

On the diachronic change of the Korean TAM marker *-te*

A case of post-syntax-induced language change



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The 19th Workshop on Altaic Formal Linguistics
July 1, 2026

Talk in a nutshell

The diachronic change of the Korean TAM marker *-te* shows that **complexity in the post-syntactic module may give rise to a syntactic change.**

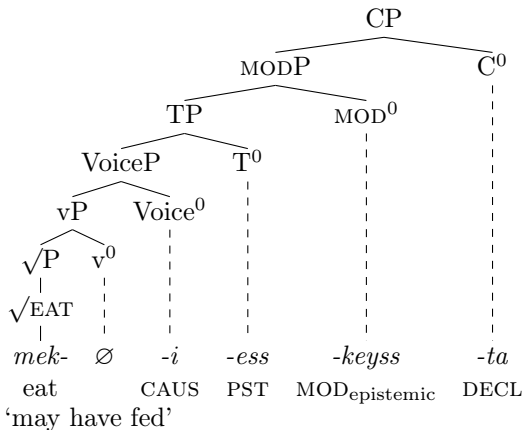
Outline

- 1 Introduction
- 2 Difference between Middle Korean and Modern Korean *-te*
- 3 MiK *-te* violating the Mirror Principle
- 4 Mismatch as a diachronic accident
- 5 Structural reanalysis of *-te*: Toward MoK evidential marker
- 6 The order between the reanalysis and the evidentialization
- 7 Conclusion and prospects

Mirror-Principle (Baker 1985)

- Morphemes are not placed arbitrarily.
- The morphology represents the syntactic hierarchy:
 $\checkmark < \text{Voice}^0 < T^0 < \text{MOD}^0 < C$.

(1)



Language change and Mirror-Principle violation

What happens when a historical change gives rise to a mismatch between syntax and morphology?

- repaired morphology?
- mismatch tolerated?

The historical change of *-te* as an empirical case

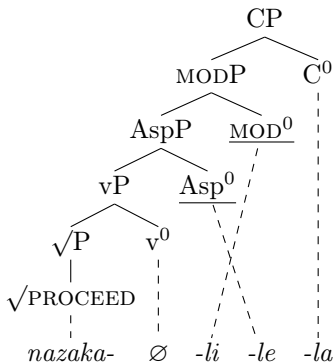
Mismatch may persist.

Middle Korean (MiK)

(2) *Salom-i mwot **nazaka-li-le-la**.*

person-NOM not proceed-MOD-PST.IPFV-DECL

‘People could not have gone any farther.’ (1447 *Sŏkpo sangjŏl* 24:50)



The position of *-te* relative to MOD⁰ in MiK exemplifies the second scenario.

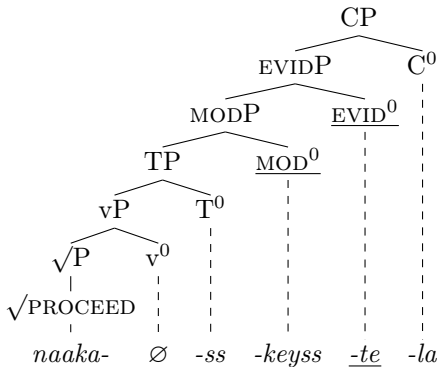
Mismatch may not persist forever.

Modern Korean (MoK)

(3) *Salam-i mot naaka-ss-keyss-te-la.*

person-NOM not proceed-PST-MOD-EVID-DECL

‘People could not have gone any farther.’ (MoK translation of (2))



The position of *-te* relative to MOD⁰ in MiK suggests that historical mismatch may not persist forever.

What is the driving force of language change?

The mismatch regarding *-te* and MOD⁰ was tolerated in the 15th-century MiK, but not in MoK.

- What is the difference?
- What was the driving force of *-te*'s change?

Proposal

Tolerated mismatch in the 15th century



Simplicity preference (Roberts 2022)

extended to post-syntax



Increased post-syntactic complexity in the 18th century



Structural reanalysis

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Middle Korean (MiK)

- An ancestral variety of Modern Korean (MoK) spoken from the 10th century to the 16th century.
- Reliable materials attested from the mid-15th century (the invention of *Hangul* in 1443)



Figure: Middle Korean material (1447 *Sŏkpo sangjŏl* 11:16)

Korean TAM marker *-te*

- Found in both MiK and MoK
- The MoK *-te* is directly related to the MiK one.



