Adverbial clauses with and without operator movement*

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1. Introduction
1.1. Background: the typology of adverbial clauses
➢ Cross-linguistically, adverbial clauses typically behave in two distinct ways, categorized as central adverbial clauses (CACs) and peripheral adverbial clauses (PACs).
  • The terms “central” and “peripheral” were intended to capture adverbial clauses’ degree of integration into main clauses (i.e. external syntax).
  • Recent studies reveal that CACs and PACs fundamentally differ in their derivational history (i.e. internal syntax), specifically, the presence/absence of operator (OP) movement (Haegeman 2010a, b, 2012, i.a.).
    ▫ Some arguments for OP movement in temporal when- and conditional if-clauses:
      - High-low ambiguities in temporal clauses (e.g. John left when Sheila said he should leave)
      - Intervention by high modals and adverbs (e.g. *If George probably comes)
      - Intervention by Argument fronting (e.g. *If these exams you don’t pass)
      - Intervention by VP preposing (e.g. *If passed these exams you had)
  • The semantic class of adverbial clauses is said to align with a cluster of properties of internal syntax and external syntax.
    ▫ A dichotomy: central—peripheral
    ▫ A three-way correlation: semantic class—internal syntax—external syntax

(1) [Whileconc OPin-situ this ongoing lawsuit probably won’t stop the use of lethal injection], it will certainly delay its use [whiletemp OP the Supreme Court top decides what to do].

(adapted from Haegeman 2009:399)

• CACs: temporal while-clause:
  ▫ Semantic class: temporal modification, related to event structure
  ▫ Internal syntax: movement of temporal OP \(\rightarrow\) intervened by epistemic adverbs
  ▫ External syntax: more integrated to the main clause, low attachment site
• PACs: concessive while-clause:
  ▫ Semantic class: concession/background assumption, related to discourse structure
  ▫ Internal syntax: No OP movement \(\rightarrow\) no interaction with epistemic adverbs
  ▫ External syntax: less integrated to the main clause, high attachment site

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The central-peripheral dichotomy of adverbial clauses (Haegeman 2003a, b, 2010a, b, 2012)\(^1\)

<table>
<thead>
<tr>
<th>Semantic class</th>
<th>Internal syntax</th>
<th>External syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CACs</strong></td>
<td><strong>OP movement</strong></td>
<td><strong>Attach low to vP/IP</strong> (subordination)</td>
</tr>
<tr>
<td>Event-related</td>
<td>(2003: impoverished)</td>
<td></td>
</tr>
<tr>
<td>e.g. temporal, event conditional, event reason, purpose</td>
<td></td>
<td></td>
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<tr>
<td><strong>PACs</strong></td>
<td><strong>No OP movement</strong></td>
<td><strong>Attach high to full CP</strong> (coordination)</td>
</tr>
<tr>
<td>Discourse-related</td>
<td>(2003: articulated)</td>
<td></td>
</tr>
<tr>
<td>e.g. inferential/rationale, premise conditional, contrast, concessive</td>
<td></td>
<td></td>
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</tbody>
</table>

- The central-peripheral typology is attested in various (unrelated) languages:

(3) The central-peripheral typology is attested cross-linguistically

c. Cantonese (Yip 2019, 2021) (for adverbial clauses with converbs)
d. Akɔɔse (Zentz 2011)
e. Bulgarian (Laskova 2012)
f. French (Lahousse 2010, Lahousse & Borremans 2014)
g. German (Frey 2012, Frey & Truckenbrodt 2015)
h. Greek (Tsimpli, Papadopoulou & Mylonaki 2010)
i. Japanese (Endo 2012)
j. Swedish (Müller 2017)

1.2. Our central claims

- We argue that the **internal syntax** of adverbial clauses does **not** correlate with the **semantic class** of adverbial clauses. Specifically, we argue that

  (i) **both CACs and PACs may be derived by OP movement**, and

  (ii) **both CACs and PACs may involve **no OP movement**

- That is, the **presence/absence of OP movement** does **not** correlate with the often assumed central-peripheral dichotomy regarding adverbial clauses’ semantic classes.

(4) Both **central** and **peripheral** adverbial clauses employ two strategies for derivation

a. **MOVEMENT strategy**: OP merges at a lower position and moves to the edge of CP

   [Adv-Clause \( \text{OP} \) [C \( \ldots \) [ \( \ldots \ t \ldots \)]]]

b. **IN-SITU strategy**: OP directly merges at the highest CP

   [Adv-Clause \( \text{OP} \) [C \( \ldots \) [ \( \ldots \)]]]

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\(^1\) Haegeman (2012) suggests three possibilities for the internal derivation of PACs: (i) OP directly merges at the CP and stay in-situ (= (4)b below); (ii) the OP does move but the base-generation site is too high for any elements to intervene; (iii) no OP is generated at all. We advocate for the first option. The second option would undesirably predict PACs to have high-low ambiguities just like *when*-clauses. The third option can be ruled out by converbal agreement in Cantonese, where intervention effects are found in PACs with a converb that agrees with an OP (Yip 2019).
Substantiated by two types of CACs in Mandarin Chinese, with cross-linguistic support:

- **Temporal adverbial clauses:**
  - Manifested as different subordinators: *zai* ‘at’ vs. *dang* ‘at, while’
- **Event conditional clauses:**
  - Manifested as different positions of subordinators: inner *ruguo* vs. outer *ruguo* ‘if’
- And by PACs like inferential clauses as well.

