# Extraction from adverbial clauses Cross-linguistic variation and general tendencies

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#### Outline

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**Problems** 

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Conclusion

#### Handout

If you prefer following from the handout, you can find it at this link:

https://shorturl.at/msAU3

Or you can scan this QR code:



#### Aims of this talk

#### This talk has two purposes:

- 1. Provide a cross-linguistic perspective on extraction from adverbial clauses (ACs);
- 2. Point out some problems in the current theories and provide a new-ish way to frame the problem.

## ACs and islands

#### The CED

Since Huang (1982)'s Condition on Extraction Domain (CED), adjuncts and subjects have been considered islands because they are not properly governed. Data like (1) inspired this generalization:

- (1) a. \*What does John go the cinema [after eating  $\_$  ]?  $\rightarrow$  Adjunct
  - b. \*Who [is that  $\_$  ] stuck in traffic was probable?  $\longrightarrow$  Subject
  - c. What did John devour [  $\_$  ]?  $\rightarrow$  Argument

#### Adjuncts are merged late

Adjuncts and subjects are not islands for the same reasons. Adjuncts, unlike subjects, are introduced at a later stage. This is supported by data that show that ACs do not reconstruct for Condition C (Bruening and Al Khalaf, 2019):

- (2) a. \*[Which picture of Harry<sub>i</sub>]<sub>j</sub> did he<sub>i</sub> frame  $t_j$ ?
  - b. [Which picture arranged by  $Harry_i$ ]<sub>j</sub> did  $Harry_i$ ]<sub>j</sub> (Stockwell et al., 2022)

Adjuncts do no reconstruct because they are introduced at a later stage in the derivation, via a special rule (Biskup, 2006; Hunter, 2010, 2015; Lebeaux, 1988; Stepanov, 2001; Sportiche, 2016, a.o.).

## Adjuncts are merged late (cont.)

- (3) a. What are you working so hard [in order to achieve \_ ]? (Truswell, 2007, p. 5)
  - b. What did John drive Mary crazy [whistling \_ ]? (Truswell, 2011)

The grammaticality of (3) was not predicted by the "later" theories. Thus, these data pose another problem: how to model the variability of islands effects in ACs.

# Empirical landscape

#### Temporal clauses

Temporal clauses are CACs. Extraction from them is almost always ungrammatical (Bondevik et al., 2021; Bondevik and Lohndal, 2023; Dal Farra, 2020; Müller, 2017; Namboodiripad et al., 2022; Nyvad et al., 2022).

## Temporal clauses (cont.)

(4) \* Chi Elisa è arrivata [dopo che Andrea ha incontrato \_ ]?
'Who did Elisa arrived [after Andrea met \_ ]?
(Dal Farra, 2020, p. 20)

- (5) \* Den filmen fick jag gå hem [efter att vi hade sett \_ ].

  'That movie I have to go home [after we have seen \_ ].'

  (Adapted from Müller 2017, p. 76)
- (6) \*The game, John is tense [before he plays \_ ], not the concert.

## Temporal/causal CACs

Temporal CACs do not allow any type of A-bar movement. One counterexample is in (7): there can be cases of grammatical relativization out of a tensed *before*-CAC in English:

(7) These are the pills that Mary died [before she could take  $\_$  ].

(Chaves, 2021, p. 691)

## Temporal/causal CACs (cont.)

When a causal reading/causal flavor is introduced, temporal CACs can allow extraction:

(8) Den filmen börjar man alltid gråta [efter att man har that movie start one always to-cry after that one has sett \_\_ ].

seen

'One always starts crying after having seen that movie.'

(Adapted from Müller 2017, p. 76)

## Temporal/causal CACs (cont.)

- (9) a. ? Quale persona Gianni sorride [quando vede \_ ]? 'Which person does Gianni smile at [when he sees \_ ]?'
  - b. Which person does John smile at [when he sees \_ ]?
- (10) ... el tipo [que los vecinos se enfadaron [cuando \_ tocó la guitarra eléctrica]].
  - '... the boy [whom the neighbours got upset with [when \_ played the electric guitar]].'

