Syntax below words: verbal suffixation in Chinese

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1 Introduction

- **Debate**: Do affixes attach to the root in the lexicon or after (either in syntax or the PF)?
  - Since early generative grammar (Chomsky 1970; Aronoff 1976)
  - Remains relevant in the Minimalist Program concerning whether language only has one generative engine (Halle and Marantz 1993; Bruening 2018)
- This debate extends to Chinese (including Cantonese & Mandarin), which is rich in verbal suffixes

(1) a. sik-**zo** faan [C(antonese)]
eat-PFV rice
'ate rice'

b. chi-**le** fan [M(andarin)]
eat-PFV rice
'ate rice'

① The **lexicalist view** (Cheng 1989; Gu 1993, 1995; Huang, Li, and Li 2009; Tang 2010) (cf. Chomsky 1995)

- Lexicon: Aspectual suffixes combine with the verbal stem in the morphological component (Numeration: { ... ***sik***, ***sik-zo***, ... })
- Syntax: Enter syntax together as V^0 ➜ licensed by Asp^0 via Agree or LF movement in syntax

☞ A more powerful lexicon and a small syntactic workload

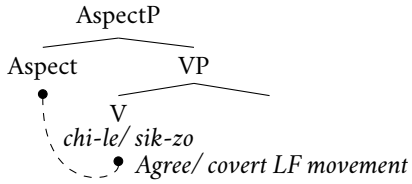
② The **derivational view** (Tang 1998, 2003; Tsai 2001, 2008)

- Syntax: The verb and the suffix head distinct projections (Asp and V)

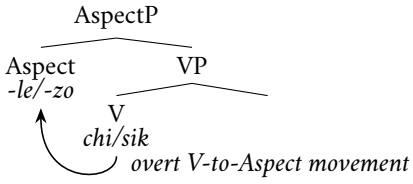
➜ Verbs combine with suffixes in syntax by head movement
(Or by Lowering in the PF, e.g., Cheng, Yi, and Xiong 2016, to be discussed)

☞ A minimal lexicon and only (post-)syntactic components are generative (in the spirit of Distributed Morphology, e.g., Halle and Marantz 1993; Bruening 2018)

(2) The lexicalist view (View ①)



(3) The derivational view (View ②)



- View ① is considered the "standard" view in Chinese linguistics, as adopted by Huang, Li, and Li 2009's textbook, with empirical arguments (e.g., manner adverb placement)
- View ② is often assumed in different works[1] but few arguments have been offered except for suffix ordering (Tang 2003)

1. E.g., Cheng and Sybesma (2004) on postverbal modals, Pan and Ye (2015) on separable verbs in Mandarin, Cheng and Vicente (2013) and Lee (2024) on verb doubling, Yip (2019, 2022) on converbal suffixes, etc.

Overview of the talk

- **Goal**: We argue for the derivational view ② over the lexicalist view ①
- We offer novel arguments to demonstrate that verbs and suffixes must enter syntax as **separate heads**
- We further show that verbs undergo **V-to-Asp head movement in syntax** to suffixes, rather than Asp-to-V Lowering in PF
- We revisit the lexicalist arguments and suggest that the patterns **can be derived under View** ② without stipulations
- **Upshot**: The findings support the idea that syntax is the only generative engine (following DM).

- **Road map**

§2: Arguments for the derivational view
§3: Head movement in syntax
§4: Revisiting the lexicalist arguments
§5: Conclusion
§6: Appendix

2 Arguments for the derivational view

We offer four novel *arguments* from independently noticed facts in Mandarin and Cantonese for ② over ①:

(4) Four arguments for the derivational view
❶. Mirror Principle effects
❷. Verb doubling constructions
❸. Mandarin P-to-V incorporation
❹. Cantonese separable verbs

2.1 ❶ Mirror Principle effects

- Conceptual argument from suffix ordering
- The suffix order mirrors semantic scope that reflects syntactic height (cf. Baker 1985, *et seq.*)
  - Cantonese: universal *-saai* scopes over experiential *-gwo* in (5a)
  - Vs. (5b): the preverbal experiential aspect *si-gwo* (Wu 2020) scopes over *-saai*

(5) a. Keoi sik-**gwo**-saai nidi daangou.
3SG eat-EXP-ALL these cake
'Each cake, s/he has tried some of it.' (ALL > **EXP**)

b. Keoi **si-gwo** sik-saai nidi daangou. [C]
3SG once eat-ALL these cake
'S/he has eaten all the cake.' (**EXP** > ALL)