**Roadmap:**
- §2: CACs: Temporal clauses
- §3: CACs: Event conditional clauses
- §4: PACs: Inferential clauses and beyond
- §5: Concluding remarks

2. **Temporal clauses with and without operator movement**

- **Overview** Two types of temporal adverbial clauses (TACs)
  - With OP movement: formed by *zai* ‘at’
  - Without OP movement: formed by *dang* ‘at, while’

(5) *Zai*-TACs with operator movement:
\[zai \, [CP \, OP_{temp} \, [C \ldots [TP \, t \ldots]]]\]
(Base-generate at the edge of TP and MOVE to Spec,CP)

(6) 在 [张三正在睡觉] 的时候，李四来找他
\[Zai \, [Zhangsan \, zhengzai \, shuijue] \, de \, shihou, \, Lisi \, lai \, zhao \, ta\] (zai-TACs)
ZAI Zhangsan PROG sleep MOD time Lisi come find 3SG
‘Lisi came find Zhangsan when he was sleeping.’

(7) *Dang*-TACs with operator base-generated at CP\(^2\)
\[dang \, [CP \, OP_{temp} \, [C \ldots [TP \, t \ldots]]]\]
(Base-generate at the highest Spec,CP and stay IN-SITU)

(8) 当 [张三正在睡觉] 的时候，李四来找他
\[Dang \, [Zhangsan \, zhengzai \, shuijue] \, de \, shihou, \, Lisi \, lai \, zhao \, ta\] (dang-TACs)
DANG Zhangsan PROG sleep MOD time Lisi come find 3SG
‘Lisi came find Zhangsan when he was sleeping.’

2.1. **The high-low ambiguity**

- Also found in Mandarin Chinese for *zai*-TACs (Liou 2003)
- Crucially, we observe that *dang*-TACs do not have such high-low ambiguity

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\(^2\) In (7), both *zai* and *dang* are outside of the adjunct CP. While *zai* is a preposition, *dang*, however, is likely to be a subordinator at the C head (see Appendix A for the evidence). That is, the derivation of (7) may alternatively be (i):

(i) *Dang*-TACs with operator base-generated at CP and *dang* as C
\[ [CP \, OP_{temp} \, [C-dang \ldots [TP \ldots]]]\]
Since the categorical status of *dang* does not directly bear on differentiating between the two types of TACs, we still adopt (7) for notational convenience. For a different view that *dang* is a preposition, see Pan and Paul (2018).
• **zai-TACs:** High-low construals (Liou 2003)
  ✓ High construal (pragmatically odd but possible): I have lived thousands of years
  ✓ Low construal: I’m alive in 2012, precisely December 21 2012

(9) **Low construal favoring context in zai-TACs**

在[玛雅人预言 [世界会毁灭] ]的时候，我还活着。


i. ‘I’m still alive at the time when the Maya people made the apocalyptic prophecy.’ (high)
   ii. ‘I’m still alive at the time when the Maya people predicted the end of the world.’ (low)

- Island sensitivity → the high-low construals are the result of movement
  ✓ High construal, ✗ Low construal

(10) **Complex NP island in zai-TACs**

#在[玛雅人说 [世界会毁灭] 的预言]的时候，我还活着。

#Zai [Maya people say [世界会毁灭] prophecy] de shihou, wo hai huo zhe.

ZAI Maya.ppl. say world will destroy MOD prophecy MOD time 1SG still alive

#‘I’m still alive at the time when Maya people made the apocalyptic prophecy.’ (only high reading)

• **dang-TACs:** Lack of low construals (even in non-island contexts)
  ✓ High construal, ✗ Low construal

(11) **Low construal favoring context in dang-TACs**

#当[玛雅人预言 [世界会毁灭] ]的时候，我还活着。

#Dang [Maya people say [世界会毁灭] ] de shihou, wo hai huo zhe.

DANG Maya.ppl. say world will destroy MOD time 1SG still alive

#‘I’m still alive at the time when Maya people made the apocalyptic prophecy.’ (only high reading)

• The asymmetry in high-low ambiguities between zai-TACs and dang-TACs can be explained by their different strategies of getting the operator to Spec,CP.
  - zai-TACs: MOVEMENT of OP, i.e. Base-generate in the lower clause and move to Spec,CP
  - dang-TACs: IN-SITU OP, i.e. Base-generate at the highest Spec,CP and no movement

(12) **The asymmetry in high-low ambiguities derived by the presence/absence of OP movement**

a. zai [OP temp [TP t_high Maya people predicted [TP t_low the world will end ...]] (high: local movement)

b. dang [OP temp [TP Maya people predicted [TP the world will end ...]] (low: successive cyclic movement)

(high: no movement)
2.2. **Operator movement and intervention effects**

- Operator movement is subject to intervention effects
  - Important diagnostics in Haegeman (2010)

(13) $X_{op} \ldots Z \ldots Y_{top}$

[Qu] $\ldots$ [Qu] $\ldots$ [Qu]

- Operator movement in Chinese has been proposed in at least two constructions (Huang 1982a, 1991, Aoun & Li 1993, Ernst 1994, P. Law 2006, *i.e.*):
  1. Why-questions (i.e. covert *wh*-movement), and
  2. A-not-A questions

  - Interveners: [Qu] quantificational elements
    1. Focus operators, e.g. “only”, “even”,
    2. Modals, e.g. “must”,
    3. Quantifiers, e.g. “everyone”, “someone”, “no one”,
    4. Negation “not”,
    5. Adverbs of quantification, e.g. “often”, etc.
  - Non-interveners: non-quantificational elements
    1. Locatives, e.g. “on the subway”,
    2. Temporals, e.g. “today”,
    3. *Wh*-nominals, e.g. “who”,
    4. Fronted argument (i.e. topics) (vs. Haegeman 2010a,b),
    5. Preposed VPs (vs. Haegeman 2010a,b), etc. *\(^3\)

- Some examples showing intervention effects in A-not-A questions:
  - Focus: $X \quad XP_{Foc} \ldots A$-not-A,
  - *A*-not-A... $XP_{Foc}$
  - Mods & modal adverbs: $X \quad Mod \ldots A$-not-A
  - *A*-not-A... Mod

(14) a. *只有张三[会不会]来？

*Zhiyou Zhangsan hui-bu-hui lai?

b. 会不会[只有张三]来？

hui-bu-hui zhiyou Zhangsan lai?

