguistic tendencies whereby loose clause-combining strategies evolve into tighter ones as conventionalization proceeds (Givón 2009, Haspelmath 2007, Cristofaro 2003). The presence of an overt linker (ho) in Tsou, which can be analyzed as undergoing functional reanalysis from coordinating conjunction to subordinating complementizer in Method contexts, provides evidence for the intermediate stages of this grammaticalization process. Tsou thus preserves a conservative distinction between Manner coordination and Method complementation, while Saisiyat represents an innovative system that has completed the grammaticalization pathway, generalizing complementation across all Type II contexts.

The structural licensing of patient arguments provides additional insight into this grammaticalization pathway. In the coordination stage (Tsou Manner HOWs), each predicate independently licenses its own arguments, and there is no unified voice domain. As the construction grammaticalizes into complementation (Tsou Method HOWs and Saisiyat Type II), restructuring creates a single voice domain, enabling the embedded predicate's internal argument to be structurally promoted to topic/subject position under Patient Voice. This structural integration is a hallmark of advanced grammaticalization,

where formerly independent clauses merge into a tightly integrated predicate complex.

5.5. Implications for the unified theory of embedding licensing

The structural patterns documented here provide empirical support for the Unified Theory of Embedding Licensing (*u*TEL) proposed by Chang (2025), which posits that embedded clauses are licensed along a principled hierarchy reflecting degrees of structural reduction and semantic dependence. According to *u*TEL, deeper levels of embedding integration correspond to greater structural reduction and tighter semantic bonding, mediated by three parameters: (i) whether the matrix Agent is directly involved in executing the embedded event, (ii) whether the matrix Agent volitionally engages in the embedded event, and (iii) whether the matrix Agent possesses epistemic commitment to the embedded proposition. HOW constructions instantiate different positions along this licensing hierarchy. Coordination structures (Tsou Manner HOWs) represent **low integration**: the two clauses are independently licensed, each projects its own voice and tense features, and the matrix Agent is not obligatorily involved in the embedded event—the construction merely coordinates two assertions about the subject. Complementation structures (Tsou Method HOWs, Saisiyat Manner/Method HOWs) represent **high integration**: the embedded clause is licensed by and dependent on the matrix predicate, voice features are shared, tense projection is reduced, and the matrix Agent obligatorily controls the embedded Agent role, indicating direct involvement and volitionality in executing the embedded event by a specific manner or method.

This structural gradient aligns with *u*TEL's prediction that higher semantic dependence correlates with greater structural reduction. The interrogative split further supports *u*TEL: Type I constructions (Measure/Resultative HOWs) involve simple scalar or stative predication without embedded event execution, yielding subject-predication structures; Type II constructions (Manner/Method HOWs) involve instrumental or modal relations where the matrix predicate specifies how the embedded event is executed, yielding tighter integration through complementation.

The analysis of patient arguments as structurally generated (Section 5.1.1) provides additional evidence for uTEL. The appearance of patient arguments in Method HOW constructions is not due to lexical specification by the HOW predicate but rather to deep structural integration: when restructuring creates a unified voice domain, the embedded predicate's internal argument becomes accessible for promotion to topic/subject position. This structural accessibility is a direct consequence of the high degree of clausal integration predicted by *u*TEL for complementation with obligatory control.

The cross-linguistic variation between Tsou and Saisiyat represents diachronic movement along the *u*TEL hierarchy, from looser coordination to tighter complementation, driven by increasing conventionalization and semantic bonding between HOW predicates and event predicates. The HOW data thus provide robust empirical validation for the *u*TEL framework, demonstrating how syntactic structure, semantic interpretation, and diachronic change converge to create hierarchical patterns of clausal integration cross-linguistically.

6. Conclusion

This study has demonstrated that interrogative HOW words in Tsou and Saisiyat function as full lexical predicates exhibiting systematic structural variation conditioned by semantic type and grammaticalization stage. Through application of five syntactic diagnostics—eligibility for primary predication, theta-role assignment, object topic

licensing, clause embedding, and distribution as complements of control verbs—we established that HOWs are lexical verbs rather than adverbs or functional elements. Furthermore, we identified an interrogative split: Measure/Resultative HOWs employ simple subject-predication structures (Type I), while Manner/Method HOWs exhibit either coordination (Tsou) or complementation with obligatory control and voice concord (Saisiyat) (Type II).

A central theoretical contribution is the analysis of HOW predicates as **two-place predicates** that introduce an external argument (the agent) and select an event complement. This structure accounts for their full range of syntactic behaviors and distinguishes them categorially from adverbial modifiers. Critically, our analysis demonstrates that when Method HOWs in conjunction with Patient Voice appear to introduce patient/object arguments, these arguments are **structurally generated rather than lexically specified**. As evidenced by Diagnostic 2 (Section 3.2), patient/object arguments in Method HOW constructions emerge through syntactic composition: the Method HOW embeds a transitive event predicate, and through voice concord and restructuring, the embedded predicate's internal argument is promoted to topic/subject position. This structural licensing mechanism argues decisively against a three-predicate analysis, which would incorrectly treat patient arguments as lexically selected by the HOW predicate itself. Instead, the patient/object is a consequence of embedding a transitive predicate within a unified voice domain created by restructuring.

The voice concord phenomenon provides novel evidence supporting both the agreement/nominative-accusative and transitivity/ergative-absolutive analyses of Austronesian voice systems (Chen 2025; Aldridge to appear), demonstrating that voice morphology simultaneously encodes agreement features and transitivity distinctions. The structural generation of patient arguments further illustrates this multifunctionality: voice morphology operates simultaneously as an agreement system (licensing the internal argument as topic/subject) and as a transitivity system (integrating matrix and embedded predicates into a unified event structure).

The structural divergence between Tsou (which preserves coordination for Manner HOWs) and Saisiyat (which has generalized complementation) suggests a grammaticalization pathway from coordination to complementation, consistent with broader clause union hierarchies (Givón 2001, 2009, Cristofaro 2003). These findings validate the Unified Theory of Embedding Licensing (uTEL), showing how syntactic structure, semantic interpretation, and diachronic change converge to create hierarchical patterns of clausal integration. The structural licensing of patient arguments in complementation structures provides direct evidence for uTEL's prediction that deeper integration correlates with greater structural reduction and tighter semantic bonding.

This research enriches the cross-linguistic typology of interrogative words, contributes to debates about voice systems and case alignment in Austronesian languages, establishes voice concord as a diagnostic for restructuring in voice-prominent languages, and illuminates pathways of grammaticalization from coordination to complementation. By demonstrating that patient/object arguments in Method HOW constructions are structurally derived rather than lexically specified, we provide crucial evidence for distinguishing between lexical and structural argument introduction in voice-prominent languages—a distinction with far-reaching implications for theories of argument structure, voice morphology, and clause union.

Future research should extend this analysis to other interrogative words (WHAT, WHERE, WHY), provide formal derivations of voice concord mechanisms and structural

patient licensing, examine corpus frequency patterns to test the grammaticalization hypothesis, and investigate the compositional semantics of HOW+complement constructions within Neo-Davidsonian event structure frameworks. Such investigations will deepen our understanding of how interrogative words, voice morphology, and clause union interact across the world's languages, and how syntactic structures generate arguments beyond the lexical specifications of individual predicates.

