

The typology of adverbial clauses and the role of discourse syntax

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1. Goals and scope

1.1. The data: functions of adverbial clauses

- The temporal *while*₁ clause in (1a) is a modifier of the **event** encoded in the host clause; the concessive *while*_{2a} clause in (1b) provides a **background assumption** for the proposition encoded in the host clause; the temporal *while*_{2b} clause in (1c) modifies the **speech event**.
 - (1) a. While₁ we were talking about Theresa May, the BBC announced her resignation.
b. While_{2a} Theresa May may be a conservative, some of her proposals were innovative.
c. While_{2b} we are talking about Theresa May, some of her proposals were innovative.
- The temporal/aspectual *since*₁ clause in (2a) modifies the **event time/aspect** encoded in the host clause; the **rationale** *since*_{2a} clause in (2b) functions as a justification for the associated proposition, it is echoic and introduces a proposition ‘attributed to a source different from the speaker’ (Elhadad and McKeown 1990, cf. Ducrot 1983 on polyphony). The *while*_{2b} clause in (2c), which has the rationale reading, modifies the **speech event**
- Temporal/aspectual *since*₁ can be modified by *ever* (2a); this is not possible for rationale *since*_{2a} (2b/2c):
 - (2) a. The Germans have been trying to get the Rubens back (ever) since₁ a consortium of businessmen offered it for sale last year. (*Guardian*, 21.12.04 page 10, col 2)
b. His second is also placed in a recognisable world, but (*ever) since_{2a} this world is perceived through the eyes of Sunless, a man with complex psychological disorders, the reader is entirely at the mercy of his delusions and reality is an elusive prospect. (*Observer*, review 09.01.05, page 11, col 1)
c. I’d just attained my first girlfriend and earned and spent my first own money (on a small bottle of Brut for Men by Fabergé, (*ever) since_{2b} you ask, and, yes, it still astonishes me how the acquisition of the second did not more violently militate against the acquisition of the first.) (*Observer* 6.11.5, page 18, col 1)
- The **temporal/aspectual** *as*₁ clause in (3a) modifies the event encoded in the host clause; the **rationale** *as*_{2a} clause in (3b) echoes a proposition accessible in the discourse. ‘The assumed knowledge conveyed in the *as* clause [...] may be thought of as the common property of the speaker, addressee, and indeed of all those concerned.’ (Davies 1979: 392).
Only temporal/aspectual *as*₁ clauses (3a) allow paraphrasing with *as and when* (3c). The constructed *as*_{2b} clause in (3d) modifies the **speech event**, its most likely reading is the rationale reading.
 - (3) a. As₁ he arrived, he saw that the flat had been broken into.
b. As_{2a} he had already filed a report, there was nothing more to be done.
c. Mr Snapps will insist that taxpayers’ cash will be spent only as₁ and when it is needed. (*Times* 25.7.2019, page 6 col 1)
d. As_{2b} we are talking about failed museums, Ghent’s art museum has also been dumbing down, treating the visitors as if they were children.
- Though the readings of *if* clauses do not diverge as sharply of those of *while*, *since* or *as* clauses, there can still be a number of uses distinguished.

- An adverbial *if* clause can function as an **event conditional** (4a,b), as a **conditional assertion** (4c-e) (Kearns 2006) or as a **speech event modifier** (4h).
 - Only event conditionals (sometimes) allow paraphrasing with *if and when* (4f,g).
 - The conditional clauses in (4c-e) **echo** contextually accessible propositions. However, ‘conditional assertions’ do not have to be echoes of actual utterances. ‘They may also be echoes of an internal or mental proposition (thought) such as the interpretation of an experience, perception etc.’ (Declerck and Reed 2001: 83)
- (4)
- a. If₁ your back-supporting muscles tire, you will be at increased risk of lower-back pain. (*Independent on Sunday, Sports*, 14.10.2001, page 29, col 3)
 - b. If₁ last week you had shown me the piece of pipe system that Laila and I built on Tuesday, I would never have believed it. (*Guardian*, G2, 27.2.4 page 8, col 3)
 - c. If_{2a} I’m no longer going to be arrested for possessing cannabis for my own consumption (‘Cannabis laws eased in drugs policy shake-up’, October 24), shouldn’t I be able to grow my own? (Jason Cundy, Letter *Guardian*, 25.11.1, page 9, col 8)
 - d. If_{2a} we are so short of teachers (‘Jobs crisis grows as new term looms’, August 30), why don’t we send our children to Germany to be educated? (Letters to the editor, Eddie Catlin, Norwich, *Guardian*, 31.8.1, page 9, col 5)
 - e. We are seeing a fall in the incidence of crime, particularly serious crime, and I think we’re right to say ‘What’s going on?’ If_{2a} crime is falling, why are we seeing a continuing rise in the prison population. (*Guardian*, 01.11.2001, page 2, col 6)
 - f. [President Bush and Mr. Blair] will be taking even more [risks] if₁, and when, a land war starts. (*Independent on Sunday*, Comment, 14.10.1, page 25, Col. 2)
 - g. Air support for the marines will come from US navy fighter-bombers, some of which may be based at Kandahar airport if₁ and when it is considered secure. (*Guardian*, 27.11.1, page 3, col 8)
 - h. David Davis even said he had been a personal friend of Mr Clarke for 30 years. He had just faced his greatest test. If_{2b} I may say so, I commend how he has personally responded to, and risen to that occasion. (*Guardian*, 21.7.5, page 2, col 8)
- **Similar patterns found cross linguistically** (e.g. equivalents of English *while*: Dutch *terwijl*, French *tandis que*, Italian *mentre*).

1.2. Goals

- A **reassessment** of the **binary classification** of adverbial clauses in terms of **central** vs. **peripheral** adverbial clauses (Haegeman 1984, 1991, 2012) including an examination and evaluation of the diagnostics invoked in support of the classifications.
- Initially, along the lines developed by Frey (2016, 2018, 2020) (see Heycock 2017), the binary classification will be replaced by a **ternary classification**,
 - Central adverbial clauses (CAC) as in (1a, 2a, 3a, 4a,b)
 - Peripheral adverbial clauses (PAC) as in (1b, 2b 3b, 4c-e)
 - non-integrated adverbial clauses (NoniC) as in (1c, 2c, 3d, 4h)
- **Focus on non-integrated adverbial clauses** (Frey 2016, 2020): non-integrated adverbial clauses will be shown to encode a range of meanings and at first sight do not seem to constitute a homogeneous set, defying a unified analysis.
 - Semantic/syntactic properties of non-integrated clauses as identified in Frey (2016, 2018, 2020) do not carry over to the non-integrated clauses identified in the present discussion.
 - Building on Greco and Haegeman (2020), a (unified) **analysis** of non-integrated clauses capturing the multiple interpretations will be proposed.
- Return to the **classification**
 - **Binary** classification based on +/-integration
 - Questions about the classification of **integrated** adverbial clauses
 - Questions about the classification of **non-integrated** adverbial clauses.