(15) a. *张三[一定]会不会来？

*Zhangsan yiding hui-bu-hui lai?

b. 张三是不是[一定会来？

shi-bu-shi Zhangsan yiding hui lai?

\(^3\) Unlike English, fronted arguments and preposed VPs do not trigger intervention effects in Chinese, see Appendix B. They are presumably derived by topicalization. Relatedly, topics in Italian also do not disrupt *wh*-movement (Rizzi 2004). Rizzi suggests that the [topic] feature is distinct from other A-bar features in Italian (i.e. not belong to [Qu]), as evidenced by that topic iteration is allowed in Italian, but not English. Since topics may also iterate in Chinese, the same explanation may apply to Chinese as well.
Quantifiers: ✗ QP… A-not-A
✓ A-not-A…QP

Negation: ✗ −…A-not-A
✓ A-not-A…−

(16) a. *很少人/没人会不会来?
   *hen shao ren/meiren hui-bu-hui lai?
   very few ppl./nobody will-NEG-will come
b. 会不会[很少人/没人]来?
   hui-bu-hui hen shao ren/meiren lai?
   will-NEG-will very few ppl./nobody come
   ‘Will very few people/nobody come?’

(17) a. *张三[不会]会不会来?
   *Zhangsan bu hui-bu-hui lai?
   Z. NEG will-NEG-will come
b. 张三会不会[不]来?
   Zhangsan [hui-bu-hui] bu lai?
   Z. will-NEG-will NEG come
   ‘Will Zhangsan not come?’

Intervention effects are found in zai-TACs only
No intervention effects in dang-TACs
• (High) Quantificational elements
• Focus, e.g. zhiyou ‘only’, shi ‘be’ clefting

(18) Focus: ✗ zai-TACs, ✓ dang-TACs
a. ??在只有张三考高分的时候，妈妈就很高兴
   ??zai [zhiyou-Zhangsan kao gaofen] de shihou, mama jiu hen gaoxing.
   ZAI only-Z. get high.score MOD time mum then very happy
b. 当只有张三考高分的时候，妈妈就很高兴
   dang [zhiyou-Zhangsan kao gaofen] de shihou, mama jiu hen gaoxing.
   DANG only-Z. get high.score MOD time mum then very happy
   ‘Mum was happy when only ZHANGSAN got a high score.’

Epistemic modals

(19) Epistemic modals: ✗ zai-TACs, ✓ dang-TACs
a. ??昨天在张三应该[yi]还在家的时候，有警察来找他
   ??zuotian zai [Zhangsan yinggaiEpi hai zai jia] de shihou, you jingcha lai zhaota ytd.
   ZAI Z. should still at home MOD time have police come find 3SG
b. 昨天当张三应该[yi]还在家的时候，有警察来找他
   zuotian dang [Zhangsan yinggaiEpi hai zai jia] de shihou, you jingcha lai zhaota ytd.
   DANG Z. should still at home MOD time have police come find 3SG
   ‘Yesterday, when Zhangsan probably was still at home, police came find him.’

4 Assuming ruguo ‘if’ as a quantificational element (e.g. it may existentially bind a wh-indefinite, Lin 2014), it also triggers intervention effects in zai-TACs but not dang-TACs:
(i) 当如果要表达一边….一边…..的时候，通常使用As/ as well as 喔! (from Internet)
   Dang [ruguo yao biaoda ‘yibian…yibian…’] de shihou, tongchang shiyong “As/ as well as” o!
   DANG if need express yibian…yibian… MOD time usually use as/ as well as
   ‘When we need to express the meaning of “yibian…yibian…”, we usually use “as” or “as well as”.’
(ii) *在如果要表达一边….一边…..的时候，通常使用As/ as well as 喔!
   *zai [ruguo yao biaoda “yibian…yibian…”] de shihou, tongchang shiyong “As/ as well as” o!
   ZAI if need express yibian…yibian… MOD time usually use as/ as well as
Note that quantificational elements that are low in the structure may occur in zai-TACs

- E.g. deontic modals, (post-subj.) lian ‘even’ focus, negation bu ‘not’, quantifiers (subj.), etc.

(20) Deontic modals

Yesterday, when Zhangsan ought to stay at home, he instead disappeared.

They would trigger intervention effects if they occur high:

e.g. epistemic yinggai ‘should’ (19)-(20) (cf. Lin 2012 & Tsai 2015 for modal positions)
e.g. pre-subject lian ‘even’ focus (cf. Chen 2020 for the two positions of lian ‘even’ focus)

(21) High vs. low lian ‘even’ focus

a. When Zhangsan even failed mathematics, the teacher became mad.

b. When Zhangsan even failed mathematics, the teacher became mad.