(Adapted from Fábregas 2013, p. 177)

### Temporal/causal CACs (cont.)

English *since* has both a causal and a temporal meaning (von Fintel and latridou, 2019, a.o.), making it very similar to (8-10), but it does not allow extraction:

- (11) a. John has been grinning maniacally [since meeting the evangelist].
  - b. \*Who has John been grinning maniacally [since meeting \_ ]? (Truswell, 2007, p. 133)

#### A counterexample

Ecuadorian Quechua allows topicalization out of a purely temporal ACs (data from Cole (1982), reported by Rubio Alcalá (2016, p. 26)):

(12) [Ruwana-ta-ka Marya randi-shpa-mi \_ ] Utavalu-pi Poncho-acc-top María buy-adv-val Otavalo-loc ka-rka. be-pst

'The poncho, when María bought it, she was in Otavalo.' ightarrow Extraction

In Ecuadorian Quechua this is possible only when the temporal CAC is topicalized, as signalled by the fact that it precedes the MC.

#### Causal clauses

Causal clauses can be CACs or PACs. They never allow extraction (Bondevik et al., 2021; Bondevik and Lohndal, 2023; Müller, 2017; Nyvad et al., 2022).

#### Causal clauses (cont.)

```
(13) *What is John sad [because he lost _ ]?
```

- (14) a. Ivan je [zapeo zato što nije video kamen].
  Ivan is fallen because the not seen rock
  'Ivan fell [because he did not see the rock].
  - b. \*Šta je Ivan [zapeo zato što nije video \_ ]?

    What did Ivan fall [because he did not see]?

[Serbo-Croatian]

### Causal clauses (cont.)

(15) \*Le sue scarpe preferite, Gianni è arrabbiato [siccome ha rovinato \_ ], non il suo maglione.

'His favourite shoes, Gianni is upset [since he ruined \_ ], not his jumper.'

#### A counterexample: Spanish

(16) a. A María, [como \_ le contaste esa historia], Juan se enfadó.

'María, since you told her that story, Juan got angry.' (Rubio Alcalá, 2016, p. 2)

b. Esa historia, Juan se enfadó [porque se That story, Juan get.angry.pst.3P because cl-her la contaste \_ a María].
 cl-it tell.pst.2P to María

'That story, Juan got angry because you told it to María.' (Rubio Alcalá, 2016, p. 7)

In (16a) the AC precedes the MC, while in (16a) it follows the MC. They also differ in what is being extracted: in (16a) the dative argument, in (16b) the object.

#### Purpose clauses

Extraction from purpose clauses is grammatical. Truswell (2007, 2011) reports data for English non-finite purpose CACs.

- (17) a. What is the flower open [to attract \_ ]? (Branan and Newman, 2022a, p. 5)
  - b. What did you tap your nose [in order to signal \_ to Mary ]? (Truswell, 2007, p. 125)

## Purpose clauses (cont.)

Extraction from finite purpose clauses is grammatical in Swedish (Müller, 2017), and in Czech (Biksup and Šimík, 2019) (18):

(18) To je řečník, [kterého [aby nalákali \_], museli by mít it is speaker wich.acc so.that attract must sbj have peníze].

money

'This is a speaker such that they need more money [in order to attract \_ ].'

(Biksup and Šimík 2019)

## Purpose clauses (cont.)

Italian also allows extraction from purpose CACs:

(19) a. Che cosa Gianni è stato sveglio tutta la notte [per finire \_ ]?

What did Gianni stay up all night long [to finish \_ ]?

b. Il primo volo, Maria si è alzata presto [per prendere
 \_ ], non il treno.

The first flight, Maria woke up early [to catch \_ ], not the train.

c. A Parigi si terrà la gara di atletica che Elena si allena ogni giorno [al fine di vincere \_ ].

'In Paris there will be the athletics competition that Elena works out every day [in order to win \_ ].'

#### Conditional clauses

Conditional ACs come in three sizes: CACs, PACs, and Non Integrated ACs (Haegeman and Schönenberger, 2023; latridou, 1991, a.o.). (20a) has a conditional CAC, (20b) a conditional PAC.