2. The external syntax of adverbial clauses: diagnostics

- Haegeman (1984 etc.): **binary classification** of adverbial clauses:
 - ‘central’ adverbial clauses (*while*₁) modify the state of affairs encoded in the matrix domain,
 - ‘peripheral’ adverbial clauses (*while*_{2a,b}) provide background propositions for the host proposition.
- **Diagnostics** underlying this classification (mainly illustrated using the conjunction *while*)

2.1. Prosody and orthography

- Prosodic/orthographic evidence for differentiating the external syntax of adverbial clauses.
- (5) Today the party’s Treasury spokesman, Matthew Taylor, will commit the Liberal Democrats to entering the next election with a promise to pump more money into the NHS, possibly with a special health tax. **While**_{2a} an emergency debate this weekend is likely to reaffirm Liberal Democrat scepticism about British involvement in a war with Iraq. (*Independent* 09.03.2002, page 8, col 8)

2.2. Coordination

- **Coordination** of adverbial clauses:
- (6) a. [The Phoenix project] works with women while₁ they are still with an abusive partner, and while₁ they are seeking alternative accommodation during resettlement. (*Guardian*, 8.12.3, page 7, col 1)
- b. While_{2a} the Prime Minister himself may be very eager and while_{2a} his ministers may continue to believe in his chances to formulate an acceptable deal with the EU, EU leaders remain largely skeptical.
- (7) a. The party is also in danger of alienating older people above the poverty line, Mr Cable argues. ‘Both these groups will swing to the Conservatives if₁ the Tories are smart enough and if₁ we have nothing much to offer them.’ (*Guardian*, 11.2.2., page 6, col 5)
- b. [Not only has [Sir Richard] failed to keep his warring department in check but he is claimed to have swerved from readiness to do a deal with Mr Sixsmith to fury at a government ‘complete cock-up’, before finally throwing in his lot with Mr Byers...] But if_{2a} Sir Richard has been tainted by the affair, and if_{2a} Mr Sixsmith’s role may not have been as entirely well-intentioned as he claims, the individual most damaged by the row remains Stephen Byers. (*Guardian*, 25.2.2, page 4, col 3)
- c. However, since_{2a} those discussions have already gone on for over a year, and since_{2a} very few children at the beginning of the twenty first century actually have “Nursies”, naughty or otherwise, I would think it unlikely that... (Simon Brett, *Murder in the Museum*, Pan books, 2003: 19)
- (8) a. After₁ The Three Birds opened, and while₁ I wrote my second play, Five Gold Rings, I began to watch more theatre. (*Guardian*, G2, 11.12.3, page 11, col 3)
- b. When₁ I was playing at fly half in 2001-02 and if₁ something went wrong behind the scrum, he’d turn and have a go at me. (*Observer* 15.5.5. page 13, col 5)
- However: adverbial *while*₁ clause (1a) and adverbial *while*_{2a} clause (1b) cannot coordinate:

- (8) c. While_{2a} [the lawsuit challenging the legitimacy of lethal injections] probably won't stop the use of lethal injection altogether, it will certainly delay its use while₁ the supreme court decides what to do. (*Guardian* G2, 12.12.,3, page 4, col 4)
- c'. *While_{2a} [the lawsuit challenging the legitimacy of lethal injections] probably won't stop the use of lethal injection altogether and while₁ the supreme court decides what to do, it will certainly delay its use.
- d. The three [restaurants] at Gatwick Airport currently remain open while₁ a buyer is sought, while_{2a} the independently operated Fifteen Cornwall is unaffected. (*New Statesman* 21-27 June 2019, page 57)
- d'. *The three [restaurants] at Gatwick Airport currently remain open while₁ a buyer is sought and while_{2a} the independently operated Fifteen Cornwall is unaffected. (*New Statesman* 21-27 June 2019, page 57)
- Coordination:
likeness condition (cf. Williams 1978 *Law of coordination of the likes*), where 'likeness' will also be interpreted in structural terms
A coordination of α and β is admissible at a given place in sentence structure if and only if each of α and β is individually admissible *at that place* with the same function. (Huddleston and Pullum, 2006: 201)
 - Proposal (informal):
central adverbial clauses and peripheral adverbial clauses cannot coordinate because they do not occupy the same 'structural place'; their level of attachment to the clause is different.

2.3. Scope phenomena (non-exhaustive)

2.3.1. Temporal/aspectual/modal subordination

2.3.1.1. The patterns

- 'Temporal subordination'
 - Central while₁ clause in (8c), the present tense verb *decides* inherits futurity from the future time expression *will delay...* in the host clause.
⇒ Temporal subordination
 - Peripheral while_{2a} clause (8c): futurity is encoded independently, viz. by the future auxiliary *won't* (cf. a.o. Haegeman and Robinson 1979, Haegeman and Wekker 1984 and references cited). Cf. (9): futurity encoded by *be going to*.
⇒ No temporal subordination
- (9) I've always said that we wouldn't see real success until Athens. And while_{2a} I'm not going to promise gold medals in 2004 or even 2008, I will say that we're beginning to see the emergence of a generation of swimmers who might make the podium in Athens and will be among the medals in Beijing. (*Guardian*, 03.08.02, page 2, col 4)
- 'Modal subordination'
 - In (10a), the temporal while₁ clause is interpreted in the scope of the epistemic adverb *probably*. In (10b), the concessive while_{2a} clause is not within the scope of the adverb *probably*. (See also Verstraete 2002: 242-3).
 - In (10c), the adverb *certainly* in the root clause scopes over the while₁ clause though not over the while_{2a} clause, which has its own epistemic value encoded in *probably*.
- (10) a. Though the painting's value had originally been contested, experts probably have been able to fully assess it while₁ it was up for sale.
- b. While_{2a} the painting's value had originally been contested, experts probably have been able to fully assess it while₁ it was up for sale.