-te is EVID⁰ in MoK, but Asp⁰ in MiK

- MiK *-te*: a past imperfective marker (Choi 2015; Lee 2020)
- MoK *-te*: an epistemic modal (more specifically, past-sensory evidential, Chung 2020; Song 2020)
- Semantic and morphological differences between MiK and MoK (See Appendix I)

(4) Middle Korean

Tasos salom-i ... kungeysye sa-te-la.
 five person-NOM ... there live-PST.IPFV-DECL

‘Five people were staying there.’ (1447 *Sŏkpo sangjŏl* 3:35)

(5) Modern Korean

Taum tal-pwuthe kilum-kaps-i olu-te-la.
 next month-from oil-price-NOM rise-EVID-DECL

‘The oil price rises from next month.’ (Song 2020: 416)

Subject honorific $-(u)si$: diagnostic for $-te$'s position

	$-te-si$	$-(u)si-te$	Position
MiK	attested	attested	Asp ⁰
MoK	unacceptable	acceptable	EVID ⁰ (Mood ⁰ _{EVID} à la Cinque 1999)

Table: Ordering of $-te$ and $-(u)si$

Subject honorific -(u)si: diagnostic for -te's position

MoK -te appears after subject honorific -(u)si

(6) Modern Korean

ha-si-te-la

do-HONS-EVID-DECL

‘do(es)/did/will do (subject honorific, evidential)’

(7) a. Middle Korean

ho-te-si-ta

do-PST.IPFV-HONS-DECL

‘was doing (subject honorific)’

b. Modern Korean

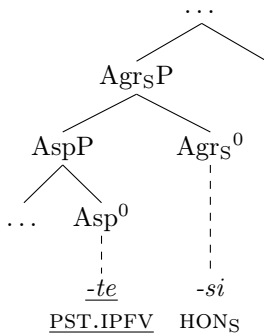
* *ha-te-si-ta*

do-PST.IPFV-HONS-DECL

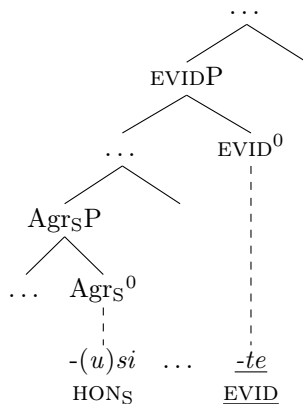
N.B. (7b) pattern is also attested in Middle Korean.

MiK *-te* is Asp; MoK *-te* is EVID.

(8) Middle Korean



(9) Modern Korean



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MiK modal $-(u)li$

- A morpheme expressing epistemic modality such as conjecture, inference, and certainty.
- Assumed to be $MOD^0_{\text{epistemic}}$ (abbreviated as MOD^0)

(10) *Ney api ... cwuk-uli-la.*
 your father ... die-MOD-DECL

‘Your father will (surely) die.’

(1490 *Samkanghayngsilto Enhay Hyoja* 21)

- Asp^0 -te is predicted to appear between $\sqrt{\quad}$ and MOD^0 $-(u)li$.

Mirror-Principle violation

- -te constantly appears after -(u)li.

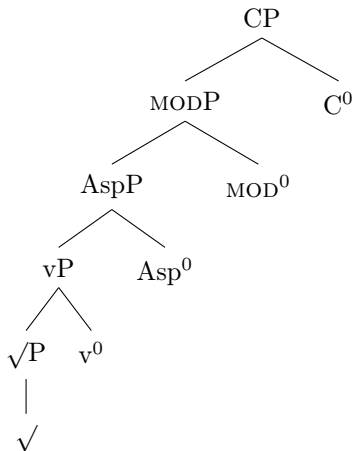
- (11) a. *ho-li-le-la*
 do-MOD-PST.IPFV-DECL
 ‘would be going to do’
- b. * *ho-te-li-la*
 do-PST.IPFV-MOD-DECL