Crucially, these low quantificational elements block the low reading:

- High construal (I have lived thousands of years) vs. Low construal (I’m alive in 2012)

(22) Low lian ‘even’ focus blocks the low reading

I’m still alive at the time when Maya people even predicted the world to end.’ (only high reading)

(23) Deontic modals block the low reading

I’m still alive at the time when Maya people could make the apocalyptic prophecy.’ (only high reading)

(24) Quantifiers block the low reading

I’m still alive at the time when some Maya people made the apocalyptic prophecy.’ (only high reading)
(25) Negation blocks the low reading

在玛雅人还没预言世界会毁灭的时候，我还活着。

'I’m still alive at the time when Maya people hadn’t make the apocalyptic prophecy.' (only high reading)

• Explaining the differences between high vs. low [Qu] elements (e.g. ModEpi vs. ModDeo)
  - For mono-clausal zai-TACs,
    - The OP moves from the edge of TP to Spec,CP
    - ModEpi is higher than TP \(\rightarrow\) c-command OPtemp \(\rightarrow\) blocks movement
    - ModDeo is lower than TP \(\rightarrow\) does not c-command OPtemp \(\rightarrow\) does not block movement

(26) \[\text{CP } \text{OP}_{\text{temp} [+\text{Qu}]} \quad \text{ModEpi}_{ [+\text{Qu}]} \quad [\text{TP } t_{[+\text{Qu}]} \ldots \text{ModDeo}_{ [+\text{Qu}]} \ldots ]] \]

  (movement blocked by high [Qu]-elements only)

  - For bi-clausal zai-TACs with a low construal,
    - The lower OPtemp is always c-commanded by the low [Qu] elements in the upper clause
    - Intervention effects block the long-distance OP movement

(27) \[\text{hai } \text{CP } \text{OP}_{\text{temp} [+\text{Qu}]} \ldots [\text{TP } t_{\text{high} [+\text{Qu}]} \ldots \text{XP}_{\text{Foc}, \text{ModDeo}, \text{QP}, \text{Neg} } [+\text{Qu}]} \text{CP } \ldots \text{t}_{\text{low} [+\text{Qu}]} \ldots ]]] \]

  (high reading allowed)

  (low reading blocked)

• Taking stock:

(28) Asymmetries in intervention effects among the two types of TACs

<table>
<thead>
<tr>
<th>[Qu]-elements</th>
<th>Trigger intervention effects to …</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A-not-A strings?</td>
</tr>
<tr>
<td>Focus</td>
<td>YES</td>
</tr>
<tr>
<td>Modals</td>
<td>YES</td>
</tr>
<tr>
<td>Quantifiers</td>
<td>YES</td>
</tr>
<tr>
<td>Negation</td>
<td>YES</td>
</tr>
</tbody>
</table>

• Again, the asymmetries in intervention effects between zai-TACs and dang-TACs can be explained by their different strategies employed:

(29) The asymmetries in intervention effects derived by the presence/absence of OP movement

a. *hai \[\text{CP } \text{OP}_{\text{temp} [+\text{Qu}]} \ldots Z_{[+\text{Qu}]} \ldots [\text{TP } \ldots t_{[+\text{Qu}]} \ldots ]]] \]

  (block local or long-distance movement)

b. \[\text{dong } \text{CP } \text{OP}_{\text{temp} [+\text{Qu}]} \ldots Z_{[+\text{Qu}]} [\text{TP } \ldots ]]] \]

  (no movement to be blocked)
2.3. A cross-linguistic note: TACs in Cantonese and Hungarian

➢ The MOVEMENT vs. IN-SITU strategies also crosscut TACs in other languages

➢ Cantonese, another Chinese language (Yip to appear)

• \(\text{Hai} \) ‘at’, TACs vs. \(\text{Dong} \) ‘at, while’-TACs

• Asymmetries in high-low ambiguities:

(30) \{Hai/#dong\} 瑪雅人預言世界會毀滅嘅陣，我仲生勾勾。

\{Hai/#dong\} [Maangaajan jyujin [saigaai wui waimit]] gozan, ngo zung saangngaungau.
High: #‘I’m still alive at the time when Maya people made the apocalyptic prophecy.’ (hai, dong)
Low: ‘I’m still alive at the time when Maya people predicted to be the end of the world.’ (hai)

• Asymmetries in intervention effects (e.g. focus):

(31) \{Hai/#dong\} 係阿明瞓覺嘅陣，老師就發嬲。

\{*hai2 /OKdong\} [hai6 Aaming fangaau] gozan, lousi zau faatnau.
‘The teacher became mad when it was MING (but not someone else) that fell asleep.’

➢ Hungarian

• Two types of wh-expressions in TACs (Lipták 2005, Ürögdi 2009)

  ▷ Type I: With relative morphology \(a-\) REL-what-WHILE
  e.g. ameddig REL-what-WHILE ‘while’

  ▷ Type II: Without relative morphology \(a-\)
  e.g. miután what-AFTER ‘after’

• Type I: \(\text{wh-OP mi} \) merges low to relativize a time variable by OP movement

  ➢ detected by the relative morphology

• Type II: \(\text{wh-OP mi} \) merges high to relativize the whole IP/TP (+ head mvt. to P): No OP mvt.

• Asymmetries in high-low ambiguities:

(32) Addig maradok, [ameddig mondod [hogy maradjak]].

that-WHILE stay-1SG REL-what-WHILE say-2SG that stay-SUBJ-1SG
high: ‘I stay until the time you keep saying that I should say.’
low: ‘I stay until time t. You say I should stay until time t.’ (Lipták 2005:75)

(33) Azután indulok el [miután szólsz [hogy Péter elindult]].

that-AFTER leave-1SG PV what-AFTER tell-1SG that Péter left-3SG
high: ‘I leave after time t when you tell me that Péter has left.’
*low: ‘I leave after time t. You tell me that Péter left at time t.’ (Lipták 2005:75)

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5 Ürögdi (2009) also extends the account to English temporal while-clauses, which disallow low readings (Larson 1990) and may allow epistemic modal adverbs probably. Note that this departs from Haegeman (2009), who argues that temporal while-clauses are subject to intervention effects.

(iii) I didn’t see Mary in New York \([\text{while} \text{she said} \text{she was there} \])\.