- c. While_{2a} [the lawsuit challenging the legitimacy of lethal injections] probably won't stop the use of lethal injection altogether, it will certainly delay its use while₁ the supreme court decides what to do. (*Guardian* G2, 12.12.,3, page 4, col 4)

2.3.1.2. Temporal subordination as a syntactic phenomenon (Hornstein 1993) ('Constraint on derived tense structures')

Temporal adjuncts headed by temporal connectives such as *when*, *while*, *after*, *before*, *as*, *until*, and *since* **interact with the tense of the matrix clause**. ... There are rather specific tense-concord restrictions that obtain between the tense of the matrix clause and the tense of the **modifying** clause. These restrictions can be largely accounted for structurally in terms of the C[onstraint] on D[erived] T[ense] S[tructures] and the rule that combines these clauses into complex tense structures. (Hornstein 1993: 43, boldface LH)

There is a **secondary conjunctive interpretation** that all these connectives (*as*, *while*, *when*) shade into. They get an interpretation similar to *and* in these contexts. *And* is not a temporal connective, and these conjunctive interpretations do not tell against the theory [of temporal subordination and complex tense structures] (Hornstein 1993: 206: note 19, boldface LH)

- Peripheral adverbial clauses are not conjuncts:
 - no **second conjunct subject ellipsis** (11a,b);
 - no **gapping** (11c,d).

- (11) a. John is doing a Ph.D. in Oxford but ___ did his first degree in Cambridge.
b. *John is doing a Ph.D. in Oxford while_{2a} ___ did his first degree in Cambridge.
c. John reads the Guardian and Mary ___ the Times.
d. *?John reads the Guardian while_{2a} Mary ___ the Times.

2.3.2. Negation

- (12) a. I didn't read any Belgian papers while₁ I was on holiday.
b. I didn't read any Belgian papers, while_{2a}/whereas/although I did read the foreign press.
c. I never read Belgian papers while₁ I am on holiday.
d. I never read any Belgian papers, while_{2a}/whereas/although I do read the foreign press.

2.3.3. Focus (cleft/only), negative inversion

- (13) a. It's only while₁ you're alive that human selfishness, or whatever, is held against you. (*Independent on Sunday, Review* 14.10.1, page 9, col 1)
b. *It is (only) while_{2a} my mother is a housewife that my father used to work in a brickyard.
c. Only while₁ you're alive is human selfishness, or whatever, held against you.
d. *(Only) while_{2a} my mother is a housewife did my father use to work in a brickyard.

2.3.4. Interrogative scope

- (14) a. Would you be able to buy Belgian papers while₁ you are abroad?
b. While₁ you are abroad, would you be able to buy Belgian papers?
- (15) a. While_{2a} John has already bought most foreign papers, will he also buy the Belgian ones?
b. While_{2a} Bush is clearly delighted to have Blair as an extra ambassador for his policies at the moment, somebody to get on those dangerous aeroplanes and rush around the Middle East chatting up guys with difficult names in order to strengthen America's position, what kind of influence do we really imagine Blair has on Bushes foreign policy? (*Independent, Comment* 1.11.1, page 5, col 3)

2.4. VP deletion/substitution and strict/sloppy identity

- (16) a. John works most efficiently while₁ his children are at school and so does James.
While₁ his children are at school, John works most efficiently and so does James.
(i) James also works most efficiently while John's children are at school.
(strict identity')
(ii) James also works most efficiently while his (own) children are at school.
(sloppy identity')
- b. While_{2a} her husband is unemployed, Jane has a high-powered job in the city and so has Janet.
(i) 'Janet also has a high powered job in the city.'
(ii) NOT: 'Janet_i also has a high powered job in the city, and her_i husband is also unemployed.'

2.5. Embedding, argumental status, V3 resumption

- Embedding
 - Both central *while*₁ clauses and peripheral *while*_{2a} clauses are embeddable (Frey 2020: 5). for illustration see Section 3.2.1. and also Frey (2018: 14, Frey 2020: 23, ex. (60b)).
 - Restriction on embeddability: *while* clauses:
 - In (17a) the temporal *while*₁ clause is integrated in the bracketed (central) conditional clause, it is temporally subordinated, with its present tense *is* inheriting the futurity reading from the main clause ('will be very disappointed').
 - The *while* clause in (17b) must also be interpreted as temporally subordinated, i.e. it must receive a temporal interpretation, leading to the weird assumption that at some future point his sister will no longer have a Cambridge degree. The (peripheral) adversative reading of the *while* clause paraphrased in (17c) is not available:¹

(17) a. His mum will be very disappointed [if he quits university while he is still an undergraduate].
b. His mum will be so disappointed [if he quits university while his sister has a Cambridge degree].
c. His mum will be so disappointed [if he quits university despite his sister having a Cambridge degree]

 - Restriction on embeddability: *since* clauses:
 - (Central) temporal *since*₁ clauses can be embedded within a (central) conditional clause (18).
 - (Peripheral) rationale *since*_{2a} clauses cannot embed inside event conditionals. The rationale *since*_{2a} clauses in (18) are only acceptable as parentheticals.
 - A causal *because*-clause is acceptable in the same contexts in (18) without the parenthetical reading.

(18) a. [If he hasn't talked to her since she came back from China], he won't have her new phone number.

¹ Judgements from 2 British informants. Judgements are subtle also because one has to control for a parenthetical interpretation of the examples. One informant pointed out that (i) is not acceptable for him with the low reading in which the adversative *while*₂ clause modifies the *if* clause. Thanks to Carlos de Cuba (p.c.) for this judgement:

(i) There will be some surprised faces if he registers at a redbrick university while₂ his father went to Cambridge.

- b. [If he hadn't talked to her since she came back from China], he could not have known her phone number.
- c. [If we have to change our holiday plans because/*since₂ there is a deal], we will have to act promptly.
- d. [Should we have to change our holiday plans because*/since₂ there is a deal], we will have to act promptly.

The same effect is also found with embedding in nominal domains:

- (19) [The jailing of a mother [because/*since₂ her teenage daughters repeatedly played truant]] was yesterday welcomed by the government.

- **Argumental status** of central adverbial clauses

A point that was not raised in earlier discussion and – to the best of my knowledge - remains unaccounted for is that central adverbial clauses can figure as arguments in a clause: e.g.

- temporal *while*₁ clauses may be the complement of a preposition (20a) or may be subjects (20b). This is not possible with concessive *while*_{2a} clauses (20c).
- (20) a. Keep this novel for while₁ you are invigilating.
 b. While₁ you are invigilating is not a good time to check proofs.
 c. *Theresa May was a feminist in spite of while_{2a} she was a conservative.
- A temporal *since*₁ clause can function as the complement of the preposition (from). The same is replicated for Dutch temporal *sedert*₁ clauses. Such PP-internal embedding is not available for rationale *since*₂ clauses (or for Dutch *vermits*-clauses). Causal *because* clauses can function as subjects in (negative) contexts, but rationale *since*₂ clauses are not available in those contexts.
- (21) a. I have known George from since he came back from the war.
 b. I ken George al
 I know George already
 van sedert dat hij van het front teruggekeerd is.
 from since that he from the war returned is.
 c. Because you're married does not mean you cannot go out any more.
 d. *Since you're married does not mean you cannot go out any more

This contrast probably relates ultimately to the more nominal and/or referential character of central (i.e. here temporal *while*₁ / *since*₁) clauses. Unfortunately, I myself have no light to shed on this contrast, though I do believe that it would be useful to pursue the contrast further.