  - Mandarin: *V-**guo**-le* (Gu 1993, 1995; Yip 2020)
  - (6): the perfective viewpoint by *-le* scopes over the experiential aspect by *-guo* representing indefinite situations (Smith 1994)

(6) Ta yijing kan-**guo**-le nei-ben shu le. (Gu 1995:52) [M]
3SG already read-EXP-PFV that-CL book SFP
'S/he has already read that book.' (PFV > **EXP**)

- **View** ①: The mirroring effects **require stipulations to be accounted for**
  - Cannot be recast as inflectional vs. derivational morphology distinction (cf. Zhou 1990): they are all suffixes associated with higher functional projections (e.g., Asp)[2]
  - Operations in the lexicon should not be sensitive to syntactic structures
  - An extra mapping rule between suffix ordering and the licensing projections is needed, as also acknowledged by Gu (1995, 55n5)
- **View** ②: the effects **come for free** as a consequence of roll-up head movement[3]
  - The closer the suffix to the stem, the lower its projection is
  - Syntactic positions feed semantic scope ➜ Mirror Principle effects
  - No extra stipulations are needed.

(7) i. $[_{QP}$ -*saai* $[_{AspP}$ *sik*$_V$-***gwo*** $[_{VP}$ ~~*sik*$_V$~~ $]]]$ ➜ ii. $[_{QP}$ *sik*$_V$-***gwo***-*saai* $[_{AspP}$ ~~*sik*$_V$-***gwo***~~ $[_{VP}$ ~~*sik*$_V$~~ $]]]$

(8) i. $[_{AspP_{PFV}}$ -*le* $[_{AspP_{EXP}}$ *kan*$_V$-***guo*** $[_{VP}$ ~~*kan*$_V$~~ $]]]$ ➜ ii. $[_{AspP_{PFV}}$ *kan*$_V$-***guo***-*le* $[_{AspP_{EXP}}$ ~~*kan*$_V$-***guo***~~ $[_{VP}$ ~~*kan*$_V$~~ $]]]$

2.2 ❷ Verb doubling constructions

- Chinese verbs can undergo (long-distance) head movement to the left periphery for focus/topichood with both copies pronounced
  - See Cheng and Vicente (2013) and Lee (2024) for movement evidence: (i) lexical identity effects, (ii) island effects, (iii) intervention effects, and (iv) idiom preservation

(9) Lin **tai**, keoi dou m-**tai** ni-bun syu (Verb 'even'-focus) [C]
even read 3SG also not-read this-CL book
'S/he doesn't even READ this book.' (Lee 2024:27)

(10) **Chi**, wo shi xiang **chi**. (...) (Verb topicalization) [M]
eat 1SG be want eat
'As for eating, I do want to eat. (But ...)' (Cheng and Vicente 2013:6)

- When the verbs are suffixed (V-suffix), the higher copy is never a V-suffix string, but the bare V form

(11) Lin {**tai**/ ***tai-gwo**} keoi dou mou **tai-gwo** ni-bun syu. (Verb 'even'-focus) [C]
even read read-EXP s/he also not read-EXP this-CL book
'S/he didn't even READ this book.'

(12) {**Chi**/ ***chi-guo**}, ta shi **chi-guo** zhe-wan mian de. (Verb topicalization) [M]
eat eat-EXP 3SG be eat-EXP this-bowl noodles SFP
'As for eating, s/he has eaten this bowl of noodles.'

- **View** ①: Bare verb doubling is **unexpected**
  - V-suffix is a syntactic terminal; V and suffix are sub-heads
  - ➜ Sub-heads (level below V^0) cannot undergo movement (cf. lexicalists' Lexical Integrity Principle)
- **View** ②: Bare verb doubling is **derived**
  - Verbs and suffixes are different syntactic terminals

2. Rint Sybesma (p.c.) points out to us that the *-guo* before *-le* may be different from the experiential *-guo* and receive a full lexical tone 4 instead of a neutral tone in Mandarin. To our three native Beijing Mandarin consultants, neutral tones are still possible in the *V-guo-le* sequence. See Smith (1994) and Gu (1995) for more discussion on the aspectual contribution of *-guo*.
3. Cf. Harley (2010) for how Mirror Principle effects are derived by head movement, including apparent exceptions.