- (20) You should invite her for tea...
  - a. ...if you see her again.
  - b. ...if you like her so much. (Adapted from latridou 1991, p. 67)

Extraction from conditional CACs (or Event Conditionals, in latridou (1991)'s terms) is reported to be grammatical in a number of languages (Bondevik et al., 2021; Bondevik and Lohndal, 2023; Biksup and Šimík, 2019; Müller, 2017; Nyvad et al., 2022; Rubio Alcalá, 2016).

Spanish allows topicalization from an *if*-CAC, but not wh-movement:

```
(21) a. A María, [si le cuentas _ esa historia], Juan
          To María if CL-her tell.prs.2P that story Juan
            se enfadará.
               get.angry.fut.3P
          'María, [if you tell _ that story], Juan will get angry.'
          (Adapted from Rubio Alcalá 2016, p. 2)
      b. * Que [si cuenta _ ] Juan se enfadará?
      c. * Que Juan se enfadará [si cuenta ]?
          'What does Juan get angry [if he tells ]?'
```

Norwegian allows wh-movement out of conditional clause:

```
(22) Hva blir John syk [hvis han fortærer _ ]?

'What does John get sick [if he devours _ ]?' [Norwegian]
```

The case of English is more complex.

- (23) a. \*What do you worry [if John buys \_ ]? (Sprouse et al., 2016, p. 310)
  - b. What does John fall asleep [if he watches \_ ]?
  - c. \*What [does if he watch \_ ] John falls asleep?

Italian allows wh-extraction from (some) conditional CACs only if the wh-element is D-linked. Topicalization and relativization are also fine.

- (24) a. Quale programma Gianni si addormenta [se guarda \_ ]? 'Which TV show does Gianni fall asleep [if he watches \_ ]?
  - b. Masterchef, Gianni si addormenta [se guarda \_ ], non X-Factor.
    - 'Masterchef, Gianni falls asleep [if he watches \_ ], not X-Factor.'
  - c. Ho registrato il programma che Gianni si addormenta [se guarda \_ ]?.
    - 'I recorded the TV show that Gianni falls asleep [if he watches \_\_ ].'

Czech allows extraction from a left-adjoined AC (Biksup and Šimík, 2019), while a clause-final (right-adjoined) *if*-clause never allows extraction.

(25) a. Potkal člověka, [kterého [když poprosíš \_ ], tak to met man.acc which.acc when ask.2sg so it zařídí] arrange

'He met a man such that he/she/they will arrange it if you ask him'

b. \* Potkal člověka [kterého to zařídí [když poprosíš \_ ]] met man.acc which.acc it arrange when ask.2sg

(Biksup and Šimík, 2019)

Serbo-Croatian allows wh-extraction from the AC regardless of its position. It can follow (26a) or precede (26b) the MC, and extraction is grammatical.

- (26) a. Šta se Ivan oseća loše [ako (po)jede \_ ]?
  What cl.refl Ivan feels bad if eats
  'What does Ivan feel sick [if he eats \_ ]?'
  - b. Šta [ako (po)jede \_ ] se Ivan oseća loše?'What does [if he eat \_ ] Ivan feel sick?'

#### A further restriction

There is another contrast in extraction from conditional ACs:

(27) a. What does John fall asleep [if he watches  $\_$  ]? = (23b)

b. \*What does John snore [if he watches \_ ]?

This shows that simply being a CAC is not enough.

#### Concessive clauses

Extraction from concessive clauses is always ungrammatical. Müller (2017) tests extraction from Swedish PACs, which always leads to ungrammaticality (28). Italian concessive ACs (CACs and PACs) are opaque as well (29). In Spanish (Alcalá, 2016) there are some cases of a marginally acceptable extractions.

#### Concessive clauses (cont.)

Swedish does not allow extraction from a concessive clause:

(28) Det medlet dog mina blommor [fastän de hade fått \_ ]. that fertilizer died my plants although they had got 'My plants died even though I gave them this fertilizer.' (Müller, 2017, p. 78)

## Concessive clauses (cont.)

Similarly, Italian bans extraction from concessive ACs:

- (29) a. \* Che cosa Gianni è contento [anche se non ha passato \_\_ ]?
  - 'What is Gianni happy [even if he did not pass \_ ]?'
  - b. \* Che cosa Gianni ha ancora fame [pur avendo divorato \_ ]?
    - 'What is Gianni still hungry [despite having devoured \_ ]?'