High: ‘I didn’t see Mary in New York at the time of her utterance.’
*Low: ‘I didn’t see Mary in New York at the time that she claimed to be when she was there.’ (Larson 1990:174)

(iv) I didn’t dare go in \([\text{while} \text{John was (probably) in the room}]\). (Ürögdi 2009:164)
3. Event conditional clauses with and without operator movement


(33) [\[CP OP_{\text{world/irrealis}} [TP \ldots]]

- Overview: Two types of event conditional clauses

  - Without OP movement: formed by \textit{outer ruguo 如果“if”}
  - With OP movement: formed by \textit{inner ruguo 如果“if”}

(34) Outer \textit{ruguo} conditionals without operator movement:

[\[CP OP_{\text{world/irrealis}} \textit{ruguo} [TP \ldots]]

(35) 如果大家批评张三, 他会很生气。

\textit{ruguo dajia piping Zhangsan, ta hui hen shengqi.}

‘If everyone criticizes Zhangsan, he will be very angry.’

(36) Inner \textit{ruguo} conditionals with operator movement:

[\[CP OP_{\text{world/irrealis}} \textit{C} \ldots [TP XP \ldots \textit{ruguo t} \ldots]]

(37) 大家\textit{ruguo} 如果批评张三, 他会很生气。

\textit{dajia \textit{ruguo piping Zhangsan, ta hui hen shengqi.}}

everyone \textit{if criticize Z. 3SG will very angry}

‘If everyone criticizes Zhangsan, he will be very angry.’

3.1 Distributional properties of conditional \textit{ruguo}

- The existence of inner \textit{ruguo}

  - Pan & Paul (2018): A DP can precede \textit{ruguo} within the conditional adverbial clause

(38) 张三\textit{ruguo} 如果饿了, 他会去买东西的。

\textit{zhangsan \textit{ruguo e-le, ta hui qu mai dongxi de.}}

‘If Zhangsan is hungry, he will go and buy something.’ (Pan & Paul 2018: 135)

  - In addition to DPs, \textit{ruguo} can linearly follow various phrases and occur clause-internally.

(39) 如果明年张三在上海结婚, 他会邀请李四。

\textit{ruguo mingnian Zhangsan zai Shanghai jiehun, ta hui yaoqing Lisi.}

‘If Zhangsan gets married in next year, he will invite Lisi.’

b. 明年\textit{ruguo} 张三在上海结婚，他会邀请李四。

\textit{mingnian \textit{ruguo} Zhangsan zai Shanghai jiehun, \ldots\ldots}

‘If Zhangsan gets married in next year, he will invite Lisi.’
c. 明年张三如果在上海结婚，他会邀请李四。
   mingnian Zhangsan ruguo zai Shanghai jiehun, ……
   next.year Z. if in get.married

d. 明年张三在上海如果结婚，他会邀请李四。
   mingnian Zhangsan zai Shanghai ruguo jiehun, ……
   next.year Z. in if get.married

▶ Is inner ruguo the result of topicalization (cf. Pan & Paul 2018)?

(40) \[ \text{XP, ruguo \{TP \ldots t \ldots \}} \]
   - Inner ruguo is compatible with indefinite subjects, which cannot be topics.
     □ Indefinite DPs like dajia 大家‘everyone’, da-bufen ren 大部分人‘the majority of people’, hen-duo ren 很多人‘many people’ cannot be topics, but they are compatible with inner ruguo.

(41) *[大家/大部分人/很多人], 李四觉得 ti 会批评张三。
   *[dajia / da-bufen ren / hen-duo ren] Lisi juede, ti hui piping Zhangsan everyone big-part people very-many people L. think will criticize Z. Intended ‘Everyone/the majority/many people, Lisi thinks, will criticize Zhangsan.’

(42) a. 如果大家/大部分人/很多人批评张三，他会很生气。
   ruguo dajia / da-bufen ren / hen-duo ren piping Zhangsan, ta hui hen shengqi.
   if everyone big-part people very-many people criticize Z. 3SG will very angry ‘If everyone/the majority/many people criticize Zhangsan, he will be very angry.’

b. 大家/大部分人/很多人如果批评张三，他会很生气。
   dajia / da-bufen ren / hen-duo ren ruguo piping Zhangsan, …
   everyone big-part people very-many people if criticize Z.

   - NPI licensing (Lin 1996, 1998): indefinite \textit{wh} is compatible with inner ruguo
     □ In the case of inner ruguo, NPIs are c-commanded/licensed by a moved operator at LF

(43) a. [如果] 什么人/谁 [如果] 迟到了，你要告诉我。
   \{ruguo\} shenme ren / shui \{ruguo\} chidao-le, ni yao gaosu wo if what person who if late-PERF 2SG should tell 1SG ‘If anyone has been late, you should tell me.’ (Conditional reading)

b. 什么人/谁迟到了，你要告诉我。
   shenme ren / shui chidao-le, ni yao gaosu wo what person who late-PERF 2SG should tell 1SG ‘Who has been late, you should tell me.’ (Embedded question reading)

3.2 Inner ruguo and intervention effects

▶ English if-clauses lack certain main clause phenomena: high modals and adverbs are not allowed.

(44) a. *If they luckily/fortunately arrived on time, we will be saved.
    b. *If George probably comes, the party will be a disaster. (Haegeman 2010: 9, 22)
• High modal and adverbs in ruguo-clauses: \(X\) Mod/Adv…ruguo, \(\check{\text{ruguo}}\)…Mod/Adv

(45) a. \{\text{如果} \} 张三 \{\text{如果} \} 幸运地 \{\text{如果} \} 没受伤，李四会很高兴。
\{\text{ruguo}\} Zhangsan \{\text{ruguo}\} \text{kingyun-de} \{\text{ruguo}\} mei shoushang, Lisi hui hen gaoxing
if Z. if fortunately if NEG injured L. will very happy
‘If Zhangsan fortunately is not injured, Lisi will be very happy.’

b. \{\text{如果} \} 张三 \{\text{如果} \} 一定 \{\text{如果} \} 会迟到，我们应该提前做准备。
\{\text{ruguo}\} Zhangsan \{\text{ruguo}\} \text{yiding} \{\text{ruguo}\} hui chidao, women yinggai tiqian zuo zhunbei
if Z. if definitely if will late 1PL should beforehand do prepare
‘If Zhangsan definitely will be late, we should do some preparations beforehand.’