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Tripartite verbal structure and extended predicate formation: Arguments from Japanese*

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Abstract
In this paper, it is first shown that verbal structure includes the lexical head R, which functions as a predicate head, and two functional heads v_{tr}P and v_{cat}P. Then I argue that while agentive *suru* is a general activity predicate, its non-agentive counterpart, i.e. non-agentive *suru*, is a predicate with no concrete semantic content. By virtue of this property, non-agentive *suru* allows its closest argument to be added to R to form an extended predicate, and the argument provides a specific semantic content for the non-agentive *suru*. Once the type of construction in which non-agentive *suru* is used is fixed by the argument in RP, the complex RP serves as a full-fledged predicate.

Keywords: extended predicate formation; tripartite verbal structure; non-agentive *suru* 'do'; Japanese

1. Introduction

In the present paper, I argue, on the basis of Japanese data, that a predicative complex, which consists of a verb plus an argument, can be formed in the syntax. I suggest that non-agentive *suru* is a predicate which is devoid of its semantic content, so that some qualifying expression needs to be added to R containing the *suru* head to determine the type of construction in which non-agentive *suru* can occur. The complex formed with *suru* and the argument in RP is shown to serve as a full complex predicate once the use of non-agentive *suru* is identified with the help of the expression appearing in RP.

This paper will push forward two proposals relating to the syntax of predication. One proposal has to do with verbal structure, and I claim that verbal structure consists of three layers of projections although the split vP analysis, which posits that v and V respectively introduce external and internal arguments, is currently prevalent in the literature. A second proposal concerns syntactic predicate formation. I argue that with non-agentive *suru* 'do', an argument (or an adverbial) may be merged with R (comprising a predicate head) to project to RP (i.e. it forms some kind of composite predicate containing a phrasal argument).

The discussion proceeds as follows. In section 2, I argue, basing my discussion on Japanese verbal morphology, that verbal structure has three-layers of projections, headed

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by two functional heads v_{tr} and v_{cat} and one single lexical head R. In section 3, it is argued that non-agentive *suru* allows its associated argument to merge with R to form an extended predicate (RP). Section 4 is a discussion of weather verbs which also form extended predicates with their subjects. A conclusion is presented in section 5.

2. Tripartite verbal structure

In this section, I propose an analysis taking the verbal structure to contain two functional heads of v_{tr} (transitivizer), which introduces an external argument, and v_{cat} (category-identifier), which introduces an internal argument, alongside lexical R (root), which serves as a predicate syntactically. The commonly-assumed split vP structure analysis takes it that verbal structure consists of two projections vP and VP (Chomsky 1995; see also Bowers 1993, 2001, Kratzer 1996), and there are also analyses which posit VoiceP above vP additionally (Pylkkänen 2008, Harley 2013, 2017). Although the split vP analysis is currently a prevalent hypothesis, I argue for the proposed analysis, basing my discussion on Japanese verbal morphology.

2.1. Tripartite verbal structure

The tripartite verbal structure analysis is motivated by the morphological facts of deadjectival and denominal verbs. To begin, observe the morphological paradigm of deadjectival verb formation in (1) (Kishimoto (2023) cf. Oseki (2017)).

(1) Deadjectival verb formation
  a. adjective: *kata-i* 'solid'
  b. intransitive verb: *kata-**m-ar**-u* 'become solid'
  c. transitive verb: *kata-**m-e**-ru* 'make solid'

It is often claimed (e.g. Sugioka 2002) that an adjective like *kata-i* 'solid', which has the sequence of *kata* (stem) + *i* (tense), can be rendered as an intransitive verb (*katamar-u* 'become solid') with the addition of the affix *-mar* to the root *kata*, and a transitive verb (*katame-ru* 'make round') can be derived by adding the affix *-me*. These affixes are usually viewed as simple affixes, but they can in fact be further decomposed into *m-ar* and *m-e*. As is often discussed (see e.g. Jacobsen 1991), *-ar* and *-e* are a pair of morphemes which are used to fix the transitivity of some verbs, as can be seen from the pair of intransitive *kimaru* 'be decided' and transitive *kimeru* 'decide' in (2).

(2) a. intransitive verb: *kim-**ar**-u* 'decide'
  b. transitive verb: *kim-**e**-ru* 'be decided'

In light of this fact, I postulate that the deadjectival verb *katamaru* and *katameru* comprise the verbalizing affix **-***m*, and *-ar* and *-e* are transitivity affixes*,* i.e. *-ar is* an intransitivizer, and *-e*, a transitivizer. Then the deadjectival verbs *katamaru* 'become solid' and *katameru* 'make solid' can be regarded as possessing the sequence of "root+verbalizer +transitivizer+tense".

Essentially the same point can be made with regard to the denominal verbs derived from the nominal *tuna* 'rope', as in (3).[1]

(3) Denominal verb formation
a. noun: *tuna* 'rope'
b. intransitive verb: *tuna-**g**-**ar**-u* 'become linked'
c. transitive verb: *tuna-**g**-**ϕ**-u* 'link'

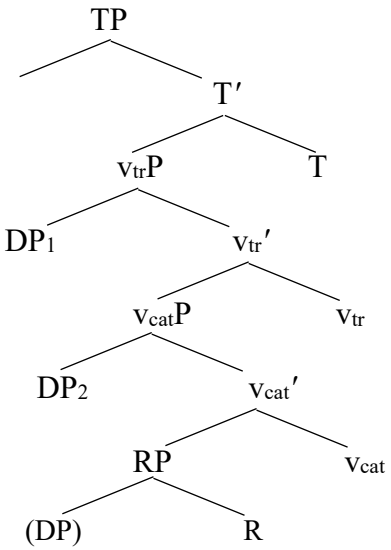
The denominal verbs *tunagaru* and *tunagu* in (3) respectively have the morphemes *-ga-r* and *-g* attached to the root *tuna*. Note that *ar* signals that the verb is intransitive, as seen from (4).

(4) a. intransitive verb: *tukam-**ar**-u* 'be held'
b. transitive verb: *tukam-**ϕ**-u* 'hold'

This fact suggests that *-g* represents a verbalizer, and that *-ar* is an intransitivizer. From this, it is fair to state that the denominal verbs *tunagaru* and *tunagu* have the sequence of "root+verbalizer +transitivizer+tense".

The morphological facts of deadjectival and denominal verbs suggest that the verbal category of the root is determined by a verbalizer (cf. Embick and Marantz 2008), and then its transitivity is fixed by a transitivizer. Given that the tense marker follows these markers, it can be stated that the clause structure includes three distinct verbal heads, R (=root), v_{cat} (=categorizer), and v_{tr} (=transitivizer), as in (5).