#### Concessive clauses (cont.)

Spanish (30) allows extraction from a clause-initial concessive clause introduced by *aun* (even).

(30) ? A María, [aun contándole \_\_ esa historia], Juan se To María, even telling.cl-her that story, Juan enfadó. get.angry.pst.3P

'Even though we told that story to María, Juan got angry.' (Rubio Alcalá, 2016, p. 19)

#### A counterexample: Ecuadorian Quechua

Ecuadorian Quechua freely allows A-bar extraction via topicalization from sentence-initial concessive clauses:

```
(31) Regalo-ta-ka [Juan Ilina-man randi-jpi-pash _ ] Marya
present-acc-top Juan Elena-dat buy-adv-even María
kulirangaiman.
may.get.angry
```

'A present, even if Juan gives it to Elena, María will be angry' (Rubio Alcalá, 2016, p. 26)

#### Conclusion

Table 1 summarises the pattern of extraction in the languages  $discussed^1$ :

	lta	Eng	SC	Swe	Nor	Spa	Czech
Temporal	Х	<b>√/</b> X		<b>√/</b> X	X	<b>√/</b> X	Х
Causal	X	X	X	X	X	✓/X	X
Purpose	✓	✓		1	<b>√</b>		✓
Conditional	✓/X	✓/X	✓	1	✓	✓/X	✓
Concessive	X	X		X	X	?	

<sup>&</sup>lt;sup>1</sup>I do not mention Ecuadorian Quechua as I still have to work on the data

#### Discussion

The first cross-linguistic tendency is that purpose clauses are not islands. They can be non-finite (as in English, and Italian), or finite (as in Italian, Czech, Swedish). The type of A-bar movement does not seem to change this generalization (cf. (19)): wh-movement, topicalization, and relativization are allowed.

# Discussion (cont.)

Secondly, temporal, concessive, and causal clauses are almost always islands.

- Purely temporal CACs almost never allow extraction, and the type of A-bar movement does not seem to matter. Temporal subordinators, when used with a causal meaning, seem to allow (at least) relativization and wh-movement.
- Concessive CACs and PACs are always island, except in Spanish, where they are only degraded
- Causal PACs and CACs are opaque as well in all languages reported but Spanish, which seems to allow topicalization from PACs and CACs.

# Discussion (cont.)

Lastly, conditional ACs show a lot of variability.

- Swedish, Norwegian, and Serbo-Croatian allow extraction.
- Czech only allows extraction from a left-adjoined ACs.
- ▶ Italian allows all the three types of A-bar movement.
- Spanish only allows topicalization.
- The English data are even more fragmented. Extraction can take place under very controlled conditions, but the details remain unclear.

### Theories of extraction

#### Theories of extraction

We need a variable theory of the islandhood status of AC to account for these data. Generative theories in this area fall into one of two camps: either the AC is transparent for semantics reasons; or it allows extraction for structural reasons.

#### The SEGC

The Single Event Grouping Condition (SEGC) is a semantic condition that regulates when an AC is transparent. It states that:

#### (32) Single Event Grouping Condition

An instance of wh-movement is legitimate only if the minimal constituent containing the head and the foot of the chain can be construed as describing a single event grouping. (Truswell, 2011, p. 157)

# The SEGC (cont.)

It correctly predicts the contrast in (33), as well as the grammaticality of (3) and (17b):

- (33) a. Who did John go home [after talking to  $\_$  ]?
  - b. \*What does John work [whistling \_ ]? (Truswell, 2007, p. 5)
  - c. \*Who did John go home [after he talked to \_ ]? (Truswell, 2007, p. 166)

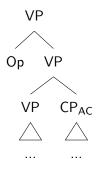
# The SEGC (cont.)

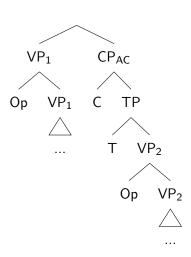
For the SEGC to be enforced, the verb in the AC has to be non-finite. Finite verbs are closed by an operator Op (34), which binds the event variable: the AC is in the scope of Op, and this can create a macro-event. On the other hand, finite ACs have two Ops (35), and thus (according to Truswell) they can only give rise to two distinct events.