➢ Other interveners in A-not-A questions and zai-TACs: Quantifiers, Focus, Negation, etc. (see §2.2)
• The same set of elements also behave like interveners to inner ruguo but not outer ruguo
  ○ Quantifiers: \(X\) QP…ruguo, \(\check{\text{ruguo}}\)…QP

(46) \{\text{如果} \} 很少人/没人 \{\text{如果} \} 来，李四会很失望。
\{\text{ruguo}\} \text{hen shao ren/meiren} \{\text{ruguo}\} lai, Lisi hui hen shiwang.
if very few person/nobody if come L. will very disappointed
‘If very few people/nobody come(s), Lisi will be very disappointed.’

  ○ Focus: \(X\) XP\(_F\)…ruguo, \(\check{\text{ruguo}}\)…XP\(_F\)

(47) \{\text{如果} \} 只有张三 \{\text{如果} \} 来，李四会很失望。
\{\text{ruguo}\} \text{zhiyou Zhangsan} \{\text{ruguo}\} lai, Lisi hui hen shiwang.
if only Z. if come L. will very disappointed
‘If only Zhangsan comes, Lisi will be very disappointed.’

  ○ Negation: \(X\) \(\sim\)…ruguo, \(\check{\text{ruguo}}\)…\(\sim\)

(48) \{\text{如果} \} 张三 \{\text{如果} \} 不 \{\text{如果} \} 来，李四会很失望。
\{\text{ruguo}\} Zhangsan \{\text{ruguo}\} \text{bu} \{\text{ruguo}\} lai, Lisi hui hen shiwang.
if Z. if NEG if come L. will very disappointed
‘If Zhangsan doesn’t come, Lisi will be very disappointed.’

3.3 Another cross-linguistic note: Japanese moshi and Hindi agar
➢ moshi ‘if’ can also occur clause-internally in certain Japanese conditionals.

(49) \{moshi\} John-ga \{moshi\} Mary-ni choko-o age-tara, minna-ga odoroku
if J-NOM if M-DAT choco-ACC give-COND everyone-NOM be.surprised
‘If John gives chocolates to Mary, everyone will be surprised.’ (Modified from M. Yang 2020: 9)
Inner *moshi* is subject to intervention effects

- **Focus and quantifier** are interveners to in-situ wh-elements in Japanese (Tomioka 2007):

(50) a. ???Ken-

\[\text{NOM} \] nani-o yon-da-no?
Ken-only-NOM what-ACC read-PAST-Q
‘What did only Ken/Ken also read?’

b. ??Dareka-ga nani-o yon-da-no?
someone-NOM what-ACC read-PAST-Q
‘What did everyone/someone/Ken or Erika read?’

(Tomioka 2007: 2-3)

- **Focus:** X XP<sub>F</sub>...*moshi*, ✓ *moshi*...XP<sub>F</sub>

(51) \{moshi\} John-

\[\text{NOM} \] Mary-ni choko-o age-tara, minna-ga odoroku
if J-only-NOM if M-DAT choco-ACC give-COND everyone-NOM be.surprised
‘If only John gives chocolates to Mary, everyone will be surprised.’

- **Quantifiers:** X QP...*moshi*, ✓ *moshi*...QP

(52) \{moshi\} Dareka-ga \{*moshi\} Mary-ni choko-o age-tara, minna-ga odoroku
if someone-NOM if M-DAT choco-ACC give-COND everyone-NOM be.surprised
‘If someone gives chocolates to Mary, everyone will be surprised.’

- Hindi *agar* shows a similar pattern (Mahajan p.c.):
  - It may occur clause-internally:

(53) \{agar\} John \{agar\} kal \{agar\} Mary-ko chocolate de:, log bohot hēra:n hōge
if John if tomorrow if Mary-ACC chocolate give people very surprised will-be
‘If John gives chocolates to Mary tomorrow, people will be surprised.’

(Agarwal: p.c.)

- (For some speakers), focus behave like an intervener to inner *agar*:
  - **Focus:** X XP<sub>F</sub>...*agar*, ✓ *agar*...XP<sub>F</sub>

(54) \{agar\} John-hī \{*agar\} kal \{*agar\} Mary-ko chocolate de:, log bohot hēra:n hōge
if John-FOC if tomorrow if Mary-ACC chocolate give
people very surprised will-be
‘If only John gives chocolates to Mary tomorrow, people will be surprised.’

(Mahajan p.c.)
3.4 **Interim summary**

- Parallel to A-not-A and zai-TACs, inner ruguo consistently show intervention effects:
  - ✗ intervener … ruguo/A-not-A, ✓ ruguo/A-not-A … intervener

<table>
<thead>
<tr>
<th>[Qu]-elements</th>
<th>Trigger intervention effects to …</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>YES</td>
</tr>
<tr>
<td>Modals</td>
<td>YES</td>
</tr>
<tr>
<td>Quantifiers</td>
<td>YES</td>
</tr>
<tr>
<td>Negation</td>
<td>YES</td>
</tr>
</tbody>
</table>

- **Both** IN-SITU and MOVEMENT strategies are found in the internal syntax of CACs.