Middle Korean

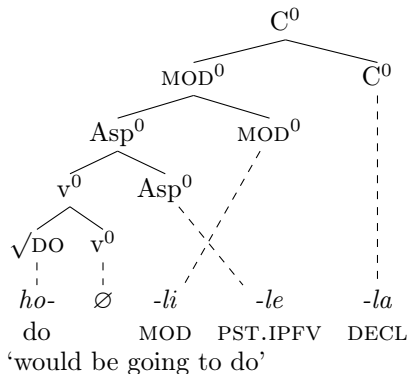
- -te’s allomorphic variation will be crucial in a minute!

Mirror-Principle violation

(12) Syntactic structure



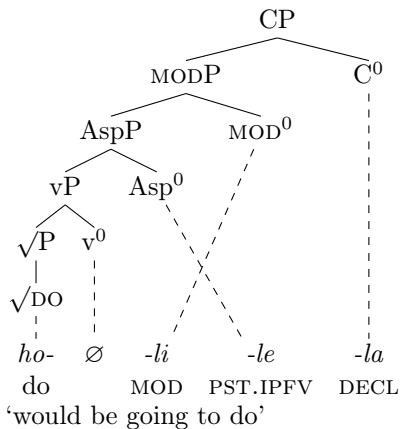
(13) Complex head after Head Movement



Note on representation

(14) abbreviates (12) and (13).

(14)



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Section in a nutshell

The mismatch as a diachronic ‘accident’

- *-te* was historically structurally higher than $-(u)li$.
- Grammaticalization that made $-(u)li$ structurally higher than Asp^0

Post-syntactic readjustment rule in the 15th century

The origin of $-(u)li$

$-(u)li$ is historically grammaticalized from a relative construction (a.k.a. **adnominal** construction) followed by a copula $-i$.

- $-(u)li$ involves future adnominal $-(u)l$.

(15) a. Future adnominal $-(u)l$

[	<u>___</u> _i	<i>phica-lul</i>	<i>mek-<u>ul</u></i>	]	<i>salam</i> _i
		pizza-ACC	eat-FUT.ADN		person _i
‘a person who is going to eat pizza’					

b. Non-future adnominal $-(u)n$

[	<u>___</u> _i	<i>phica-lul</i>	<i>mek-<u>un</u></i>	]	<i>salam</i> _i
		pizza-ACC	eat-NFUT.ADN		person _i
‘a person who ate pizza’					

The allomorphy of *-te*: diagnostics for preceding copula

-(u)li contained a copula *-i* before the grammaticalization (Lee 1998, 2018; Lee and Ramsey 2011; Choi 2015, a.o.).

$$\begin{array}{ccccccc}
 (16) & -(u)l & & -\emptyset/i & & \underline{-i} & \underline{-le} \\
 & \text{FUT.ADN} & & \text{-DEP.N} & & \text{COP} & \text{PST.IPFV} \\
 & & & & & \downarrow & \uparrow \\
 & & & & & \text{contextual} & \text{allomorphy}
 \end{array}$$

- Synchronic evidence: *-te*'s allomorphy in MiK (more on this, see Appendix II).

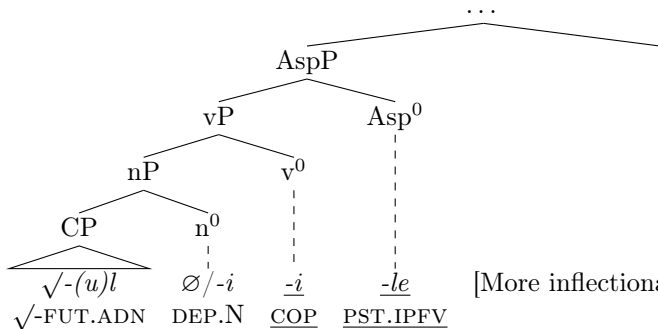
Copula *-i* is assumed to be v^0 taking nominal category as its complement.

- In the pre-15th c. Asp^0 *-te* was **structurally higher** than *-(u)li*.