(5)



It is reasonable to postulate that v_{tr} and v_{cat} are functional categories, and R a lexical category, which serves as a predicate head syntactically. Following a line of reasoning that some functional projection mediates an argument-predicate relation (e.g. den Dikken 2006), I postulate that if RP does not form an extended predicate, arguments appear in

[1] To my knowledge, only two nouns *mata* and *tuna* can be converted to verbs via the suffix *-g*. A pair of verbs *matagaru* 'straddle' and *matagu* 'straddle over' is another case in point.

the specifier position of functional projections, and receive a θ-role from them. I assume here that v_{tr} assigns a θ-role to an external argument (DP_1), and v_{cat} assigns a θ-role to an internal argument (DP_2).

In this analysis, the argument forming an extended predicate with *suru* is placed in a position lower than an accusative object, which is often assumed to appear in the lowest structural position. Nevertheless, there is an indication that some expressions can appear in a position lower than an accusative object can be obtained by the facts of depictive predication (Kishimoto 2023).

(6) **Titioya-ga* *kooen-ni* *kare$_i$-o* [*Ken$_i$-no* *itumo-no* *kakkoo-de*]
father-NOM park-to he-ACC Ken-GEN usual-GEN appearance-in
ture-te *it-ta.*
take-GER go-PST
'Father took him$_i$ to the parkin Ken$_i$'s usual clothes.'

In (6), the object-oriented depictive contains *Ken*, and the accusative pronominal *kare* cannot be coreferential with *Ken* in (6). This fact suggests that pronominal binding is not possible since the pronominal *kare* 'he' is located in a position which c-commands *Ken*. Given this fact, it is reasonable to postulate that the depictive is adjoined to a projection lower than the one including the object. This being so, it is plausible to posit that the depictive is added to R, which suggests in turn that v_{CAT} rather than R accommodates an object that is assigned a θ-role.

3. Extended predicate formation

In this section, it is argued that non-agentive *suru* does not have a substantive semantic content to serve as a predicate, and that as such, an extended predicate needs to be derived in combination with an expression to supply *suru* with a specific semantic content.

3.1. Agentive *suru* versus non-agentive *suru*

Let us begin by noting some uses of the verb *suru* 'do' in Japanese. The verb *suru* 'do' is considered to be a general activity verb selecting an agentive subject, as with English *do*, but can have non-agentive uses. (Non-agentive *suru* is in many cases used intransitively: Terada 1990, Kageyama 1993, Miyamoto and Kishimoto 2016, Kishimoto 2025b). Agentive *suru* is most typically used as a transitive verb, but can also be used intransitively, as exemplified in (7).

(7) <u>Transitive</u>
a. *siai-o suru* (game-ACC do) 'play a game' [volitional action]
b. *isya-o suru* (doctor-ACC do) 'practice medicine' [profession]
c. *kare-o isya-ni suru* (him-ACC doctor-COP do) 'make him a doctor' [causative]
d. *nekutai-o suru* (tie-ACC do) 'wear necktie' [dressing]
e. *seki-o suru* (cough-ACC do) 'cough' [controllable physiological process]
<u>Intransitive</u>
f. *reigi-tadasiku suru* (politely do) 'behave politely' [behavior]
g. *urouro suru* (loitering do) 'hang around' [mimetic, volitional motion]

Some representative examples of non-agentive *suru* are given in (8).

(8) Intransitive
a. *inabikari-ga suru* (lightning-NOM do) 'there is lightning' [natural phenomenon]
b. *oto-ga suru* (sound-NOM do) 'sound' [natural occurrence]
c. *memai-ga suru* (sound-NOM do) 'feel dizzy' [physiological sensation]
d. *azi-ga suru* (taste-NOM do) 'have a taste' [taste]
e. *san-byaku yen suru* (three-hundred yen do) 'cost three hundred yen' [price]
f. (*mado-ga*) *gatagata suru* (window-NOM shaking do) 'shake' [mimetic, non-volitional motion]
Transitive
g. *byooki-o suru* (sick-ACC do) 'down with a disease' [uncontrollable physiological process]

Transitive *suru* taking an agentive subject can be combined with a variety of objects, and the sentences with agentive *suru* can express a number of activity meanings. Sentences with intransitive non-agentive *suru* can be constructed with a limited set of subjects, and can carry non-stative (eventive) meanings (e.g. (8a), (8b), (8f)) or stative meanings (e.g. (8c,) (8d), (8e)), whose uses are determined depending on the type of combined argument that occurs contiguous with *suru*. Given this fact, I suggest that the argument appearing closest to *suru* is responsible for fixing the meanings of the non-agentive *suru* constructions, while non-agentive *suru* does not have a semantic content of its own.

3.2. Non-agentive *suru* as a semantically-vacuous predicate

Non-agentive *suru* constructions can express a variety of meanings, which can be thought to originate from the argument occurring contiguous with *suru*. This fact suggests that non-agentive *suru* does not have a semantic content. One such indication may be obtained from the facts of *dekiru* 'can do' replacement. The verb *dekiru* is the suppletive form of *suru* which is used to express a potential meaning (Kageyama 1993). This replacement is possible with agentive *suru*.[2]

(9) a. *John-ga* *siai-o* *si-ta*.
John-NOM game-ACC do-PST
'John played a game.'
b. *John-ga* *siai-ga* *deki-ta*.
John-NOM game-NOM can.do-PST
'John could play a game.'

While (9a) with agentive *suru* expresses an eventive meaning of "John played a game", (9b) with *dekiru* carries a stative potential meaning of "John was able to play a game". By contrast, non-agentive *suru* cannot be replaced by the suppletive *dekiru*, as exemplified in (10).[3]

[2] The potential forms of verbs express stative meanings, and owing to this fact, the case frame changes from "nominative-accusative" to "nominative-nominative".
[3] In (10), non-agentive *suru* is intransitive, so that *memai* 'dizzy' receives nominative case marking. Semantically, the sequence of *memai-ga suru* carries the meaning of physiological sensation, so that the experiencer appears in the clause marked with

(10) a. *John-wa memai-ga si-ta.*
John-TOP dizziness-NOM do-PST
'John felt dizzy.'
b. **John-wa memai-ga deki-ta.*
John-TOP dizziness -NOM can.do-PST
'John could feel dizzy.'

While *dekiru* replacement cannot be applied to (10), it is legitimate to have a potential form of the predicate *kanziru* 'feel', as seen in (11).

(11) a. *John-wa memai-o kanzi-ta.*
John-TOP dizziness-ACC feel-PST
'John felt dizzy.'
b. *John-ni memai-ga kanzi-rare-ta.*
John-DAT dizziness -NOM feel-POTEN-PST
'John could feel dizzy.'

The sequence of *memai-ga suru* has a meaning which can be roughly paraphrased as *memai-o kanziru* 'feel dizziness" in (11a). If *kanzi-rare-ru* 'can feel dizzy' can replace *memai-o kanziru*, the sequence *memai-ga dekiru* in (10b), which has the potential form of *suru*, will be expected to have the meaning 'can feel dizzy'. Nevertheless, (10b) is not acceptable.