3.5 **Ruguo, if and islandhood**

- If ruguo involves operator (movement), do we expect to find island effects associated with it?
- In conditionals, ruguo adverbial clause is an island (Huang et al. 2009)
  - ruguo-clauses do not allow A-bar extraction.

(55) a. 如果张三踩雷, 李四会很失望。
    ruguo Zhangsan cai lei, Lisi hui hen shiwang
    if Z. step.on land.mine L. will very disappointed
    ‘If Zhangsan suffers a loss, Lisi will be very disappointed.’

b. *如果张三不踩雷, 李四会很失望?
   *ruguo Zhangsan cai-bu-cai lei, Lisi hui hen shiwang?
   if Z. step.on-NEG-step.on land.mine L. will very disappointed
   Intended ‘Will Lisi be very disappointed if Zhangsan suffers a loss, or if Zhangsan doesn’t suffer a loss?’

- A ruguo clause is not a dependent/adverbial clause on its own

(56) a. 他们假设了 [{if ruguo}张三{if ruguo}会踩雷]。
    tamen jiashe-le [{(ruguo)} Zhangsan {(ruguo)} hui cai lei].
    3PL hypothesize-PERF if Z. if will step.on land.mine
    ‘They hypothesized that Zhangsan would take a loss.’

b. 他们会考虑 [{if ruguo}张三{if ruguo}踩雷] 的情况。
    tamen hui kaolv [{(ruguo)} Zhangsan {(ruguo)} cai lei ] de qingkuang
    3PL will consider if Z. if step.on land.mine DE situation
    ‘They will consider a situation in which Zhangsan takes a loss.’
• Merging *ruguo creates an island outside adjunct configurations

(57) a. 他们假设[[*如果] 张三[*如果] 会不会踩雷]? 
    tamen jiashe [(ruguo) Zhangsan (ruguo) hui-bu-hui cai lei]? 
    3PL hypothesize if Z. if will-NEG-will step.on land.mine
   ‘Do they hypothesize that Zhangsan will take a loss or Zhangsan will not take a loss?’
b. 那个[他们假设[[*如果] 张三[*如果] 会踩雷]]的雷?
   na ge [tamen jiashe [(ruguo) Zhangsan (ruguo) hui cai ]] de lei
   that CL 3PL hypothesize if Z. if will step.on DE land.mine
   ‘the loss x such that they hypothesize that Zhangsan would suffer x’

• English if outside conditional configurations

(58) a. RobJ1981 asked us to imagine [if this were a DVD list].
b. (?) The Man in the High Castle asked us to imagine [if Germany had won WWII].
   ○ if seems to block wh-extraction as well

(59) a. *Which war; did The Man in the High Castle ask us to imagine [if Germany had won t]?
b. Which war; did The Man in the High Castle ask us to imagine [that Germany had won t]?

4 Extensions: Peripheral adverbial clauses

➤ In fact, the MOVEMENT strategy is also involved in some PACs.
• Mandarin “inferential clauses” involving *jiran 既然 ‘since’ (Pan & Paul 2018’s terminology):
  ○ Semantic class: discourse-related (#event reasons)
  ○ External syntax: attach high: main clauses at the speech act level (e.g. an imperatives with a SFP ba), a characteristic of PACs. (see also Wei & Li 2018)
  ○ Internal syntax: *jiran can occur clause-initially (=outer) and clause-internally (=inner).

(60) {既然} 大家{既然} 时间冲突，那取消会议吧。
    {jiran} [kajiä] {jiran} shijian chongtu, na quxiao huiyi ba.
     since everyone since time conflict then cancel meeting SFP.IMP
     ‘Since everyone’s schedule conflicts (with each other), then (you should) cancel the meeting.’

• Inner *jiran and intervention effects
  ○ Only outer but not inner *jiran is compatible with ‘only’, suggesting the existence of operator movement in the internal syntax of inferential clauses formed with inner *jiran; while outer *jiran involves IN-SITU OP.

(61) {既然} 只有张三{既然} 来，那取消会议吧。
    {jiran} [zhiyou-Zhangsan] {jiran} lai, na quxiao huiyi ba.
     since only-Z. since come then cancel meeting SFP.IMP
     ‘Since only ZHANGSAN came, then (you should) cancel the meeting.’
Similar contrasts are also found in other PACs, e.g. concessive *suiran* 虽然 ‘although’ clauses.

*Both* **IN-SITU** and **MOVEMENT** strategies are found in the internal syntax of **both** CACs and PACs.

(62) A typology of the internal syntax of CACs and PACs

<table>
<thead>
<tr>
<th></th>
<th>CACs</th>
<th>PACs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Temporal</td>
<td>Conditional</td>
</tr>
<tr>
<td><strong>IN-SITU</strong></td>
<td><em>dang</em>-TACs</td>
<td><em>Outer ruguo</em></td>
</tr>
<tr>
<td><strong>MOVEMENT</strong></td>
<td><em>zai</em>-TACs</td>
<td><em>Inner ruguo</em></td>
</tr>
</tbody>
</table>

5 **Concluding remarks**

- The existence/absence of operator movement is **not** a syntactic correlate of the CAC vs. PAC dichotomy.
- CACs like *dang*-TACs and outer-*ruguo* conditionals do **not** involve OP movement;
- PACs like inner-*jiran* inferential clauses may also involve OP movement.