Pre-15th century: RC $-(u)li$ lower than Asp^0

- In the pre-15th century, $-(u)li$ was lower than Asp^0 , being a complement of Asp^0 .
- This structure does not give rise to any Mirror-Principle violation.

(17)



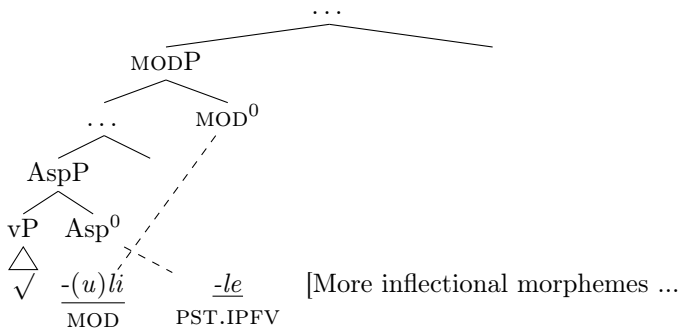
[More inflectional morphemes ...]

15th century: MOD⁰ -(u)li higher than Asp⁰

15th century

- -(u)li's new position involves a Mirror-Principle violation.

(18)



Asp-climbing rule

How do we account for the mismatch in the 15th century morphology?

- Two conflicting pieces of evidence: the semantics of each morpheme and their relative order
- **Asp-climbing rule**, a post-syntactic readjustment rule

$$(19) \text{ Asp-climbing rule} \\ [\dots \text{Asp}^0 \dots \text{MOD}^0 \dots]_{X^0} \rightarrow [\dots \text{MOD}^0 \text{Asp}^0 \dots]_{X^0}$$

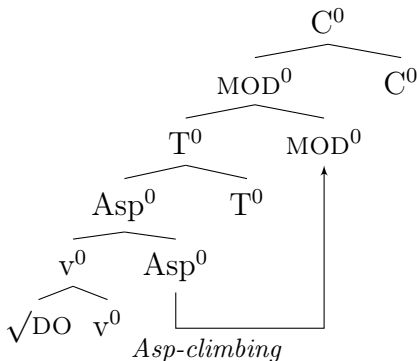
Asp-climbing rule: Derivation

(11a) *ho-li-le-la*

do-MOD-PST.IPFV-DECL

‘would be going to do’

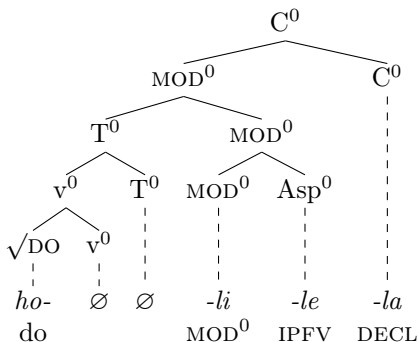
(20) Input complex head and dislocation



Asp-climbing rule: Derivation

- (11a) *ho-li-le-la*
 do-MOD-PST.IPFV-DECL
 ‘would be going to do’

- (21) Vocabulary Insertion



Interim summary

- $-te$ is Asp^0 in MiK
- A mirror-principle violating pattern in MiK: $-te$ is structurally lower than $-(u)li$, but linearly farther from root.
- The mismatch is a result of the grammaticalization of $-(u)li$.
- Asp-climbing rule mediates the mismatch between syntax and morphology.



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Remember, *-te* is not Asp^0 anymore.

What brought about this change, and why? → **Structural reanalysis of *-te***

- Post-syntactic extension of *simplicity preference* (Roberts 2022).
- Increased post-syntactic complexity in post-syntax



Simplicity preference (Roberts 2022)

(22) *Simplicity Preference* (Roberts 2022: 210)

A general preference on the part of language acquirers to assign the simplest possible structural representations to the strings they hear