It is worthwhile to note that *suru* can be combined with a limited set of nouns to derive compound verbs, as exemplified in (12) (see Kishimoto and Yu 2019).[4]

(12) a. *men-suru* (face-do) 'face'
b. *atai-suru* (value-do) 'be worthwhile'
c. *namida-suru* (tears-do) 'shed tears'
d. *kokoro-suru* (heart-do) 'be mindful'
e. *ase-suru* (sweat-do) 'sweat'

With the N-*suru* compound verbs in (12), their substantial meanings come from nouns. The nouns in the NP-compounds in (12) refer to entities, and thus are not event nouns. When they are compounded with *suru*, the entire compounds describe some events or the states pertinent to the entities referred to by the nouns literally or figuratively.

The fact noted above suggests that *suru* has a function of turning a nominal into a verb categorically (with no semantic content). In the present perspective, the N-*suru*

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nominative case (in a way similar to a major subject receives nominative case; see Kishimoto 2025b).

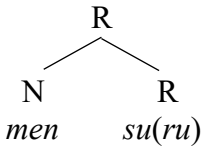
[4] Japanese abounds with N-V compound verbs, as seen from some representative examples given in (i).

(i) a. *iro-zuku* (color-attach) 'change color'
b. *katati-zukuru* (form-make) 'shape'
c. *hana-saku* (flower-bloom) 'bloom'

This fact suggests that R can be complex in Japanese, i.e. R can form a complex predicate with a nominal element in it, as [$_R$ [$_N$ N] R]].

compound *men-suru* ‘face (v)’ obtains the concrete semantic content from the N with the configuration in (13).

(13)



Men-suru is a compound verb, and thus, the noun is included in R in (13). The noun *men* provides a semantic content (just like an English denominal verb like *face* (v.) converted from the noun *face* (n.)), while *suru* specifies that the complex head acts as a predicate, as represented in (14) (i.e. the symbol P indicates that it is a predicate, with its content being unspecified).[5]

(14) *men*: ‘face’ + *suru*: P (x, y) ⇒ **face′** (x, y)

Once the semantic content of *men-suru* is specified by the noun *men* as in (14), the N-*suru* compound functions as a two-place stative predicate.

Even when N-*suru* compounds express non-stative (or eventive) meanings, the suppletive form *dekiru* cannot be compounded with the nouns (Kishimoto and Yu 2019). Consider (15).

(15) *Ano hito-ga* {*namida-si-ta*/**namida-deki-ta*}.
that man-NOM {tear-do-PST/tear-can.do-PST}
‘That man {shed/could shed} tears.’

Namida-suru means “shed tears”, which is a verbal meaning furnished by *namida*. Semantically, there is no reason why *namida-dekiru* in (15) should carry the meaning of “can shed tears”, since the verb *nagasu* ‘shed’ can be turned into its potential form.

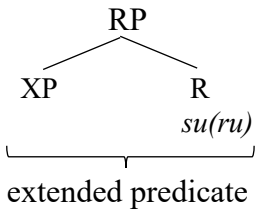
(16) *Ano hito-ga namida-o* {*nagasi-ta*/*nagase-ta*}.
that man-NOM tear-ACC {shed-PST/can.shed-PST}
‘That man {shed/could shed} tears.’

It is reasonable to state then that the suppletive form of *dekiru* ‘can do’, which possesses a potential meaning, is not usable for substituting for *suru* in N-*suru* compounds on the ground that *suru* does not include a substantive semantic content. The data suggest that the semantic content of N-*suru* compounds is supplied by the noun, but not *suru*.

Given that *dekiru* replacement is not possible with the non-agentive *suru* constructions in (8), as with N-*suru* compounds, it is reasonable to assume that a similar predicate formation process applies to non-agentive *suru*. I suggest that non-agentive *suru* has a specification as a predicate (P) with no semantic content and forms an extended predicate with the expression occurring adjacent to it.

[5] The formation of N-*suru* compound is not a fully productive process since the compound cannot be formed on any type of noun, as exemplified by the impossibility of **atama-suru* ‘head-do’.

(17)



In the present perspective, ordinary arguments that receive a θ-role appear in a higher functional projection of v_{tr} or v_{cat}. Thus, these arguments are not merged with R. Note that non-agentive *suru* does not qualify as a full-fledged predicate by itself syntactically with no semantic content, so that the expression XP occurring closest to non-agentive *suru* is merged with R to provide a concrete semantic content with the composite predicate RP.

To be a little more concrete, let us consider how an extended predicate is formed in (18), which describes the event of sound emission.

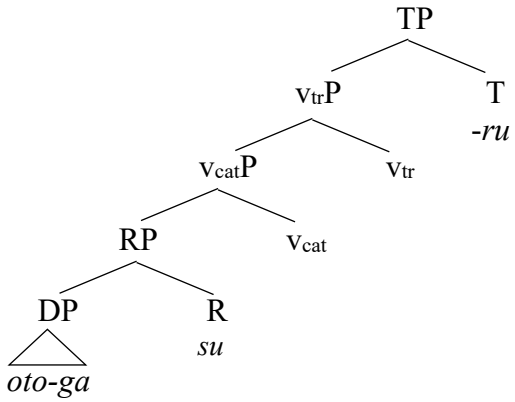
(18) *Mukoo-kara* (*ookina*) *oto-ga* *si-te* *i-ta*.
over.there-from loud sound-NOM do-GER be-PST
'A (loud) sound was heard from over there.'

In the non-agentive *suru* construction which expresses the sense of sound emission in (18), the nominative DP must represent a sound or a voice, but cannot be a song even if it may broadly be construed as a kind of sound.

(19) *Mukoo-kara* {*bakuhatu-on/koe/uta-goe/*uta*}*-ga*
over.there-from {explosion-sound/voice/song-voice/song}-NOM
si-te *i-ta*.
do-GER be-PST
'{An explosive sound /A voice/A singing voice/A song} was heard from over there.'

The root of non-agentive *suru* in (18) occupies the R-head position. Since *suru* requires a specific kind of noun referring to a sound, it is reasonable to posit that the semantic content of *suru* is supplied by an XP inside RP. This being so, the DP *oto* 'sound' in (18) should appear in RP, as illustrated in (20).

(20)



The nominative argument appearing in RP has phrasal (XP) status, so that it can

accommodate an adjectival modifier like *ookina* 'loud', and it can also be separated from the verb *suru*, as in (21).[6]

(21) [*Ookina oto-ga*]$_i$ *mukoo-kara* t_i *si-te i-ta*.
loud sound-NOM over.there-from do-GER be-PST
'A (loud) sound was heard from over there.'

(21) suggests that RP is a composite predicate consisting of *suru* plus a nominative DP. If the nominative argument *oto* is added to R, RP can gain a semantic content from this argument.

(22) *oto*: 'sound' + *suru*: P (x) ⇒ **be.heard′** (sound)

Since the event of emitting a sound is closely tied to the noun *oto* 'sound', the extended predicate complex can be assumed to acquire the eventive meaning (denotation) represented by **be.heard′** (x). In addition, the subject *oto* directly fills the variable position x in **be.heard′** (x), and as a result, the zero-valence predicate with the meaning of **be.heard′** (sound) is derived. In (20), therefore, the proposition is complete at the level of RP, so no argument appears in a position where a θ-role is assigned by v.