- **Resumption** and V3 orders in Dutch

- Dutch temporal *sedert* clauses can give rise to a 'V2 transgression' (Catasso 2015), a V3-order in which an initial constituent is picked up by a matching resumptive element left-adjacent to the finite verb: in (22a), the temporal clause is picked up by the PP *sedert dan* ('since then').
 - This resumptive strategy is not available with (peripheral) rationale *vermits*-clauses (22b).
 - (Central) causal *omdat*-clauses can be picked up by the adverbial *daarom* ('therefore') (22c).
 - The resumption options probably tie in with the availability of argumental status (see above).
- (22) a. Sedert ik met pensioen ben, sedert dan werk ik thuis.
 since I with pension am since then work I home
 b. *Vermits ik met pensioen ben, daarom werk ik thuis.
 since I with pension am therefore work I home
 c. Omdat ik met pensioen ben, daarom werk ik thuis.
 because I with pension am therefore work I home

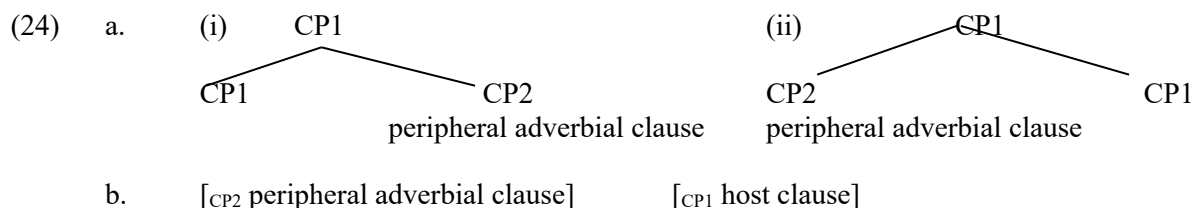
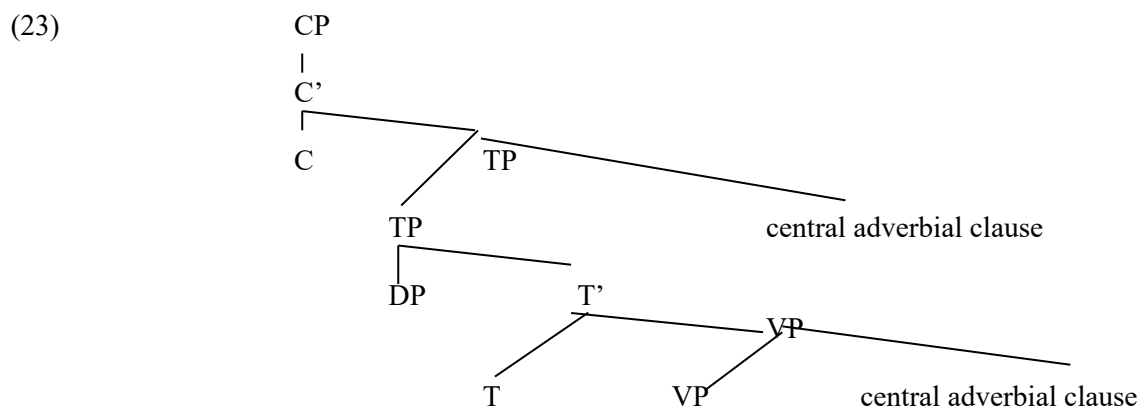
2.7. Summary

Table 1: Diagnostics to set apart central and peripheral adverbial clauses

| | | Central adverbial clause (e.g. <i>while</i> ₁) | Peripheral adverbial clause (e.g. <i>while</i> _{2a}) |
|---|---|--|--|
| A | Temporal/ aspectual/ modal scope (subordination) | + | - |
| B | In scope of matrix negation | + | - |
| C | Focus (cleft, <i>only</i> + negative inversion) | + | - |
| D | In interrogative scope | + | - |
| E | VPE/VP anaphora (sloppy identify effects) | + | - |
| F | Embedding in central adverbials or in nominal domains | + | - |
| | Argumental status | + | - |
| | Resumption (Dutch) | + | - |

2.8. Previous accounts

- Haegeman (2003, 2012): **syntactic** analysis (*pace* Declerck and Reed 2001: 37-8)
- Two proposals:
 - (i) **level of adjunction**, with peripheral adverbial clauses adjoined to the root CP ((23) vs (24a))
 - (ii) +/- integration analysis: peripheral adverbials as non-integrated ‘**orphans**’² ((23) vs (24b))



- Haegeman (1984a,b,c, 1991 ff.): peripheral clauses: **either** analysed in terms of their different degrees of embedding **or alternatively** in terms of (non)-integration.

² For proposals in relation to extra sentential constituents see Safir 1986, Fabb 1990, Koster 2000, Shaer and Frey 2004, Cinque 2008, Axel and Wöllstein 2009, Haegeman, Shaer, and Frey 2009, Giorgi 2014, Haegeman and Greco 2018, Greco and Haegeman 2020, a.o. See also Section 5.2.4.

- In line with Frey (2016, 2018), it will be shown presently that both analytical options must be available in the grammar, albeit for different sets of data.
- Haegeman's earlier account implied that the difference between central adverbial clauses and peripheral adverbial clauses broadly paralleled that between restrictive relatives and non-restrictive relatives. In the light of Cinque's (2008) proposal that in fact non-restrictive relatives may be either integrated or non-integrated, the question also arises whether – given the hypothesis of parallelism – one should uphold the hypothesis that the two analyses of peripheral adverbial clauses are mutually exclusive, i.e. that peripheral adverbial clauses are either analysed as integrated or that they are not integrated.
- The syntactic positions in (23/4) were determined by the surface position of the adverbial clauses which are usually initial or final. It will be argued below that these are not necessarily the merge positions of these clauses and rather that the adverbial has been moved there.