# The SEGC (cont.)

(34) Non-finite clause:

(35) Finite clause:





#### Ernst's version of the SEGC

Ernst (2022) expands the SEGC and proposes a feature-based account. There is a feature [UI] (unintegrated) on adjuncts' phase heads (C,  $\nu$ , P). When [UI] is active, the AC is opaque. ACs are opaque by default, and so [UI] active simply means that any A-bar chain within that phase is realised according to the default ( $\rightarrow$  opaque AC). But when the SEGC is enforced, [UI] is rendered inactive, and the AC is transparent.

### Structural approaches to variable islandhood

#### There are two main approaches:

- ➤ They are transparent if their sister is head, that is, when they are arguments. This can happen at Spell-Out (Privoznov, 2021, 2022); or be triggered by a re-analysis of the adjunct (Dal Farra, 2019, 2020).
- ▶ They are transparent if their feature bundles project upwards (Branan and Newman, 2022a,b). This happens if the AC is merged as second specifier. This happens when there is obligatory control of the MC into the AC.

### Paths and locality

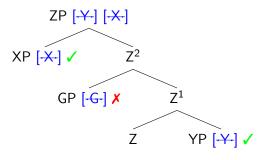
B&N's proposal captures variable islandhood in structural and local terms. Their theory builds on the notion of (long-distance) path and projection. When a feature bundle projects upwards it creates a path between it and the element it projects up to, making them local.

For a feature bundle to project, its sister has to be an indivisible feature bundle. A feature bundle is indivisible if:

- (36) a. It is a feature bundle straight from the lexicon: a terminal node; **or** 
  - b. It is a feature bundle that has projected to a node from only one node.

This is represented in (37), where  $\checkmark$  = projects;  $\nearrow$  = does not project.

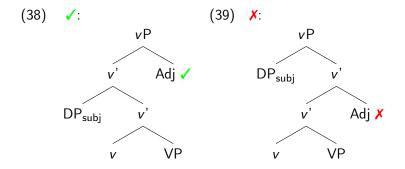
(37)



(Adapted from Branan and Newman 2022a, p. 4)

(37) shows that arguments always project, and that adjuncts adjoined to a phrase that already has filled specifier project as well. What determines whether something projects or not depends on its sister.

When the AC's feature bundle projects, the AC becomes transparent ( ). This happens when the AC is adjoined as a second specifier. In (38) the AC is adjoined above the subject, as a second specifier, and so it projects. On the other hand, in (39), the AC does not project ( ) because its sister does not enforce the conditions in (36).



(Adapted from Branan and Newman 2022a, p. 6)

Obligatory control (OC) ACs have the structure in (38); arbitrary control ACs the one in (39). This predicts the contrast in (40).

- (40) a. What is the flower, open [PRO, to attract  $\_$  ]?
  - b. \*What is the door; open [PRO $_{arb}$  to listen to  $\_$  ]? (Branan and Newman, 2022b, p. 15)

# Problems

#### **Problems**

Can these theories account for these data? The short answer is not entirely.

Why?

#### **SEGC**

- ▶ The SEGC's original formulation (32), cannot account for:
  - 1. Extraction from finite ACs;
  - 2. Other types of A-bar movement.
- It is not clear where Ernst's [UI] comes from, or how a syntactic feature (that apparently all ACs have) interact with a semantic filter.

# SEGC (cont.)

- When we put these considerations aside and we agree that the SEGC works for all types of A-bar movement and for finite and non-finite clauses, other questions remain unaddressed:
  - 1. Event binding and Op (cf. (34-35)): can finite ACs create macro-events?
  - There is a macro-event between the MC and the AC if a causation/goal-driven enablement relation is established. This predicts the grammaticality of extraction from purpose clauses ( ) and from causal clauses ( ).
  - 3. How do conditionals fit in this picture?

#### B&N and Dal Farra

I am grouping these two approaches because they rely on similar intuitions: depending on where the AC is on the tree, different things will happen.

According to Dal Farra (2020), a low CAC gets reanalysied as an argument in order to allow extraction out if it.