Empirical evidence in favor of the view that non-agentive *suru* functions as a predicate on the condition that a qualifying expression provides a specified semantic content may be derived from *wh*-questioning.

(23) *Mukoo-kara* {***nani/donna oto***}*-ga si-te i-ta no?*
over.there-from {what/what sound}-NOM do-GER be-PST Q
'{What/what kind of sound} was heard from over there?'

The *wh*-question in (23) is legitimate when the *wh*-phrase *donna oto* 'what sound' is used as a nominative argument. The reason is that *oto* provides the semantic information that identifies the sound-emission construction. On the other hand, the *wh*-question is not acceptable if the nominative argument is *nani* 'what' because it does not provide a specific semantic content for the composite predicate RP that expresses a sound-emission meaning.

One might wonder whether *nani* 'what' question can be improved if what is referred to by the nominative *wh*-phrase can be inferred contextually. On the contrary, the sentence remains unacceptable even if such contextual information is provided.

(24) **Ookina oto-to tiisana oto-no uchi dotira-ga si-te i-ta no*?
loud sound-and soft sound-GEN among which-NOM do-GER be-PST Q
'Which was heard, a loud sound or a soft sound?'

The nominative *wh*-word *dotira* 'which' does not include a lexical specification that what it refers to is a sound. Since *dotira* is a D-linking *wh*-word (cf. Comorovski 1996), the value of *wh*-phrase in (24) should be one referring to a sound. If contextual information

[6] By contrast, an adjectival modifier is not allowed to be added to N-*suru* compound, as shown by the impossibility of *[*tairyoo-no ase*]-*suru* ([plenty-GEN sweat]-do) 'sweat a lot'.

played a role in identifying the construction, (24) would be acceptable. Nevertheless, (24) is totally unacceptable, which shows that the lexical specification of a sound needs to be provided by the nominative argument in the sound-emission construction with non-agentive *suru*.

No such *wh*-questioning constraint is observed when R contains a full-fledged predicate head. For instance, the sentence in (25) carries the meaning similar to that of (23).

(25) *Mukoo-de* {*oto/bakuhatu-on*}*-ga* *kikoe-ta*.
over.there-in {sound/explosion-sound}-NOM be.heard-PST
'{An explosive sound/A sound} was heard over there.'

The nominative subject in (25) is an ordinary argument which receives a θ-role. This argument can be turned into *nani* 'what' in a *wh*-question, as shown in (26).

(26) *Mukoo-de* {***nani/donna oto***}*-ga* *kikoe-ta* *no?*
over.there-in {what/what sound}-NOM be.heard-PST Q
'{What/What kind of sound} was heard over there?'

The reason why *nani* 'what' is allowed for the nominative subject in (26) is that the semantic selection of the argument is fixed by the θ-role assigned by the predicate, i.e. the argument can be construed as satisfying the semantic selection of *suru* by virtue of the assigned θ-role. In (26), since *kikoeru* selects a sound noun as its subject, *nani* 'what' is taken to refer to some kind of sound although the *wh*-word itself does not carry information that can identify the referred entity as a sound.

In the non-agentive *suru* construction, once the semantic content for RP is identified thanks to the expression that occurs contiguous with *suru*, the predicative complex RP can function as a full-blown predicate, and can take arguments in the normal way.

(27) {***Nani/Doko***}*-kara* *henna* *oto-ga* *si-te* *i-ta* *no?*
{what/where}-from strange sound-NOM do-GER be-PST Q
'Where did the strange sound come from?'

In (27), the locative appears in a higher structural position than the nominative argument. As shown in (27), a *wh*-question can be formed by using *nani* 'what' for the locative argument. The fact suggests that in the non-agentive *suru* construction expressing the sense of sound emission, the locative does not form an extended predicate with the verb *suru.*

Non-agentive *suru* gives rise to different types of constructions depending on the kind of expression that immediately precedes it. The non-agentive *suru* construction in (28) describes a motion event with a specific manner.

(28) (*Tuyoi kaze-de*) *mado-ga* *gatagata* *si-te* *i-ta.*
strong wind-with window-NOM rattling do-GER be-PST
'The window was rattling (because of strong wind).'

(28) has the "nominative-adverbial" frame, where the adverbial appears internal to the nominative argument. In this construction, a *wh*-question which asks for a manner with

doo ‘how’ is not acceptable, whereas a *wh*-question can be derived by making use of *nani* for the nominative argument.

(29) a. *Sono mado-wa* {***doo/dorekurai gatagata***} *si-te i-ta no?*
that window-TOP {how/how.much shaking} do-GER be-PST Q
‘How/How much shaking did that window do?’

b. ***Nani-ga*** *gatagata si-te i-ta no?*
what-NOM shaking do-GER be-PST Q
‘What was shaking?’

As seen in (29a), a *how*-question cannot be formed with non-agentive *suru*, but it is possible to ask for the degree of the mimetic adverb *gatagata* with the *wh*-expression *dorekurai* ‘how much’.

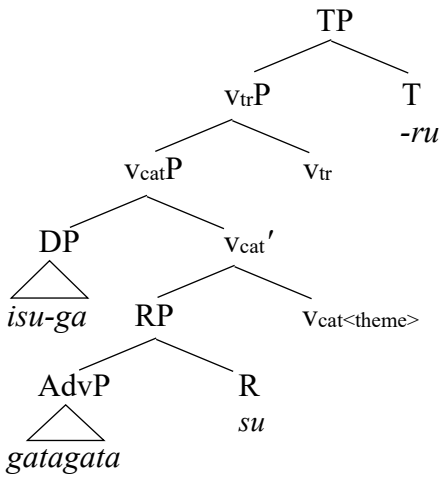
In (29), the mimetic *gatagata* forms an extended predicate with non-agentive *suru* since it specifies the meaning of a manner of shaking and provides a semantic content necessary for the sentence to qualify as the non-agentive *suru* construction describing a motion event.

(30) *gakagata*: ‘shaking’ + *suru*: P (x) ⇒ **shake′** (x)

In the *wh*-question in (29a), *dorekurai gatagata* qualifies as an expression to furnish the lexical information to identity the construction type of the non-agentive *suru* construction. Accordingly, the *wh*-question containing *dorekurai gatagata* is legitimate. By contrast, the *wh*-word *doo* ‘how’ does not specify a particular manner of activity. Hence, *doo* cannot be used for identifying the type of non-agentive *suru* construction, as seen in (29a).

The adverbial *gatagata* in (28) forms an extended predicate (RP) with non-agentive *suru* syntactically. Thus, the nominative argument, located in a higher position than the manner adverbial, serves as an ordinary internal argument receiving a θ-role in v_{cat}P.

(31)



A *wh*-question with *nani* ‘what’ constructed on the non-agentive *suru* in (28) is well-formed, as seen in (29b), since the nominative subject is not an expression contiguous with *suru* and does not form an extended predicate.