➜ Bare verbs project their own V^0 and can be targeted by Foc^0/Top^0
– NB: no excorporation of bare V from V-Asp (cf. Aboh 2006; Kandybowicz 2008 for such parallel chain formation in predicate clefting; and Lee 2021; Lee and Yip 2026a for how the doubling effects are derived)

(13) $[_{FocP/TopP}$ **V**-Foc/Top ... $[_{AspP}$ **V**-Asp $[_{VP}$ ~~V~~ ...]]] (V-to-Foc/Top movement)

- Note that in principle, the whole V-suffix can be displaced or doubled, as in right dislocation (Cheung 2015; Lee 2017; Yip 2025a)
  – The ban on V-suffix doubling in verb focus and topicalization could be due to semantic considerations (e.g., the intended focus/topic is the verb/event *per se*, without aspects)

(14) Right dislocation (of verbs)
Aaming **ngo-dou** wan laa3 **ngo**-*(**dou**).
Aaming hungry-RES dizzy SFP hungry-RES
'Aaming is so hungry that he feels dizzy.' (Cheung 2015:229)

2.3 ❸ Mandarin P-to-V incorporation

- In Mandarin ditransitives with a direct object (DO) and a PP indirect object (IO):
  ➜ the preposition incorporates to the verb when the DO is moved out (Li 1990; Feng 2019)
  – General to all ditransitive verbs that take a PP IO (other examples: *song* 'give' + *gei* 'to' IO)

(15) a. Ta **fang-le** [zhe-ben shu] [zai zhuozi-shang]. (**V-suffix** + DO + P-IO) [M]
3SG put-PFV this-CL book at table-top
'S/he put this book on the table.'

b. [Zhe-ben shu], ta {**fang**-zai-**le**/ ***fang-le** zai} [zhuozi-shang]. (DO + **V**-P-**suffix** + IO) [M]
this-CL book 3SG put-at-PFV put-PFV at table-top
'This book, s/he put on the table.'

- **View** ①: P-to-V incorporation is **unexpected**
  – V-suffix is an integral unit: P cannot "move" to in-between them in syntax
  – It must posit that *fang-zai* is listed as a distinct entry from *fang* in the lexicon
  ➜ leads to undesirable duplicated listing
  – Also wrongly predicts **fang-le zai DP* to be grammatical in (15b)[4]
- **View** ②: P-to-V incorporation is derived
  – V and suffix are different terminals
  – P can move to V, and then to Asp (see Feng 2019 for triggers related to Nuclear Stress assignment)

(16) i. ... $[_{AspP}$ ***-le*** $[_{VP}$ ***fang***-zai $[_{PP}$ ~~*zai*~~ IO]]] ➜ ii. ... $[_{AspP}$ ***fang***-zai-***le*** $[_{VP}$ ~~***fang***-*zai*~~ $[_{PP}$ ~~*zai*~~ IO]]]

4. An additional issue is that Cantonese lacks such P-to-V incorporation:

(i) [Ni-bun syu], keoi {***fong**-hai-**zo**/ **fong-zo** hai} [toi soengmin]. (DO + **V-suffix** + P + IO) [C]
this-CL book 3SG put-at-PFV put-PFV at table top
'This book, s/he put on the table.'

Under View ①, one must posit that Cantonese accidentally lacks all the entries of V-P compounds, which is surprising given that the two languages do not differ in all other types of compounds qualitatively (e.g., Tang 2014). It also misses a generalization that can be otherwise captured under View ② by proposing the lack of P-to-V head movement in Cantonese.

2.4 ❹ Cantonese separable verbs

- Disyllabic verbs in Cantonese allow suffixes and phrases to separate the 1st syllable from the 2nd one (Chan and Cheung 2020; Lee and Yip 2025, 2026b)
  - Not infixation (morphology): phrases can intervene between the two syllables
  - Not Verb-Object (VO) phrase reanalysis (Chao 1968 *et seq.*): separation of monomorphemic verbs (*oukei* 'okay') is possible

(17) a. Keoi **oukei**-zo [saam ci].
3SG okay-PFV three time
'S/he agreed three times.'

b. Keoi **ou**-zo [saam ci] **kei**. [C]
3SG okay-PFV three time okay
'S/he agreed three times.'