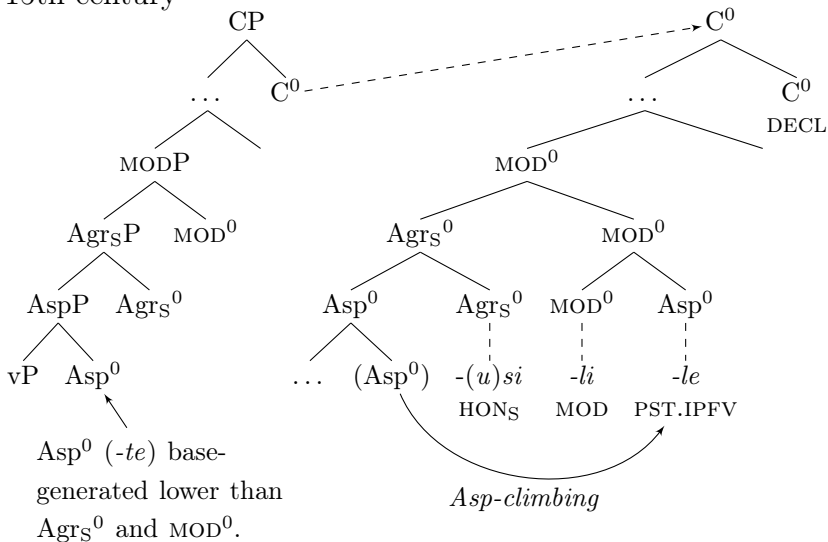
(23) Two possible representations of ‘John walks’ (Roberts 2022: 212)

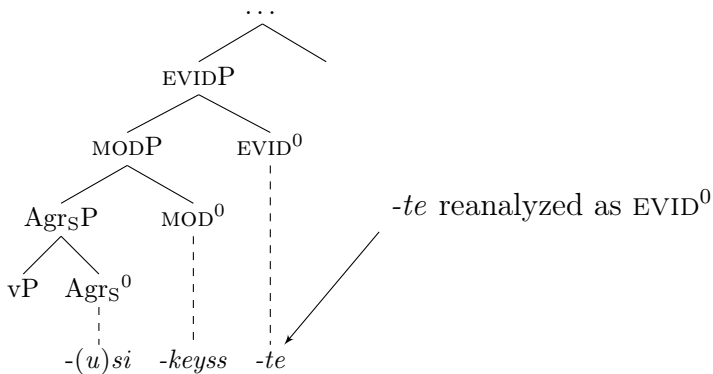
- a. John [_T walks] [_{VP} ... (walks) ...]
- b. John T [_{VP} walks]

- (23b) is simpler than (23a).
- Modern Korean grammar is simpler than Middle Korean grammar when it comes to *-te*.

Structural reanalysis of *-te*

(24) 15th century



Structural reanalysis of *-te*(25) Modern Korean¹

- No mismatch
- No Asp-climbing rule

¹The epistemic modal marker was replaced independently.

The moment of reanalysis: before the late-18th century

$-(u)si$ as a structural diagnostic

- Pre-subject-honorific position $\rightarrow \text{Asp}^0$
- Post-subject-honorific position $\rightarrow \text{EVID}^0$

Pre-SH position disappears in the late 18th century (Park 2006)

- *-te*'s position changed before this point.

Is MiK grammar more complex than MoK grammar?

Simplicity preference addresses complexity in structural representation.

- The original proposal defines structural complexity in terms of syntactic operations, such as Merge.

(23) Two possible representations of ‘John walks’ (Roberts 2022: 212)

a. John [_T walks] [_{VP} ... (walks) ...]

b. John T [_{VP} walks]



- In both MiK and MoK, head movement happens up to C^0 anyway.

Extension of simplicity preference to post-syntax

Proposal: Simplicity preference also operates in post-syntax

- Post-syntactic complexity is defined in terms of the number of post-syntactic operations.
- Now, MoK grammar is simpler than MiK grammar, since it does not involve any post-syntactic operation.

	Post-syntactic operation	#
MiK	Asp-climbing rule	1
MoK	N/A	0

Table: Post-syntactic complexity

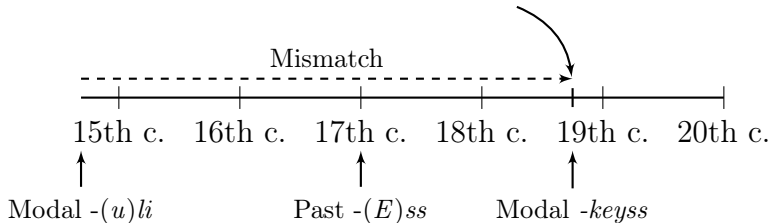
- When syntactic complexity ties, grammars compete in terms of post-syntactic complexity.