Finally, observe that a similar mimetic construction (with the “nominative-adverbial” frame) can be formed on agentive *suru*, as in (32).

(32) *Sono inu-ga urouro si-te i-ta.*
that dog-NOM loitering do-GER be-PST
'That dog was loitering.'

A well-formed *how*-question can be formed from (32), where the predicate is agentive *suru*, as shown in (33a).

(33) a. *Sono inu-wa* {***doo/dorekurai urouro***} *si-te i-ta no?*
that dog-TOP {how/how.much loitering} do-GER be-PST Q
'{How/How much} loitering was that dog doing?'
b. ***Nani-ga*** *urouro si-te i-ta no?*
what-NOM loitering do-GER be-PST Q
'What was loitering?'

No contrast in acceptability is observed between *doo* 'how' and *dorekurai urouro* 'how much loitering' in (33a). (33b) is also a legitimate *wh*-question. Since agentive *suru* is a full-fledged predicate on its own, the *wh*-questions in (33) are all well-formed.

To summarize, the single nominative argument of the non-agentive *suru* construction expressing the meaning of sound emission forms an extended predicate with *suru*, and furnishes the predicate complex with a concrete semantic content. On the other hand, the nominative subject of the non-agentive *suru* construction describing a non-volitional motion behaves as an ordinary subject argument, since the adverbial appearing contiguous with the verb *suru* forms part of an extended predicate.

4. The position of subjects

In Japanese, nominative subjects are typically raised to TP, since they are the prominent arguments of clauses (see Kishimoto 2001). Under the vP-internal subject hypothesis, subjects are base-generated in vP, but are raised to Spec-TP. This movement may be motivated by the EPP requirement imposed on T. Nevertheless, as discussed by Kishimoto (2011), there are cases where nominative subjects stay in situ without raising to Spec-TP. In this section, the subjects of the non-agentive *suru* constructions are shown to make another case, in that they remain in situ with no A-movement to Spec-TP.

For the purpose of assessing the overt syntactic position of arguments, I will make use of the proform predicate *soo da* 'be so' construction (the past form of *soo da* [so COP] is *soo dat-ta* [so COP-PST]). The proform predicate construction is interpreted with reference to its antecedent clause, and can be legitimate if the antecedent clause carries a stative or a stative-like meaning (progressive, repetitive, habitual, etc.), since *soo da* is a stative predicate.

Crucially, the proform *soo (da)* is interpreted with reference to the projection dominated immediately by T, most typically vP, in its antecedent clause (see Kishimoto 2025a).

(34) a. Antecedent clause: [$_{TP}$ SUBJ [$_{vP}$ OBJ Pred] T]

b. Proform predicate construction: [$_{TP}$ SUBJ *soo da*]

Accordingly, the proform predicate gives rise to different interpretations according to whether arguments occupy a structural position internal to vP or above vP in the antecedent clause. Because of this feature, the proform predicate construction provides us with data that allow us to assess where arguments are located in clause structure. Consider how the proform predicate *soo da* is interpreted in (35).

(35) *Kinoo Ken-ga zutto hon-o yon-de i-ta-ga, kyoo-wa*
today Ken-NOM constantly book-ACC read-GER be-PST-CONJ today-TOP
Mari-ga (***hon-o***) ***soo dat-ta***.
Mari-NOM book-ACC so COP-PST
'Ken was constantly reading books yesterday, but Mari was so (=was constantly reading books) today.'

The proform predicate construction in (35) is acceptable obtaining the interpretation that Mari kept reading books, provided that the object is not overtly expressed.

Note that the object of the transitive verb in the antecedent clause is interpreted as included in *soo da*, and thus cannot be realized overtly in the proform predicate construction. The subject in the proform predicate construction is understood to be the subject of the transitive verb *yomu* 'read' since *soo da* includes the meaning of a reading act provided by the transitive verb in the antecedent clause. The subject of the proform *soo da* refers to an individual distinct from the subject in the antecedent clause, but the fact shows that the subject of the transitive verb *yomu* can be realized overtly in the proform predicate construction.

Nominative subjects that receive θ-roles are moved to Spec-TP from a vP-internal subject position. The following examples show that regardless of whether the verb in the antecedent clause is unergative or unaccusative, the subject can be realized overtly in the proform predicate construction.

(36) a. Ken-wa [*zutto hanasi-te i-ta*]-*ga,* ***Mari-ga soo dat-ta***
Ken-TOP constantly speak-GER be-PST-CONJ Mari-NOM so COP-PST
koto-mo ato-de sit-ta.
that-also later know-PST
'Ken was constantly speaking, and I came to know later that Mari was so (=was constantly speaking), too.'

b. *Kinoo-kara kotira-no boo-ga* [*zutto zimen-ni taore-te*
yesterday-from here-GEN bar-NOM constantly ground-to fall-GER
i-ta]-si, ***atira-no boo-ga soo dat-ta*** *koto-mo atode sit-ta*.
be-PST-CONJ there-GEN bar-NOM so COP-PST that-also later know-PST
'From yesterday, the bar here down to the ground all the time, and I came to know later that the bar over there was so (=was down on the ground all the time), too.'

Since the predicate proform constructions in (36) are legitimate with the overtly realized nominative subjects, it can be stated that the subjects of the unaccusative and unergative verbs are located in Spec-TP.

Turning now to the non-agentive *suru* constructions, the examples in (37) show that the nominative argument of non-agentive *suru* expressing the sense of a sound emission cannot be realized in the proform predicate construction.

(37) a. *Kinoo-wa* [*henna oto-ga zutto si-te i-ta*]-*si*,
yesterday-TOP strange sound-NOM constantly do-GER be-PST-CONJ
kyoo-mo ***soo dat-ta***.
today-also so COP-PST
'Yesterday, strange sounds were constantly coming out, and it was so (= strange sounds were constantly coming out) today, too.'

b. **Kinoo-wa henna oto-ga* [*zutto si-te i-ta*]-*ga*,
yesterday-TOP strange sound-NOM constantly do-GER be-PST-CONJ
kyoo-wa ***ketatamasii oto-ga soo dat-ta***.
today-TOP loud sound-NOM so COP-PST
(lit.) 'Strange sounds were constantly coming out yesterday, but loud sounds were so today.'

The fact that the nominative argument cannot be realized for the proform predicate construction to be well-formed suggests that the subject of non-agentive *suru* stays within vP when it forms part of an extended predicate in RP.

In the non-agentive *suru* construction where an adverbial occurs as the closest argument to *suru*, the nominative subject, but not the adverbial, can be realized in the proform predicate construction, as shown by (38).

(38) a. *Kinoo-wa ano isu-ga* [*zutto gatagata si-te i-ta*]-*ga*,
yesterday-TOP that chair-NOM constantly shaking do-GER be-PST-CONJ
kyoo-wa ***kono isu-ga soo dat-ta***.
today-TOP this chair-NOM so COP-PST
'That chair was constantly shaking yesterday, but this chair was so (=was constantly shaking) today.'

b. **Kinoo-wa ano isu-ga zutto gatagata* [*si-te i-ta*]-*ga*,
yesterday-TOP that chair-NOM constantly shaking do-GER be-PST-CONJ
kyoo-wa ***kono isu-ga gatagata soo dat-ta***.
today-TOP this chair-NOM shaking so COP-PST
(lit.) 'That chair was constantly shaking yesterday, and this chair was so shaking today.'