- See Lee and Yip (2025) for extensive arguments that the separate syllables in Cantonese are not VO-phrases, but **reduced ("partially deleted") copies of verbs**[5]
  - E.g., The 2nd syllable cannot be modified with adnominal marker *ge*, unlike genuine VO phrases

(18) Adnominal *ge* modification

a. *Baseline: VO phrases* [C]
tai-zo saam-jat (ge) [**siusyut**]$_{Obj}$
read-PFV 3-day GE novel
'read novels for 3 days'

b. **so**-zo saam-jat (*ge) **wi**
sorry-PFV 3-day GE sorry
'say sorry (apologize) for 3 days'

- **View** ①: Separation is **unexpected**
  - If *ou* and *kei* are analyzed as part of the same verb ...
    ➜ A phrase could not be "inserted" between sub-head syllables of a root in syntax
  - If the two syllables are analyzed as different verbs/words ...
    ➜ Neither *ou* nor *kei* (in the sense of 'okay') are independent morphemes
  - **Ou-zo* 'agreed' is ill-formed elsewhere; its grammaticality in (17b) is puzzling
- **View** ②: Separation is **allowed** as the two syllables belong to **different copies**
  - V-to-Asp movement in syntax creates different copies
  - Subsequent "distributed" deletion renders both copies realized partially (Lee and Yip 2025)[6]

(19) i. [$_{AspP}$ -*zo* [$_{VP}$ [$_{FreqP}$ *saam ci*] [***oukei***$_{V}$]]] ➜ ii. [$_{AspP}$ ***ou*** ~~*kei*~~$_{V}$-zo [$_{VP}$ [$_{FreqP}$ *saam ci*] [~~*ou*~~***kei***$_{V}$]]]

- The partial deletion analysis is not compatible with View ①
  - View ① denies *overt* V-to-Asp movement in syntax (e.g., Huang, Li, and Li 2009, see §4)
  - Even with it, the lower copy would involve discontinuous deletion of non-constituents:

(20) <*ou*~~*kei-zo*~~> ... <~~*ou*~~*kei*~~-zo~~>
➜ not allowed in standard theory of chain linearization (e.g., Nunes 1995:279; van Urk 2018; also impossible in ellipsis, e.g., Sag 1976; Merchant 2001; Sailor & Thoms 2014)

5. It is important to note that Mandarin separable verbs do exhibit VO-phrase like properties, which require a different analysis (e.g., Pan and Ye 2015). See Lee and Yip (2026b) for more discussion on parametric variation between the two languages.
6. This is a simplification. Lee and Yip (2025) propose that the higher copy undergoes morphophonological syllable subtraction triggered by the suffixes, followed by complementary partial deletion on the lower copy.

3 Head movement in syntax

- The four arguments suggest that verbs and aspectual suffixes should be **different syntactic terminals**

➜ The derivational view is superior to the lexicalist view

	View ①	**View ②**
Status of V-suffix:	V^0	V^0 + Asp^0
Deriving ...		
❶ Mirror Principle effects	✘$_{\text{stipulation}}$	✔
❷ Verb doubling	✘	✔
❸ Mandarin P-to-V incorporation	✘	✔
❹ Cantonese separable verbs	✘	✔

Table 1: Comparison between the lexicalist view ① and the derivational view ② of Chinese verbal suffixation

- But how does the verb combine with the suffix?
  - Head movement in syntax (Tang 1998, 2003; Tsai 2001, 2008; Lee 2024; cf. Koopman 1984; Matushansky 2006; Arregi and Pietraszko 2021)
  - Lowering in PF
    (Cheng, Yi, and Xiong 2016; cf. Embick and Noyer 2001; Arregi and Nevins 2012; Harizanov and Gribanova 2019)

(21) [$_{\text{AspP}}$ **V**-Asp [$_{\text{VP}}$ ~~V~~ ...]] (HM in syntax) (22) [$_{\text{AspP}}$ ~~Asp~~ [$_{\text{VP}}$ V-**Asp** ...]] (Lowering in PF: *rejected*)

- They derive ❶–❸ equally ...
- Key difference: whether **copies** are created
  ➜ YES by syntactic movement (cf. The Copy Theory of Movement, Chomsky 1995; Nunes 1995, 2004; Bošković 2007)
  but NO by post-syntactic operations