According to B&N, on the other hand, an AC that is merged to a second specifier projects its feature bundle upwards and it is local to some higher element in the tree, thus allowing wh-movement.

#### Dal Farra

#### Some elements of her proposal are not clear:

- ► What triggers the reanalysis?
- Are all possible candidates always reanalysed?
- ▶ If the transparent AC is an argument, does it mean that it selected by the verb?
- What other evidences are there that certain ACs are arguments?

#### B&N

Their proposal overgenerates. If all it takes for an AC to be transparent is to have OC, then (41a-b) should be grammatical:

- (41) a. \*What did Mary go home [after PRO<sub>i</sub> having eaten  $\_$  ]?  $\rightarrow$  Temporal
  - b. \*What did John played the game [despite PRO $_{i}$  hating \_  $\rightarrow$  Concessive

### Summing up

There two ingredients to extraction from ACs: syntax and semantics. When these two elements are combined, there might be extraction. This is why handling the problem of variability in extraction from ACs with only semantic or syntactic means seems not to be possible (as the works in this sections did). Syntax and semantics need to work together.

A new-ish way to frame this puzzle

### Fine grained CAC/PAC

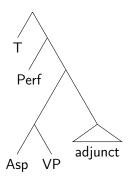
The first step, as it has been often hinted in the literature, is the PAC/CAC distinction (Badan and Haegeman, 2022; Haegeman, 1984, 2010, a.o.): only CACs can allow extraction, while PACs never can. Not all CACs are transparent: only the very low ones. This predicts the ungrammaticality of concessive CACs: they are too high. Lund and Charnavel (2020) showed that *even though*-clauses allow exempt anaphora as they are c-commanded by the MC's subject, just like *because*-clauses (Charnavel, 2019). Concessive CACs are in EpistemicP: lower than *since* PACs, but too high to allow extraction.

Something similar can be said of the contrast in (27), reported in (42):

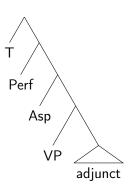
- (42) a. What does John fall asleep [if he watches \_ ]? b. \*What does John snore [if he watches \_ ]?
- (42a) is adjoined to a lower position than (42b), and so only the former allows extraction.

One way to test it comes from the event-level and perfective-level modifiers. According to Newman (2021), adjunct past in future perfect contexts is only allowed if the adjunct is an eventuality-level modifier.

(43) Perfect-level modifier:



(44) Eventuality-level modifier:



(Newman, 2021, p. 13)

The eventuality-level modifier is lower, as it is adjoined directly to the VP. The perfect-level, on the other hand, adjoins higher in the structure.

The contrast in  $(44)^2$  shows exactly that there are fine-grained differences in attachment site.

- (44) a. John will have fallen asleep if he watched Masterchef.  $\rightarrow$  (42a)
  - b. ?? John will have snored if he watched Masterchef.  $\rightarrow$  (42b)

Only the lower CAC (44a) allows extraction.

<sup>&</sup>lt;sup>2</sup>This contrast in not accepted by every speaker.

### Summary

While the PAC/CAC distinction patterns nicely with the possibility of extraction from ACs, fine-grained differences in attachment site are to be investigated further. However, this is just one half of the story: the second ingredient is semantic in nature, and that is where my research will go next.

### Open questions

There are some opens questions that I have not addressed here.

- ▶ If height really is the way into this, what about temporal and causal ACs? They are arguably very low in the structure, and yet extraction is (almost always) very hard. Syntax can map where they attach, but semantics needs to account for what drives a specific merging site.
- Given Truswell's SEGC's record of correct predictions, it shouldn't be discarded too quickly. How should it be updated at the light of the data?
- ▶ Do the type of A-bar movement matter? What about successive-cyclic Wh-movement?

### Conclusion

#### Conclusion

I presented data on extraction from ACs.

ACs allow extraction, but there is variation depending on the type of AC and on other factors (semantics, structural).

Cross-linguistically, there seems to be agreement on which types of AC allow extraction and which do not.

I then offered speculations on how fine-grained differences can predict the island status of the AC. The data under discussion put a central question under the spotlight: why is syntactic displacement subject to many superficially disparate kinds of restrictions?

# Questions?

# Thank you!

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