3. A reassessment of the diagnostics and the analysis

3.1. Issue 1: The diagnostics

- Peripheral adverbial clauses, type *while*_{2a}, differ from central adverbial clauses in a number of ways which Haegeman (1991, 2003) took as evidence that they are **EITHER** structurally less integrated with the host clause **OR** that they are non-integrated.
 - However, Haegeman's **diagnostics** (A-E in Table 1) do not provide conclusive evidence for either of these analyses, neither in terms of (non-)integration (the orphan analysis – (24b)) nor in terms of them being merged as high as the CP (i.e. 'IP'-external – (24a)) layer.
 - The diagnostics advanced to set apart peripheral adverbial clauses type *while*_{2a} also single out adverbial modifiers which are standardly taken to be integrated and part of the clausal ('IP') domain such as the epistemic modal adverb *probably*:³
 - outside the scope of the temporal operator (25a);
 - outside the scope of negation (25b);
 - cannot be focused or cleft (25c);
 - cannot be *wh*-questioned (25d);
 - does not undergo VPE (25e);
 - does not embed in central adverbial clauses (25g);
 - does not function as a (prepositional) argument (25h).
- (25) a. He probably took early retirement.
= 'It is probable (now) that he took early retirement.'
≠ 'It was probable in the past that he took early retirement.'
- b. He probably did not take early retirement.
= 'I consider it probable that he did not take early retirement'
≠ 'It is not probable that he took early retirement.'
- c. He has (*even) probably taken early retirement.
*It is PROBABLY that he has taken early retirement, not definitely. (with cleft reading)
- d. A: How did he leave? B: *Probably.
- e. He has probably gone home, and his wife has too.
(hard to get *probably* reading for the VPE, p.c. Andrew Radford)

³ The same observation extends to other types of adjuncts like PPs (Schweikert 2005), or nominal adjuncts. See also Souza (2021)

- g. *If they luckily/fortunately arrived on time, we will be saved. (Ernst 2007: 1027, Nilsen 2004) (cf. Palmer 1990: 121, 182, Declerck and Depraetere 1995: 278, Frey 2018: 19, 2020: 4, his (11))
- f. *I will not book until probably/obviously.⁴
- Observe that the unacceptable patterns in (25) are not due to the categorial status of the *-ly* adverb. The patterns are acceptable with the temporal adverb *recently*. Cf. Li et al. (2012: 232).
- (26)
- a. He recently took early retirement.
- b. He did not take early retirement recently; in fact he retired two years ago.
- c. He has only recently taken early retirement.
- d. It is only RECENTLY that he has taken early retirement.
- e. They have added another option to the menu.
But that was quite recently.
- f. A: When did he leave?
B: Very recently.
- g. He has recently gone home, and his wife has too.
- i. When he recently retired, he suddenly discovered new possibilities.
- j. Until recently, no one ever talked about this issue.
- Even if modal adverbs such as *probably* might arguably be interpreted higher than their surface position, they are standardly taken to be inserted in the narrow syntax (cf. Cinque's 1999, Ernst 2002, 2007, 2009) and hence as integrated in the clausal structure.
- As evidence:
- In English, they are typically positioned to the **right** of the canonical subject position.
 - In Dutch, they need not be the first constituent in the V2 pattern; they can be located in the middlefield (27).
- ⇒ high modal adjuncts are integrated
- ⇒ high modal adjuncts are not necessarily in the CP/left periphery area of the clause.
- (27)
- a. Hij komt waarschijnlijk morgen terug.
he comes probably tomorrow back
- b. dat hij waarschijnlijk morgen terugkomt
that he probably tomorrow back comes
- Conversely, the syntactic integration of high modals is supported by the fact that they can (28a) - but need not - constitute the **first constituent in a V2 clause** in Dutch and, conversely, **do not give rise to V3** transgressions (28b):
- (28)
- a. Waarschijnlijk komt hij morgen terug.
Probably comes he tomorrow back
- b. *Waarschijnlijk hij komt morgen terug.
probably he comes tomorrow back
- ⇒ W.r.t. syntax/degree of integration, we can only conclude from the diagnostics that, like high modals, peripheral adverbial clauses type *while*_{2a} **must be merged somewhere 'higher'** in the clausal structure and outside the relevant scope domains.
- ⇒ Contrary to the earlier analysis (see comments on (23/4) the position in which the adverbial clause surfaces is not necessarily its first merge position, but is due to movement. The trigger

⁴ (25f) would be intended with a reading along the lines of 'I will not book until it is probable' or 'I will not book until it is obvious'.

for the movement must be subject to further investigation, but should probably be related to a discourse-related feature.

3.2. Issue 2: Problems for the orphan account of peripheral adverbial clauses type 2a

3.2.1. Embedding

As shown by Haegeman, Shaer and Frey (2009), and Frey (2016), a **non-integration** ('orphan') hypothesis for the peripheral adverbial clause type 2a (e.g. adversative *while*_{2a}) is contradicted by the fact that such adverbial clauses can be **embedded**, with sequence of tense effects, modal subordination and pronominal binding as the reflex of their syntactic integration (29).

- (29) The judge **declared** [that [while the decision to ban the drugs **was** probably not illegal], it was not easily compatible with the intentions of the current laws on drug abuse].

3.2.2. Verb second

- As shown a.o. by Reis (1997) and Frey (2016), a **non-integration** ('orphan') hypothesis for the peripheral adverbial clause type 2a is contradicted by the fact that such adverbial clauses constitute the first constituent of a V2 clause (30).

- (30) Terwijl Jan in Amsterdam gepromoveerd is in 1980
While Jan in Amsterdam promoted was in 1980
zal zijn dochter /***zijn dochter zal** nu in Utrecht gaan studeren.
will his daughter/*his daughter will now in Utrecht go study. (Dutch)

3.3. Issue 3: Problems for the CP/ForceP adjunction account of peripheral adverbial clauses type 2a

- For peripheral adverbial clauses type 2a, a **CP/ForceP adjunction** analysis (Haegeman 2004, Coniglio 2011, Frey 2016) is contradicted by these word order patterns:
 - (i) In the embedded environment (29) the complementizer linearly precedes the adverbial clause (see also Frey 2016).
 - (ii) the V2 patterns (30) (see also Frey 2016).

3.4. Issue 4: Classification: Peripheral clauses type 2a and type 2b are not homogeneous

- In support of Frey's findings (2016, 2018), additional diagnostics show that grouping the *while*_{2a/2b} adverbial clauses shown in (1b) and (1c) as a unique 'peripheral' type is inadequate.

3.4.1. Coordination

Haegeman's 'peripheral' adverbial clauses type 2a and type 2b are treated as one category. However, these two types cannot coordinate.

- Even when associated with the same host clause (31a), the concessive *while*_{2a} clause and the speech event modifying *while*_{2b} clause cannot coordinate (31b).

- (31) a. While_{2b} we are talking about Theresa May, while_{2a} the Prime Minister may be a conservative, her proposals are very innovative.
b. *While_{2b} we are talking about Theresa May and while_{2a} the Prime Minister may be a conservative, her proposals are very innovative.