Not post-syntactic operations in PF

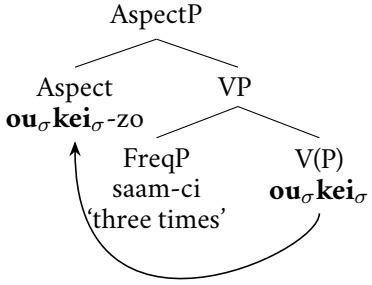
- Lowering in PF like (22) **does not create verb copies**
  ➜ Cannot account for ❹ separable verbs where two reduced copies are pronounced in Asp and V
  ➜ The correct word order cannot be derived too (i.e., **saam ci oukei-zo*)

(23) i. [$_{\text{AspP}}$ *-zo* [$_{\text{VP}}$ [$_{\text{FreqP}}$ *saam ci*] [***oukei***$_{\text{V}}$]]] ➜ ii. [$_{\text{AspP}}$ ~~-zo~~ [$_{\text{VP}}$ [$_{\text{FreqP}}$ *saam ci*] [**oukei**$_{\text{V}}$-zo]]]

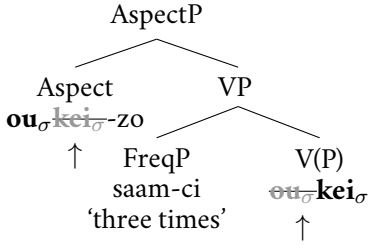
- We thus suggest that verb suffixation—at least in Chinese—is formed by **syntactic head movement**

(24) The derivation of separable verbs (Lee and Yip 2025)

a. *Syntax: Verb movement to Aspect head*



b. *PF: Distributed deletion (2 steps, simplified)*



4 Revisiting the lexicalist arguments

- We suggest that the lexicalist arguments do not challenge the derivational view with close scrutiny

(25) a. Manner adverb placement
b. Aspect lowering *(☚ see Appendix)*

Manner adverb placement

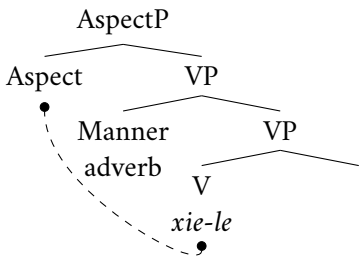
- One major argument by the lexcalists is that Chinese, unlike French (Pollock 1989), disallows adverbs to follow verbs, as in (27) with manner manner adverbs
- This has been interpreted as the lack of verb movement to Asp above manner adverbs (Cheng 1989; Gu 1993; Huang, Li, and Li 2009)

(26) French V-to-T movement and adverb placement
a. Je **mange** souvent ~~mange~~ des pommes.
I eat often of.the apples
'I often eat apples.'
b. *Je souvent **mange** des pommes.

(27) Manner adverbs cannot be placed after the verb in Chinese
Zhangsan {hen kuaide} **xie-le** {*hen kuaide} yi-feng xin. (PFV > quickly) [M]
Zhangsan very quickly write-PFV very quickly one-CL letter
'Zhangsan quickly wrote a letter.' (Gu 1993, p.72)

- The lexicalist list view takes the illicit verb-adverb order to be evidence against verb movement. The suffix must not be "picked up" in the overt syntax.

(28)



☚ This argument assumes that manner adverbs only attach to v/VP below the licensing Asp head.

- **However**: manner adverbs **can scope over the suffixes**
  ➜ Manner adverbs can indeed attach above AspP[7]
  - Cases where manner adverbs must take wide scope

(29) Aaming **zingzinggai** hok-faan jatman. [C]
Aaming secretly learn-again Japanese
'Aaming learns Japanese again secretly.'
a. #**again > secretly**: the second time to learn Japanese secretly
b. **secretly > again**: the second time to learn Japanese, and this time, secretly

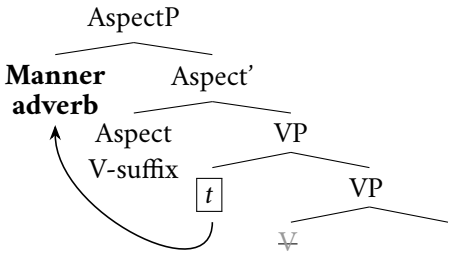
  - Cases where manner adverbs can either take wide or narrow scope

(30) Aaming **jat-daam** sik-maai ni-faai kukkei. [C]
Ming one.bite eat-also this-CL cookie
a. 'Ming ate (something in one bite, and) this cookie in one bite too.' (total: 2 bites) (Narrow: also > in 1 bite)
b. 'Ming ate this cookie and other stuff together in one bite.' (total: 1 bite only) (Wide: in 1 bite > also)

7. We use focus/quantificational suffixes for clearer scopal interaction with manner adverbs. Note that they compete with aspectual suffixes for the same slot (except for *-saai*, see §2.1) and should also be analyzed as projecting at AspP. Tang (2003) proposes that these suffixes project higher than AspP (labeled as "XP"), which is still compatible with the claim here.