(63) CACs with and without OP movement

**a. Temporal clauses: zai vs. dang**

\[ \text{zai} \left[ \text{CP OP}_{\text{temp}} \left[ \text{C} \ldots \left[ \text{TP} \ t \ldots \right] \right] \right] \quad \text{vs.} \quad \text{dang} \left[ \text{CP OP}_{\text{temp}} \left[ \text{C} \ldots \left[ \text{TP} \ t \ldots \right] \right] \right] \]

**b. Event conditional clauses: inner vs. outer ruguo**

\[ \text{[CP OP}_{\text{world/irrealis}} \left[ \text{C} \ldots \left[ \text{TP} \ XP \ldots \text{ruguo} \ t \ldots \right] \right] \right] \quad \text{vs.} \quad \text{[CP OP}_{\text{world/irrealis}} \text{ruguo} \left[ \text{TP} \ldots \right] \]

(64) PACs with and without OP movement

**Inferential clauses: inner vs. outer jiran**

\[ \text{[CP OP}_{\text{inferential}} \left[ \text{C} \ldots \left[ \text{TP} \ XP \ldots \text{jiran} \ t \ldots \right] \right] \right] \quad \text{vs.} \quad \text{[CP OP}_{\text{inferential}} \text{jiran} \left[ \text{TP} \ldots \right] \]

- Supported by the correlation with **intervention effects**:
  - OP MOVEMENT \(\rightarrow\) Subject to intervention effects
  - IN-SITU OP \(\rightarrow\) No intervention effects

**Intervention effects** as strong evidence for OP MOVEMENT in adverbial clauses

- Previous proposals have been primarily based on data from **wh-ex-situ** languages\(^6\)
- Intervention effects offer strong support for OP MOVEMENT in **wh-in-situ** languages:
  E.g. Mandarin, Cantonese, Japanese
- The parallel in A-bar dependencies between **wh-in-situ** and **wh-ex-situ** languages extends beyond constructions like **wh-questions**, relative clauses, etc.

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\(^6\) E.g. English, German, Dutch, and West Flemish (Haegeman 2010a, b; Danckaert & Haegeman 2012), Serbo-Croatian (Arsenijević 2009), Polish (Tomaszewicz 2009), Akọse (Zentz 2011), French (Authier & Haegeman 2015), and Greek (Chatzopoulou 2019).
A unified internal syntax for various kinds of adverbial clauses

- Operators may freely merge low and high
  - Low → OP MOVEMENT strategy
  - High → IN-SITU strategy
- Also hints on the autonomy of syntax (i.e. OP mvt. does not align with semantic classes)

- Re-consideration of the central-peripheral dichotomy of adverbial clauses
  (cf. a finer typology in Endo & Haegeman 2019)
  - Misalignment between internal syntax and semantic classes
  - Any misalignment between internal and external syntax?7

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7 Temporal clauses seem to have the alignment, e.g. only zai-clauses but not dang-clauses may attach to main clauses below matrix subjects (see also Pan & Paul 2018).

(2) 妈妈[在/*当]张三考高分的时候]很高兴
   mum [at /* when Z. get high.score that.time] very happy
   ‘Mum was happy when Zhangsan got a high score.’

However, PACs like inferential clauses may not (i.e. both inner and outer jiran clauses attach to imperatives in §4).
References


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November 5-7, 2021


Yang, M. Y. (2020). *Moshí as a focus path to ‘if’ (and its relatives)*. Ms.


https://ling.auf.net/lingbuzz/006288


Appendix A: Evidence for *dang* as a subordinator at C

- There are three pieces of evidence supporting *dang* to be a subordinator at C rather than a preposition. First, *dang* may directly take a clause without *shihou*, whereas *zai* must occur with a head NP *shihou* ‘time’.

(65) {当/*在} [看到他的家人]，才知道他为何要当演员 (From Internet, with *zai* added)
{Dang/*zai} [kandaota de jiaren], cai zhidao ta weihe yao dangyanyuan
DANG ZAI saw 3SG MOD family then know 3SG why wantto.be actor
‘When I saw his family, I (finally) know that why he wanted to be an actor.’

- Second, *dang* also allows the bound morpheme *shi* ‘time’ to cliticize to the clause, which is degraded for *zai*.

(66) {当/??在} [他醒来] 时，恐龙还在那里 (From Internet, with *zai* added)
{dang/??zai} [ta xinglai] shi, konglong hai zai nali
DANG ZAI 3SG wake.up time dinosaur still at there
‘When he woke up, the dinosaur is still there.’

- Third, *dang* never takes a simple NP, as opposed to *zai*.

(67) {*当/在} [NP 星期天]
{*dang/ zai} [NP Xingqitian]
DANG ZAI Sunday
‘on Sunday’
Appendix B: Argument fronting and VP preposing do not trigger intervention effects in Chinese

- A-not-A does not interact with argument fronting or VP preposing.

(68) a. [自己的朋友]；张三会不会出卖 tī?
   \[\text{zijī de pengyou}, \text{Zhangsan} hui-bu-hui chumai tī?\]
   ‘Will Zhangsan betray self’s friends?’

   b. [出卖自己的朋友]；张三会不会 tī?
   \[\text{chumai ziji de pengyou}, \text{Zhangsan} hui-bu-hui tī?\]
   ‘Will Zhangsan betray self’s friends?’

- Similarly, inner-ruguo does not interact with argument fronting or VP preposing either.

(69) a. [自己的朋友]；{如果}张三{如果}肯定不会出卖 tī，我们可以信任他。
   \[\text{zijī de pengyou}, \{ruguo\} Zhangsan \{ruguo\} kending bu hui chumai tī,
   \text{women jiu keyi xinren ta}\]
   ‘If self’s friends Zhangsan definitely won’t betray, then we can trust him.’

   b. [出卖自己的朋友]；{如果}张三{如果}肯定不会 tī，我们可以信任他。
   \[\text{chumai ziji de pengyou}, \{ruguo\} Zhangsan \{ruguo\} kending bu hui tī,
   \text{women jiu keyi xinren ta}\]
   ‘If betray self’s friends Zhangsan definitely won’t, then we can trust him.’