Why didn't structural reanalysis happen in the 15th century, but happened later on?

- The post-syntax was more complex in the 15th century than in MoK anyway.
- Later grammaticalizations increased post-syntactic complexity after the 15th century!

(26) Timeline regarding *-te*'s reanalysis

Structural reanalysis complete



Grammaticalization of $-(E)ss$

MiK stative/resultative $-E\ is(i) \rightarrow$ MoK past $-(E)ss$

- (27) a. MiK Resultative/stative $-E\ is(i)$

Ku PIKWU-i LYEN-s-kwos wuhuy anc-a is-kenul ...
 that monk-NOM lotus-GEN-flower on sit-CON exist-as

‘As the monk is seated on a lotus flower ...’ (1447 *Sōkpo sangjōl* 24:16)

- b. MoK past $-(E)ss$

Ku pikwu-ka yenkkoch wuyey anc-ass-ta.
 that monk-NOM lotus on sit-PST-DECL

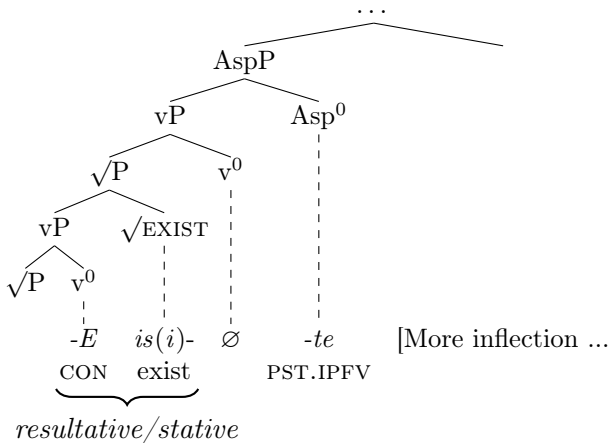
‘That monk sat on a lotus flower.’



15th century: Resultative/stative *-E is(i)-*

No Mirror-Principle violation

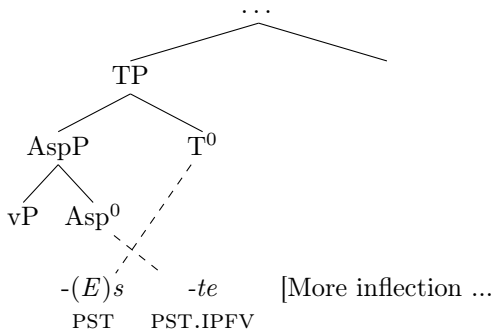
(28)



Late 17th century: Past $-(E)s$

Mirror-Principle violation and Asp-climbing rule

(29)



(30)

Asp-climbing rule after $-(E)ss$

$$[\dots \text{Asp}^0 \dots \text{T}^0/\text{MOD}^0 \dots]_{X^0} \rightarrow [\dots \text{T}^0/\text{MOD}^0 \text{Asp}^0 \dots]_{X^0}$$

Grammaticalization of *-keyss*

MiK causative *-key ho-* + resultative *-E is(i)* → MoK epistemic modal *-keyss*

- (31) a. MiK causative *-key ho-*

Nay WANG-*s* *mozom-ol* *culki-si-key*

I king-GEN mind-ACC rejoice-HON_S-CON

hwo-li-ngi-ta.

do.1-VOL-HON_{Addr}-DECL

‘I shall make king’s mind rejoice.’ (1447 *Sökpo sangjöl* 24:42)

- b. MoK epistemic modal *-keyss*

Ku chayk caymiiss-keyss-ta.