- Similarly, conditional assertions and conditional modifiers of the speech event cannot coordinate (Takami (1988: 267-8) as shown in (32) (based on his (10)), Ros (2005: 94-5) in (33), based on his (24b)).

- (32) a. You should write to her, if_{2a} you love her so much.
 b. You should write to her, if_{2b} it'll make you feel any better.
 c. You should write to her if_{2a} you love her so much, if_{2b} it'll make you feel any better.
 d. *You should write to her, if_{2a} you love her so much and if_{2b} it'll make you feel any better.
- (33) a. John should know about wines if_{2a} John's wife is French.
 b. John should know about wines, if_{2b} I might say so.
 c. John should know about wines if_{2a} John's wife is French, if_{2b} I might say so.
 d. *John should know about wines if_{2a} John's wife is French and if_{2b} I might say so.

- The unavailability of coordination was taken as evidence for the structural non-identity of the $while_1$ clause and the $while_{2a}$ clause (cf. Section 2.2),
 ⇒ the impossibility of coordination for a $while_{2a}$ clause and a $while_{2b}$ clause should lead us to conclude that these too are not structurally identical.

3.4.2. Embedding

- Frey (2020:5): “Another significant property which differentiates NonICs from PACs (and from CACs) concerns the possibility of being embedded together with the host clause. Whereas a PAC can be embedded with its host clause,⁵ [...], a NonIC cannot”
 - Peripheral adverbial clauses type 2a are embeddable (see (29)).
 - Speech event modifying adverbial clauses type 2b are unembeddable.
 - The (temporal) *while* clause in (34a) is interpreted either as modifying the time of the event encoded in the main clause ($while_1$) or that of the speech event ($while_{2b}$).
 - The *while* clause in (34b) must modify the time of the event encoded in the main clause ($while_1$); the interpretation as modifying the time of the speech event ($while_{2b}$) is unavailable.
- (34) a. While $_{1>2b}$ we are talking about Theresa May, five cabinet ministers will be voting with the opposition.
 b. The secretary of state will announce [that [$while_{1/*>2b}$ they are talking about Theresa May], five cabinet ministers will be voting with the opposition].

3.4.3. V2

- Adverbial clause type 2a can constitute the first constituent of a V2 clause (30).
 Adverbial clause type 2b cannot constitute the first constituent of a V2 clause (35a).
- Adverbial clause type 2b is an extra-sentential constituent and combines with a V2 root clause (35).

- (35) Terwijl we het over Bart De Wever hebben,
 while we it about Bart De Weber have,
 a. *hoor ik dat Antwerpen berucht is voor de invoer van drugs.⁶

⁵ Frey illustrates embeddability with (i) : (Frey 2020: 6, (15a))

(i) Hanserzählte, [dass Maria klug ist,
 Hanstold that Maria intelligent is
 während ihr Bruder fleißig ist].
 while her brother diligent is
 ‘Hans told that Maria is intelligent while her brother is diligent.’

⁶ Observe that the following is fine: the *terwijl*-clause is a temporal modifier of the root clause:

(i) Terwijl we het over Bart De Wever hadden,
 while we it about Bart De Weber had,
 hoorde ik dat Antwerpen berucht is voor de invoer van drugs.
 heard I that Antwerp famous is for the import of drugs.

- b. hear I that Antwerp famous is for the import of drugs.
ik hoor dat Antwerpen berucht is voor de invoer van drugs.
I hear that Antwerp famous is for the import of drugs

Table 2: Three types of adverbial clauses

| | | Central adverbial clause (e.g. <i>while</i> ₁) | Peripheral adverbial clause (e.g. <i>while</i> _{2a}) | Modifier of speech event <i>while</i> _{2b} |
|---|--|--|--|---|
| A | Temporal/ aspectual/ modal scope (subordination) | + | - | - Not illustrated |
| B | In scope of matrix negation | + | - | - Not illustrated |
| C | Focus (cleft, <i>only</i> + negative inversion) | + | - | - Not illustrated |
| D | In interrogative scope | + | - | - Not illustrated |
| E | VPE/VP anaphora (sloppy identify effects) | + | - | - Not illustrated |
| F | Embedding in central adverbial clauses and nominal domains | + | - | - Not illustrated |
| | Argumental status | + | - | - Not illustrated |
| | Resumption (Dutch) | + | - | - Not illustrated |
| G | Embedding in <i>that</i> clause | + | + | - |
| H | First constituent in V2 | + | + | - |

4. A ternary classification of adverbial clauses?

- Frey (2016, 2018, 2020) develops a ternary classification of the clauses in terms of (i) **central**₁ adverbial clauses (CAC), (ii) **peripheral**_{2a} adverbial clauses (PAC) (1b) and (iii) **non-integrated**_{2b} adverbial clauses (NiC), which modify the speech event (1c).
- Departing from Frey's labelling, I will use the abbreviation **NiC** rather than **NonIC** for reasons to be made clear in Section 5.

(36) The typology of adverbial clauses Frey (2018, 2020):

- | | |
|---|--|
| (i) Central adverbial clauses modify the matrix event : lower syntactic attachment | CAC (1a, <i>while</i> ₁) |
| (ii) Peripheral adverbial clauses modify the matrix proposition : higher syntactic attachment | PAC (1b, <i>while</i> _{2a}) |
| (iii) Non-integrated adverbial clauses modify the speech act : outside narrow syntax | NiC (1c, <i>while</i> _{2b}) |

- The parallelism with high modal adverbs in Section 3.1 corroborates Frey's hypothesis that PACs are associated with a high modal domain, instantiated by Krifka's (2017) J(udge)P (see also Section 5.1).
- Given the parallelism between subjective modals and PACs, *ceteris paribus*, the latter too must be JP-adjoined. If we adopt Cinque's (1999) cartography, reproduced in (37), see also Schweikert (2005) on PPs and Souza (2021), Krifka's (2017) JP would be reinterpreted as a 'telescoped' version of two modal projections: MoodP_{evidential} and ModP_{epistemic} (37).

(37) MoodP_{speech act}> MoodP_{evaluative}> **MoodP_{evidential}**> **ModP_{epistemic}**> TP (Past) > TP (Future)
>MoodP_{irrealis}>ModP_{alethic}>AspP_{habitual}>AspP_{repetitive}>AspP_{frequentative}>ModP_{volitional}>
AspP_{celerative}>TP (Anterior)> AspP_{terminative} >AspP_{continuative}>AspP_{retrospective} > AspP_{proximative}
>AspP_{durative} >AspP_{generic/progressive} > AspP_{prospective}> ModP_{obligation}> ModP_{permission/ability}>
AspP_{completive} >VoiceP>AspP_{celerative} >AspP_{repetitive} >AspP_{frequentative} (Cinque 2004: 133, his (3))

- However, a ternary classification (36) suggests that the three adverbial clause types are on equal footing, there are as it were three ‘primitive’ strands. This is challenged by a further exploration of non-integrated adverbial clauses.