- We suggest that the adverb moves from v/VP to AspP (or higher), and may optionally reconstruct for narrow scope
  (cf. Liu and Yip 2026 for reconstruction of *you* 'again' in Mandarin)
  - Wide scope manner adverbs: No reconstruction, (29)
  - Narrow scope manner adverbs: Reconstruction, (27)
  - Ambiguous scope: Optional reconstruction, (30)

(31) Manner adverb movement and reconstruction (reconstruction indicated by boxes)



5 Conclusion

Summary of the talk

- **Goal**: We argued for the derivational view ② over the lexicalist view ① of Chinese verbal suffixation
- We offered novel arguments to demonstrate that verbs and suffixes must enter syntax as **separate heads**
- We further showed that verbs undergo **V-to-Asp head movement in syntax** to suffixes, rather than Asp-to-V Lowering in PF
- We revisited the lexicalist arguments and suggested that the patterns **can be derived under View ②** without stipulations
- **Upshot**: The findings support the idea that syntax is the only generative engine (following DM).

- **Implications**
- Verb-resultative compounds should also be derived syntactically: evidence from verb doubling

➜ Both **verbal compounds** and **verbal suffixation** are derived by syntax

(32) {**Sik**/ baau/ sik-baau}, keoi hai jiging **sik**-baau-zo ge2.
eat full eat-full 3SG be already eat-full-PFV SFP
'As for eating/ becoming full/ eating and becoming full, s/he has already eaten and become full.'
(Yip 2025b:21–22)

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Appendix: Aspect lowering

- Aspect lowering (also called experiential lowering) refers to the scope mismatch where aspectual suffixes like experiential *-guo* in Mandarin, when appearing in a nonfinite clause, take scope over the matrix predicate (Li 1985, 1990; C.-T. J. Huang 1989, 2022; Grano 2014; N. Huang 2018; Liu and Yip 2026)

(33) Zhangsan (congqian) quan Lisi [jie-**guo** yan].
Zhangsan before urge Lisi quit-EXP cigarette
* Narrow scope: 'Zhangsan urged Lisi to have quit smoking (before).'
Wide scope: 'Zhangsan has (before) urged Lisi to quit smoking.' (C.-T. J. Huang 2022:32)

- Standard approach: **the lexicalist view** ① + Agree with Asp
  - Verbal suffixes are base-generated with the verbal root as a lexical V^0 in the syntax
  - The suffixed verbs agree with Asp^0 across (nonfinite) clause boundaries ➜ acquiring matrix scope

(34) $[_{AspP_{matrix}}\ Asp_{[EXP]}\ [_{vP_{matrix}}\ V \ldots [_{vP_{embedded}}\ V\text{-}guo_{[EXP]} \ldots$ (N. Huang 2018:360)

- Aspect lowering **can be derived by the derivational view** ②, as long as the suffixes themselves do not carry the aspectual semantics

☚ Also (implicitly) assumed in the lexicalist view: Asp^0, but not the suffix, carries aspectual semantics

  - We assume that verbal suffixes project AspP and agree with an aspectual operator in the specifier position, which carries aspectual semantics (cf. temporal OP in temporal adverbial clauses)

(35) $[_{AspP}\ OP_{Asp\text{-}EXP}\ [_{Asp'}\ \textit{-guo}\ [_{VP}\ V \ldots$

  - In the case of Aspect lowering, the aspectual operator is only merged in the martix SpecAspP (but not in the embedded SpecAspP due to aspectual conflicts in non-finite contexts)
    ➜ Aspect agreement across non-finite clauses
    ➜ Matrix aspect scope

(36) $[_{AspP_{matrix}}\ OP_{Asp\text{-}EXP}\ [_{Asp'}\ \varnothing\ [_{VP_{matrix}}\ V \ldots\ [_{AspP_{embedded}}\ [_{Asp'}\ \textit{-guo}_{[EXP]} \ldots$