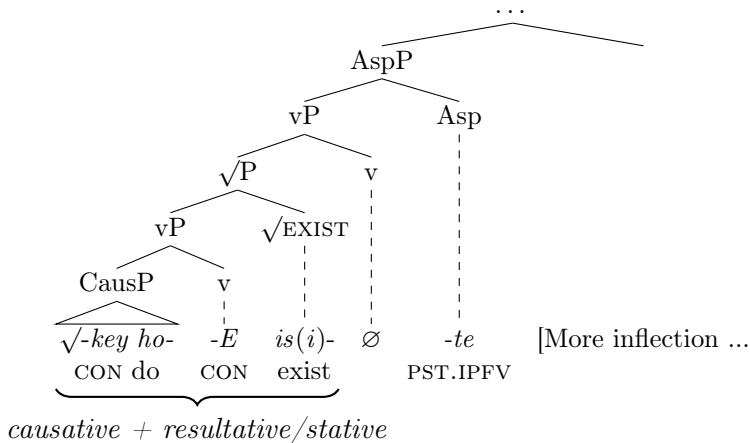
that book be.entertaining-MOD-DECL

‘That book looks entertaining (lit. That book would be entertaining).’

15th century: causative + resultative/stative

No Mirror-Principle violation

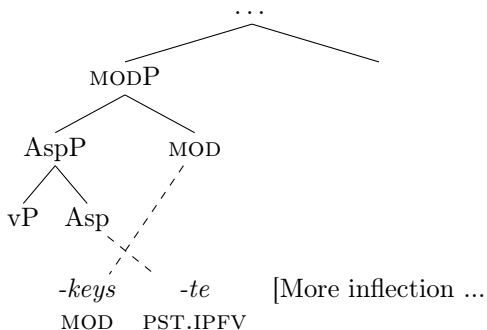
(32)



Late-18th century: modal

Mirror-Principle violation and Asp-climbing rule

(33)

(34) Asp-climbing rule after *-keyss*

$$\begin{aligned}
 & [\dots \text{Asp}^0 \dots \text{T}^0 / \text{MOD}^0_{-(u)li/-keyss} \dots]_{X^0} \\
 & \rightarrow [\dots \text{T}^0 / \text{MOD}^0_{-(u)li/-keyss} \text{Asp}^0 \dots]_{X^0}
 \end{aligned}$$

Reanalysis yielding a simpler post-syntactic module

- The reanalysis happened because a simpler post-syntactic module was preferred for the given PLD.

	<i>-te</i> as Asp ⁰		<i>-te</i> as EVID ⁰
	15th c.	18th c.	21th c.
Input X ⁰	[... Asp ⁰ ... MOD ⁰ ...] _{X⁰}	[... Asp ⁰ ... MOD ⁰ /T ⁰ ...] _{X⁰}	[... MOD ⁰ /T ⁰ EVID ⁰ ...] _{X⁰}
Asp-climbing	↓ MOD Asp	↓ MOD/T Asp	↓
VI	↓ -(u)li-le	↓ -(u)li-le/-(E)s-te	↓ -keys-te/-(E)ss-te
# of PS rules	1	2 or 3	0

Table: Post-syntax before and after the structural reanalysis

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Prediction of the current analysis

- Implication of the current analysis: *-te*'s reanalysis is structurally driven, rather than semantically motivated.
- The prediction: the evidential meaning emerged after the structural reanalysis had been complete.

The prediction is borne out.

Completion of the semantic change: from mid 19th c.–early 20th c.

- The person constraint on agentive subjects characteristic of the Modern Korean *-te* did not exist until the mid-19th century (Choi 2015; Lee 2020).

(35) a. 1790 *Inŏdaebang* (1:22b)

Mwusom YENKWO-lwo kutayci SILYAK-ul
 which reason-INS such break.a.promise-ACC
ho-siop-te-nkwo?
 do-HONS-TE-Q

‘Why did (you) break your promise?’