5. Non-integrated clauses are not homogeneous

5.1. Starting point: Frey’s characterization of NonIC: a brief (and partial) survey

- Following Krifka’s (2017) hierarchy (38), Frey (2018: 26, 2020: 13, his (36)) classifies his German NonIC adverbial clauses as ‘ActP’:

- (38) a. ActP > CmP⁷ > JP > TP
b. The speech act phrase (ActP) encodes the performing of a speech act by a speaker (Frey 2020: 13, (35, iv))

- Properties of Frey’s NonIC (Frey 2018: Handout, Frey 2020):
 - Placing in the prefield of a German **verb-second clause** (V2 clause) – a position of full integration: **possible** for [...] CACs and PACs, not for NonICs. (Frey 2018: 13, 2020: 30)
 - **Embedding** together with host: [...] CACs + PACs: **yes**, NonIC: **no**. (Frey 2018: 14, 2020: 30)
 - A NonIC encodes an **independent speech act** (Frey 2018: 16, 2020: 30)
 - NonIC: **ActP** (Frey 2018: 27, 2020: 30)
 - The speech act phrase (ActP) encodes the speaker and expresses the occurrence of a specific speech act. (Frey 2018: 28)
 - NonICs [constitute] encode subsidiary speech acts relative to the speech acts performed by their hosts (Frey 2020: 30)
 - An ActP cannot be syntactically embedded (Frey 2018: 47, Frey 2020: 30, (77))
 - [A NonIC] is **adjoined to the ActP of its host** (Frey 2020: 30, (79))
 - NonICs cannot be **coordinated** [...] in contrast, PACs can. (Frey 2018: 17, 2020: 30)
 - NonICs (as ActP) allow strong and weak R[oot] P[henomena]s’ (2018: 27).
 - A **strong RP** is licensed by being adjoined to ActP (Frey 2018: 52, Frey 2020: 31, (39))

5.2. Non-integrated clauses are not homogeneous

5.2.1. Interpretation

- Extending the data outside the range of German data evoked in Frey (2018, 2020), which I will neither examine nor elaborate on, non-integrated clauses identified here are associated with a wide array of interpretations.
- While Frey (2018) does not explicitly pursue this apparent diversity of non-integrated adverbial clauses he does say: “Different adverbial clauses which usually occur as CACs or PACs may appear as NonICs of or following a V2-clause. This is also prosodically marked.” (Frey 2018: 16). The same point is made in Frey (2020): “different types of clauses which usually appear as PACs can also appear as NonICs if they are separated by a pause from the host clause and carry their own sentence contour. **Appearing as NonICs, these clauses can host a strong root phenomenon.**”
 - I refer to clause types which in Frey’s (2018) terms “usually occur as CACs or PACs” and which “can also appear as NonICs” as ‘**recycled CACs/PACs**’. (1c) and (39) below exemplify recycled CACs; (2c) and (40) below exemplify recycled PACs.
 - The question arises whether Frey would assume that the properties he attributes to his NonICs would extend to all such recycled CACs/PACs.

⁷ CmP is Commitment phrase: I have nothing to say about this

- Sections 5.2.2. and 5.2.3. show that what appear to be non-integrated adverbial clauses are not homogeneous, recycled CACs/PACs retain the **internal** syntax of the basic clause type.

5.2.1.1. Speech event modifiers

- CAC-like: temporal (39a,b)/conditional (39c,d) adverbial clause are **recycled** as speech event modifiers:

- (39) a. Before_{1>2b} you point it out, I know I am choosing an unrepresentative sample group, made up of middle class teenagers. (*Independent on Sunday* 5.11.6, page 40, col 2)
- b. While_{1>2b} we're on the subject of Robbie, a number of postings on the Popbitch gossip website have speculated about his future collaborators. (*Guardian*, The editor, 6.4.2., page 17, col 4)
- c. David Davis even said he had been a personal friend of Mr Clarke for 30 years. He had just faced his greatest test. If_{1>2b} I may say so, I commend how he has personally responded to, and risen to that occasion. (*Guardian*, 21.7.5, page 2, col 8)
- d. In fact, poor old 't' is disappearing even in the middle of words – e.g. 'butters' is commonly said as 'buyers'. The most stable letters are 'm' and 'n', if_{1>2b} you're interested: they're very unlikely to disappear from spoken language. (*Observer* 14.8.5, page 8, col 3)

- PAC-like: rationale *since_{2a}* (40a, 2c),/adversative *while_{2a}* (40b,c) adverbial clauses are **recycled** as speech event modifiers:

- (40) a. I'd just attained my first girlfriend and earned and spent my first own money (on a small bottle of Brut for Men by Fabergé, since_{2a>2b} you ask, and, yes, it still astonishes me how the acquisition of the second did not more violently militate against the acquisition of the first.) (*Observer* 6.11.5, page 18, col 1)
- b. While_{2a>2b} I may be prejudiced in this area, students nowadays work far less than they used to.
- c. While_{2a>2b} I have no personal experience, on social media most people only present part of themselves.

5.2.1.2. Root event modifiers

- Haegeman and Greco (2018), Greco and Haegeman (2020): V2 transgressions in West Flemish in which a temporal/conditional CAC modifying the event encoded in the V2 root clause is argued to pattern as a clause-external constituent. For evidence, from the absence of reconstruction and scope effects, see their paper, also Haegeman and Greco (2018).

- (41) a. Oa-j gie nietent eet, je goa gie je nie goed voelen. (MvdB, WF, 8.12.17 19.30)
if-you nothing eat, you go you you not well feel
'If you don't eat anything, you won't feel well.'
- b. En ame em zien ankommen, zegt ze, Pierre vult dat ton in.
(03/06/18, train, female, 40s, Bruges origin)
and when-we him see come, says she, Pierre fills that then in
'And when we see the trainguard arrive, she says, Pierre fills in [the date].'

5.2.2. Internal syntax

- The internal syntactic properties which Frey (2018) ascribes to the German NonICs and which motivate his claim that they are ActP do not extend to ('recycled') non-integrated speech event modifying clauses.
 - Frey's German NonICs 'allow strong and weak R[oot] P[henomena]s' (2018: 27).
 - Neither tags nor hanging topics, both considered 'strong RPs', are available in English speech event modifying adverbial clauses like the temporal non-integrated *while_{1>2b}* clause in (1c) or those in (39b), as shown in (42).