The data show that the nominative argument of the non-agentive *suru* construction describing a (non-agentive) motion event acts as a normal subject, and appears in Spec-TP. This state of affairs is naturally expected since the adverbial rather than the nominative subject forms an extended predicate with the verb *suru* in the non-agentive motion construction.[7]

[7] The agentive *suru* construction that describes a motion event shows the same distribution in the proform predicate construction as its non-agentive counterpart in (37), as can be seen in (i).

(i) a. *Kinoo-wa ano inu-ga* [*zutto urouru si-te i-ta*]-*ga*,
yesterday-TOP that dog-NOM always loitering do-GER be-PST-CONJ
kyoo-wa ***kono inu-ga soo dat-ta***.
today-TOP this dog-NOM so COP-PST

In Japanese, some nominative arguments (such as nominative subjects) appear in TP, while others (such as nominative objects) appear internal to vP. These nominative arguments show different behaviors in the proform predicate construction depending on where they reside in the antecedent clause. Consider the sentences in (39).

(39) a. *John-ga eigo-ga hanase-ru.*
John-NOM English-NOM can.speak-PRS
'John can speak English.'
b. *John-ga migi-me-ga akakat-ta.*
John-NOM right-eye-NOM red-PST
'As for John, his right eye was red.'

Both sentences in (39) have the same "nominative-nominative" case frame, but the arguments have different grammatical statuses. The potential predicate *hanaseru* 'can' in (39a) is a two-place predicate, which takes a nominative object alongside the nominative subject, but (39b) is a major subject construction, where a nominative major subject is added to the intransitive clause which takes a nominative subject.

(40) a. [$_{TP}$ SUBJ-NOM [$_{vP}$ OBJ-NOM V] T]
b. [$_{TP}$ M.SUBJ-NOM SUBJ-NOM [$_{vP}$ V] T]

The two sentences have different constituent structures. (39a) can be postulated to have the configuration in (40a), where the nominative subject is located in TP, and the nominative object in vP. In (39b), both major subject and thematic subject can be assumed to be located in TP, as in (40b) (Kishimoto 2009).

The proform predicate construction behaves differently depending on whether the antecedent clause is (39a) or (39b). (41) is a case involving a dyadic predicate construction.

(41) a. *Ken-wa eigo-ga hanase-ru-ga,* ***Mari-ga soo da***
Ken-TOP English-NOM can.speak-PRS-CONJ Mari-NOM so COP
to-wa sira-naka-ta.
that-TOP know-NEG-PST
'Ken can speak English. But I did not know that Mari was so (=can speak French).'

'That dog was always loitering yesterday, but this dog was so (=was always loitering) today.'

b. **Kinoo-wa ano inu-ga zutto urouro* [*si-te i-ta*]*-ga*,
yesterday-TOP that dog-NOM always loitering do-GER be-PST-CONJ
kyoo-wa kono inu-ga ***urouro soo dat-ta***.
today-TOP this dog-NOM loitering so COP-PST
(lit.) 'That dog was always loitering yesterday, and this dog was so with loitering today.'

The fact shows that the subject is raised to Spec-TP, since it is an ordinary argument in the relevant non-agentive *suru* construction, and that the adverbial is located below TP whether or not it forms an extended predicate with *suru*.

b. **Ken-wa eigo-ga hanase-ru-ga,* ***Mari-ga furansugo-ga***
Ken-TOP English-NOM can.speak-PRS-CONJ Mari-NOM French-NOM
soo da *to-wa sira-naka-ta*.
so COP that-TOP know-NEG-PST
(lit.) 'Ken can speak English, but I did not know that Mari was so French.'

The proform predicate construction with an overt nominative subject in (41a) is acceptable with the interpretation that Mari can speak French. But the proform predicate construction in (41b), where the two nominative arguments are realized overtly, is not. Given the constraint imposed on the proform interpretation, the unacceptability of (41b) can be attributed to the overt realization of the vP-internal nominative object in the proform predicate construction.

Standing in contrast with the dyadic potential predicate construction is the major subject construction. The two nominative arguments of the major subject construction in (39b) can be realized in the proform predicate construction, as seen in (42).

(42) *Ken-ga migi-me-ga akakat-ta koto-wa sit-te i-ta-ga,*
Ken-NON right-eye-NOM red-PST that-TOP know-GER be-PST-CONJ
Mari-ga hidari-me-ga *soo dat-ta koto-wa sira-nakat-ta*.
Mari-NOM left-eye-NOM so COP-PST that-TOP know-NEG-PST
'I know that Ken's right eye was read, but I did not know that Mari's left eye was so (=was red).'

The acceptability of the proform construction in which the two nominative arguments are overtly realized is expected since both major subject and thematic subject of the antecedent clause are located in a higher position than vP.

Predicates provide descriptions about the subjects (Rothstein 2001), and prototypical subjects possess a cluster of subject properties (Keenan 1976, cf. Comrie 1981). The prominence of subjects is often encoded structurally by virtue of A-movement from a vP-internal subject position to Spec-TP. This movement may be motivated if T has an EPP requirement. Apparently, the subjects forming an extended predicate with non-agentive *suru* are not prominent arguments, so that they are not moved to Spec-TP. The non-agentive *suru* construction expressing the sense of sound emission provides a case showing that the nominative subject is not the normal subject, and T does not have an EPP requirement.

5. Weather expressions

Weather expressions provide another case where their single arguments occur in RP to form an extended predicate. I suggest that the subjects of the weather verbs *huru* '(rain) fall' and *huku* '(wind) blow' are placed in RP to form an extended predicate with the weather verb since the proposition can be complete at the level of RP.

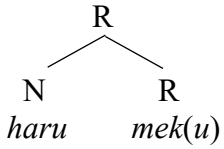
To begin, observe that the predicates in weather expressions tend to have two forms. In the first place, weather conditions are often described by single predicates with no subjects in the clauses, as exemplified in (43).

(43) a. *Zyozyo-ni haru-mei-te ki-ta.*
gradually spring-come.close-GER come-PST
'Gradually, spring was coming/It became spring-like.'

b. *Kinoo-wa* *sigure-ta*.
yesterday-TOP occasional.rain-PST
'It rained on and off yesterday.'

The compound verb in (43a) has the form of "N + *meku*". The suffix *meku* 'come close' is a verbalizer whilethe noun *haru* 'spring' included in the verb represents a season.

(44)



In the configuration in (44), it can be reasonably assumed that the weather predicate is saturated via the constant filling in its variable position at the Root level.

(45) *haru*: 'spring' + *meku*: **come.close′** (x) ⇒ **come.close′** (spring)

The weather predicate is a zero-valence predicate. Thus, (43a) is a complete sentence although a subject does not appear in the clause.