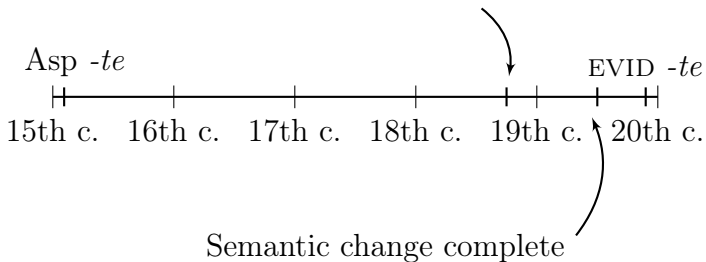
b. 1882 *Cengceng Inŏdaebang* (2:8a)

Mwusun yenkwo-lwo kutayci silyakhe-sy-es-swo?
 which reason-INS such break.a.promise-HONS-PST-Q

Evidentialization later than the reanalysis

(36) Timeline regarding *-te*'s reanalysis

Structural reanalysis complete



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Takeaway

- The syntax-morphology mismatch regarding MiK *-te* is an accidental result of grammaticalization, resulting in post-syntactic complexity.
- The reanalysis of *-te* in the post-17th century removed the post-syntactic complexity.
- The current case showcases that Roberts's (2022) simplicity preference operates on the post-syntactic module.

Loose end

- Nature of the change: one-swoop change or gradual change?
- How do we characterize the ‘tipping-point (Yang 2016)’ of the structural reanalysis?
- Formalizing evidentialization
- How to justify the grammaticalization of $-(u)li$ in more detail
- Cross-linguistic test

ACC	accusative	GEN	genitive
ADN	adnominal	HON	honorific
ASS	assertive	INS	instrumental
CAUS	causative	IPFV	imperfective
CON	connective	MOD	modal
COP	copula	NFUT	non-future
DECL	declarative	NOM	nominative
DEP	dependent	PST	past
EVID	evidential	VOL	volitive
FUT	future		

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Thank you!

Person constraint of *-te* on agentive subjects

In Modern Korean, first- and second-person subject cannot be used as an agentive subject in declarative and interrogative sentence, respectively, in the presence of *-te* (Lee 2020; Song 2020).

- (37) a. * *Nay-ka keki ka-te-la.*
 I-NOM there go-TE-DECL

‘I went there.’

- b. * *Ney-ka keki ka-te-nya/nka?*
 you-NOM there go-TE-Q/Q

‘Have you gone there?’

(Lee 2020: 331)

Person constraint of *-te* on agentive subjects

Such a constraint is not found in Middle Korean.

- (38) a. *Nay lwongtamho-ta-la.*
 I.NOM joke-PST.IPFV.1-DECL
 ‘I was joking.’ (1447 *Sŏkpo sangjŏl* 6:24b)
- b. *Ne-y i NYEM-ul twuis-te-nta?*
 you-NOM this thought-ACC place-TE-Q
 Have you thought this? (1459 *Wŏrin sŏkpo* 9:35)

The past meaning is obligatory only in MiK

Modern Korean: does not have to describe past action.

- (39) a. *Taum tal-pwuthe kilum-kaps-i olu-te-la.*
 next month-from oil-price-NOM rise-EVID-DECL
 ‘The oil price rises from next month.’ (Song 2020: 416)
- b. *Cepen tal-pwuthe kilum-kaps-i ol-ass-te-la.*
 last month-from oil-price-NOM rise-PST-EVID-DECL
 ‘The oil price rose last month.’

Lenition of /t/ in post-copular position

In MiK, /t/ becomes /l/ when it is placed to the right of the copula *-i*.

(40) $t \rightarrow l$ / Copula *-i* __

a. After $\sqrt{\quad}$: no lenition

ho-ta

do-DECL

b. After copula: lenition

kwiskes-i-la.

ghost-COP-DECL

Lenition of /t/ in post-copular position

-te is also subject to the lenition rule.

(41) Asp *-te* $\rightarrow$ *-le*

a. After $\sqrt{\quad}$: no lenition

ho-te-la.

do-PST.IPFV-DECL

b. After copula: lenition

kwiskes-i-le-la.

ghost-COP-PST.IPFV-DECL

Lenition of /t/ in post-copular position

The lenition rule is not reducible to the general phonology.

(42) After HON_S *-(u)si* and HON_{Addr} *-ngi*: No lenition

a. *ho-si-ta*

do-HON_S-DECL

b. *ho-si-ni-ngi-ta*

do-HON_S-ASS-HON_{Addr}-DECL

The post-*(u)li* environment also exhibits the same allomorphy with the post-copular position.