- Like regular CAC, speech event modifying *while*₁ CAC remain incompatible with argument fronting, a root phenomenon in English ((43) (see Haegeman 2012: 182, (74)):

- (42) a. *While_{1>2b} we are talking about John, **aren't we**, do you have his home address?
b. *While_{1>2b} **John**, we are talking about **him**, do you have his home address?

- (43) *While_{1>2b} **Robbie** we're talking about, postings on the Popbitch website have speculated about his future collaborators.

⇒ Internal syntax: non-integrated temporal/conditional clauses pattern with integrated CAC.

Conversely, *while*_{2a} PACs allow for main clause phenomena (see Haegeman 2012 for extensive illustration), and when recycled as speech event modifiers, *while*_{2a} PACs continue to allow for main clause phenomena:

- (44) a. While prejudiced she may have been, ultimately she remained fair in her evaluations.
b. A: but you are so prejudiced!
B: While prejudiced I may be, the appalling situation is not one that Biden created!

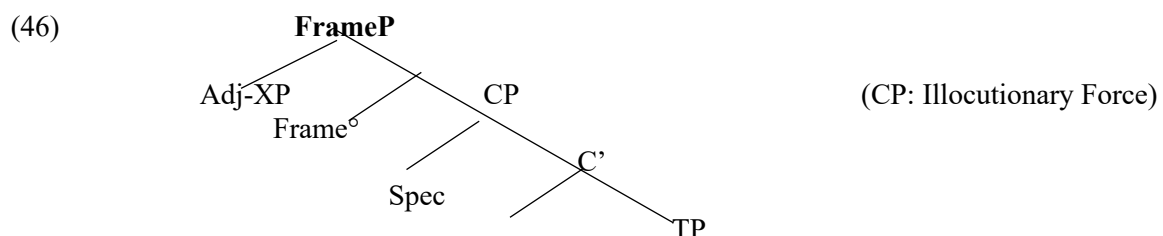
5.2.3. Coordination

- Frey's own German NiCs (2018, 2020) are argued to be unable to enter into coordination;
- Recycled non-integrated *while*₁ CACs ((1c)/(39b)) or non-integrated concessive *while*_{2a>2b} PACs (44b) functioning as speech event modifiers can be coordinated:

- (45) a. Before_{1>2b} we start, **and** while_{1>2b} you are all setting up your laptops, next week's class will be cancelled because Monday is a public holiday.
b. While_{2a>2b} I may be prejudiced in this area **and** while_{2a>2b} I actually do not have systematic evidence to support this, students nowadays spend more time on facebook than on reading.

5.3. Proposal: A unified syntax for non-integrated adverbial clauses

- Based on Greco and Haegeman (2018, 2020) this section aims at reconciling the diversity of readings associated with NiCs with Frey's hypothesis that they constitute an independent speech act, represented in the discourse configuration in (46).
- The merger of the extra-sentential constituent with the root CP is a **discourse** structuring ('framing') operation. It creates a specific discourse entity, **FrameP**.
- SpecFrameP is '**extra-sentential**', it is not 'syntactically integrated' in the associated clause.



- **Interpretation** of FrameP: SpecFrameP introduces an entity (or a set of entities) in the discourse; the proposition expressed by the associated (V2) root clause (=CP) is interpreted as relevant with respect to the entity or set of entities introduced by Adj-XP.

⇒ (46) **two speech acts:**

- An illocutionary speech act of *assertion, question, etc.*
- A speech act of *frame setting* (see Jacobs 1984, Endriss 2009, Ebert et

- al. 2014).
 - Frame setting is itself a discourse **operation**, it is a speech act and establishes a new topic by introducing a novel discourse referent X denoted by the adjunct constituent.
 - The associated main clause is a separate speech act in which discourse referent X may either be interpreted as part of the propositional content or as an independent referent related to the main assertion through the discourse.
- The FrameP hypothesis (46) is similar to a number of hypotheses in the **literature**, including, among others, Emonds's (2004) DiscourseP, Cinque's (2008) HP (Giorgi 2014, Frascarelli 2016), Koster's (2000) :P, DeVries (2009), and Griffiths and DeVries's (2013) ParP. Ideally, these should be unified, subject to further research.

6. The typology of adverbial clauses

- Starting point: Haegeman (1984, 1991):
ingredients:
 - **Binary classification**

| | | | |
|------|------------|-----------|--|
| (i) | Central | 1 (CAC) | e.g. temporal <i>while</i> |
| (ii) | Peripheral | 2a (PAC) | e.g. adversative <i>while</i> |
| | | 2b (PAC?) | e.g. speech event modifying <i>while</i> |

Note: 2a and 2b were **not** set apart.
 - Two **competing analyses**:
degree of integration/adjunction: TP-internal vs. TP-external
OR +/- **integration**

Each of these analyses was taken to apply indiscriminately to 2a & 2b

- Frey (2016, 2018): **ternary** classification

| | | | | |
|-------|-------|-----------------|---------|--|
| (i) | CAC | TP-internal | 1 | e.g. temporal <i>while</i> |
| (ii) | PAC | TP-external | 2a | e.g. adversative <i>while</i> |
| (iii) | NonIC | clause-external | a.o. 2b | e.g. speech event modifying <i>while</i> |
- A return to a **binary** classification

| | | | | |
|-----|---|-------------|----|-------------------------------|
| (i) | Integrated constituents/clauses, differentiated by the height of attachment | | | |
| | CAC | TP-internal | 1 | e.g. temporal <i>while</i> |
| | PAC | TP-external | 2a | e.g. adversative <i>while</i> |

Issue: what is the basis for the binary split? What is the role of TP, esp. if reinterpreted in terms of the Cinquean hierarchy in (37)? On the parallelism between adverbial clauses and PPs in relation to Cinque's hierarchy see also Schweikert (2005), Souza (2021), but also with respect to Krifka's articulated structures (2017).

 - (ii) Non-integrated constituents/clauses (merged in discourse syntax, cf. Haegeman and Greco 2018)
 - CAC-like speech event modifiers (= "1>2b")
 - PAC-like speech event modifiers (= "2a>2b")
 - CAC modifiers of root proposition
 - PAC modifiers of root proposition (not illustrated here)
 - ... ?
 -
- **Question for future research:**

- To what extent and how should **subtypes** of non-integrated (adverbial or other) clauses /constituents be distinguished in terms of their discourse syntax?
- Which adverbial clauses can only function as non-integrated clauses?

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