There is another salient way of forming weather expressions. Some weather verbs such as *huru* '(rain) fall' and *huku* '(wind) blow' are intransitive predicates which select subjects.

(46) a. *Kaze-ga* *hui-te* *i-ru*.
wind-NOM blow-GER be-PRS
'It is windy.'
b. *Ame-ga* *hut-te* *i-ru*.
rain-NOM fall-GER be-PRS
'It is raining.'

The verb *huku* 'blow', if used as a weather verb, takes only *kaze* 'wind' as its subject.[8] In the case of the precipitation verb *huru* 'fall', the subject is confined to *ame* 'rain' or *yuki* 'snow' (=a frozen form of rain).

Notably, the weather sentences in (46) do not allow *what*-questions to be formed, as shown in (47).

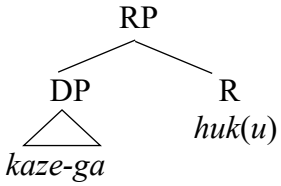
(47) a. *Kinoo* {***nani/dorekurai-no** **ame**}**-ga** *hut-te* *i-ta* *no?*
yesterday {what/how.much-GEN rain}-NOM fall-GER be-PST Q
'{What/How much rain} was it raining yesterday? '
b. *Kinoo* {***nani/donna** **kaze**}**-ga** *hui-te* *i-ta* *no?*
yesterday {what/what wind-NOM} blow-GER be-PST Q
'{What/What kind of wind} was it blowing yesterday?'

The *wh*-word *nani* 'what' cannot be used for the subject of the *wh*-questions in (47a) and (47b). But it is possible to use *donna kaze* 'what kind of wind' and *dorekurai-no ame* 'how much rain' as the nominative arguments of the *wh*-questions.

[8] The verb *huku* 'blow' is typically used transitively in a non-weather use.

Given that the weather compoun verb *haru-meku* can have a complete propositional content without a subject, it is reasonable to assume that the proposition of the sentence in (45) can be complete at the RP level by virtue of the subject being added to RP, as in (48).

(48)



For the weather expression in (46a), it is reasonable to hypothesize that the subject *kaze* 'wind', which satisfies the selectional restriction of the weather verb *huku* 'blow', directly fills in the variable position of the predicate **blow′** (x) to form a zero-valence predicate.

(49) *kaze*: 'wind' + *huku*: **blow′** (x) ⇒ **blow′** (wind)

In this analysis, the fact that a *what*-question with *nani* 'what' cannot be formed from (47a) follows straightforwardly, since the *wh*-word *nani* does not have a lexical content that what is referred to is some kind of wind.

Observe at this point that in the case of weather expressions, *what*-questions that do not denote winds are not acceptable, but that the sentences are rendered acceptable if D-linked *wh*-words are used, as in (50).

(50) *Kita-kaze-to minami-kaze-no uchi dotira-ga hui-te i-ta no*?
north-wind-and south-wind-GEN among which-NOM blow-GER be-PST Q
'Which blew yesterday, the north wind or the south wind?'

This fact stands in contrast with the case of non-agentive *suru*. The difference lies in the fact that the argument merged in RP contributes to building the predicative meaning in the non-agentive *suru* construction, while the weather expression does not. Weather verbs are meaningful, and the nominative argument is used just for filling in the variable position of the predicate. Thus, the inference derived by context information is sufficient to meet the selectional requirement of the predicate.

The present analysis leads to the expectation that the subjects of the weather verbs stay in situ. This expectation is fulfilled, as seen in (51).

(51) a. *Kinoo-wa* [*kita-kaze-ga zutto hui-te i-ta*]-*si,*
yesterday-TOP north-wind-NOM constantly blow-GER be-PST-CONJ
kyoo-mo ***soo dat-ta***.
today-also so COP-PST
'Yesterday, the wind was constantly blowing from the north, and today was so (=the wind was blowing from the north).'

b. **Kinoo-wa* ***kita-kaze-ga*** [*zutto hui-te i-ta*]-*ga,*
yesterday-TOP north-wind-NOM constantly blow-GER be-PST-CONJ
kyoo-wa ***minami-kaze-ga soo dat-ta***.
today-TOP south-wind-NOM so COP-PST

'Yesterday, the south wind was always blowing, but today the south wind was so.'

When the weather sentence is the antecedent, the subject is not allowed to be realized in the proform predicate construction and if the subject is not materialized, a well-formed proform predicate construction can be constructed. The examples illustrate that the sole arguments of the weather verbs are not raised to Spec-TP.

5. Conclusion

In this paper, it has been argued that while agentive *suru* is a general activity predicate, non-agentive *suru* does not have a semantic content. Since the non-agentive *suru* does not have have a semantic content of its own, the type of construction in which *suru* appears cannot be identified. Then, for the non-agentive *suru* to serve as a predicate, it is necessary for the closest argument or adverbial to be added to R, by way of which the two elements form an extended predicate. The argument or adverbial appearing in RP provides a specific semantic content for the non-agentive *suru,* and once the semantic content is provided for the non-agentive *suru*, the extended predicate RP serves as a full-fledged predicate. It has also been shown that some weather verbs form an extended predicate with their subjects.

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Program

The Second International Workshop on the Syntax of Predication and Modification

Meeting Dates: 1-2 September, 2025 (In-person Meeting)
Venue: Hungarian Research Centre for Linguistics, Budapest, Hungary

September 1 (Mon)	
13:00-13:45	Registration
13:45-14:00	Welcome and Opening Remarks
14:00-14:40	**Modification is not (always) predication: Evidence from Basque** *Cecilia Fernández Altonaga* (University of the Basque Country (UPV/EHU) and Université de Pau et des Pays de l'Adour (UPPA))
15:20-16:00	**From minimizing to modification: Diachronic evolution, variation, and change of *alig*, *aligha* 'hardly, probably (not)'** *Mónika Varga* (Hungarian Research Centre for Linguistics)
(Break)	
16:30-17:30 (Keynote Address)	**On the synchrony and diachrony of grammaticalized result phrases in Hungarian** *Andrea Szávó* (University of Debrecen)
September 2 (Tues)	
10:00-10:40	**What you are presented with is not what you predicate over** *Ivona Kučerová* (McMaster University) and *Edgar Onea* (University of Graz)
10:40-11:20	**Interrogative *hows* as syntactic predicates: Evidence from Tsou and Saisiyat** *Henry Y. Chang* (Academia Sinica) and *Marie M. Yeh* (National Tsing Hua University)
11:20-12:00	**Disambiguating Dutch pseudopartitives** *Lieke Hendriks* (University of Göttingen)

(Lunch)	
14:00-14:40	**The hypothesis of topic-relativization** *Yangyu Sun and Maria Teresa Guasti* (University of Milano-Bicocca)
14:40-15:20	**Japanese *te-no* clauses as non-finite noun-modifying clauses** *Viktor Köhlich* (Goethe University Frankfurt)
(Break)	
16:00-17:00 (Keynote Address)	**Tripartite Verbal Structure and Extended Predicate Formation: Arguments from Japanese** *Hideki Kishimoto* (Kobe University)
17:00-17:10	Closing Remarks