Adjunct = External Merge of XP right after the argment

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1 Introduction / Aim

- Interpreting Chomsky (2021, 2024)/(GK, MC), show how the notion "adjunct" derives from the system by adding a reasonable assumption for the Conceptual-Intentional interface (CI).
- External Merge into non-thematic positions is what underlies the descriptive notion adjunct.
- Pair-Merge –or any other comparable operation– is therefore dispensable (cf. Hornstein and Nunes 2008, Oseki 2015, Omune 2018a,b, 2019, Bode 2019, Nakashima 2021, McInnerney 2022 and Milway 2022 for previous attempts).

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2 The Miracle Creed framework – setting the stage

Principle T (MC)

"All relations and structure-building operations [. . .] are thought-related, with semantic properties interpreted at CI."

- The core semantic properties are expressed in the DOS:

Duality of Semantics / DOS (GK: 18)

External Merge (EM) provides theta structures.
Internal Merge (IM) provides discourse- and information-related structures.

- Interpretive functions at the CI- and Sensorymotor interface (SM) thus correlate with the mode of derivation (EM vs. IM).

! EM: "propositional," (yielding A-positions, informally speaking)

! IM: "clausal," (yielding $\bar{A}$-positions, informally speaking)

- Configurational Theta-Theory (CTT), cf. e.g. Hale and Keyser (1993, 2002): in the products of EM, structural configurations correspond to thematic roles
  - E.g., the complement of V is correlated with THEME/PATIENT and the like, and SPEC of [v VP] with AGENT and the like
  - In CTT thematic information is "read off" from the structural representation of the related elements.

→ Argument structure has a derivational aspect (EM) and a representational one.

IM-Condition / IMC

IM is restricted to θ-marked elements – only these are "eligible" for IM. (MC:7)

- IM "carries the derivation from the propositional [=argument domain] to the clausal domain" (MC:8) of discourse properties, establishing segregation between the descriptive domains of A and $\bar{A}$.

2.1 DOS-compliance: EM to +θ

- In (2-a) EM of NP_1 and V delivers a θ-position. DOS and CTT are in accord.

(1) Mary sees Bill.
   a. NP_1=*Bill*
   b. NP_2=Mary
   c. V=*see*

(2) a. [V NP_1] EM(NP_1, V)
   +θ
   b. [v [V NP_1]] EM(v, VP)
   c. [NP_2 [v [V NP_1]]] EM(NP_2, vP)
   +θ +θ
   d. [NP_2 ~~[v [V NP_1]]~~] Transfer vP
   +θ +θ

- NP_2 is part of the subsequent phase.
- Being part of distinct phases, NP_2 and NP_1 are interpreted as repetitions in a sentence like *Mary sees Mary*.

2.2 A DOS-violation: IM to +θ

- IM of NP_1 to SPEC of the vP-phase [v [V NP_1]] yields the representation (4), e.g. for ex. (3)

(3) Who did Mary see? (before the external argument *Mary* is introduced)
   a. NP_1=*who*
   b. NP_2=a copy *who* (or more formally, an inscription of *who*)
   c. V=*see*

(4) [NP_2 [v [V NP_1]]] IM(NP_1, vP)
   +θ +θ

(5) [$\boxed{NP_2}$ [v [V NP_1]]]
   +θ +θ

- NP_2 is in +θ-position, configurationally, but its derivational mode is IM, which by DOS must terminate in a -θ-position.

→ DOS and CTT are in conflict.

- MC gives a name to this conflict by stating that NP_2 gets "boxed" as in (5).

Conflict → resolution

Conflict between derivation and representation: IM of NP_2 into a θ-position.
Resolution: NP_2 is immune to θ-assignment (boxed).

- DOS "wins out" over CTT: *because* NP_2 entered a thematic position by IM, the position changes its status from
  - thematic
  - A-position
  - propositional

  to
  - non-thematic
  - $\bar{A}$-position
  - clausal (MC:9).
- Consequence: [NP_2 vP] is thematically unsaturated.
- IM-ing NP_1 has as interpretive consequences that NP_1 gets phonologically deleted and NP_2 boxed, i.e., its configurational θ-role is suspended in this position but remains to be "discharged."
- This way, there is no way to generate (6) to mean that Mary likes herself. The sentence violates θ-theory.

(6) *Mary likes.

2.3 DOS-compliance again: EM to +θ

- Continuation of (5): EM-ing NP_3 as in (8) is a harmonious CTT/DOS-situation, just as in (2-a) and (2-c):

(7) Who did Mary see?
   a. NP_1=*who*

b. NP_2=a copy *who* (or more formally, an inscription of *who*)
c. V=*see*
d. NP_3=*Mary*

(8) $[NP_3\ [_1\ \boxed{NP_2}\ [_2\ v\ [V\ NP_1]]]]$ EM(NP_3, vP)
+θ ← +θ

(9) $[NP_3\ [_1\ \boxed{\sout{NP_2}}\ [_2\ v\ [V\ \sout{NP_1}]]]]$
+θ ← +θ

- In (8) NP_3 is SPEC of [NP_2 vP] by EM and interpreted as +θ, since the θ-role of boxed (hence non-thematic) NP_2 goes to the next available (non-boxed) XP, i.e., NP_3 in (8).
- CTT is not static in that thematic roles are not defined once and for all, but can be altered derivationally.
- (8): the initially thematic position, the inner SPEC-vP shifts to being non-thematic since NP_2 entered the derivation by IM rather than EM, violating DOS.
- Consequently, the subsequently EM-ed NP_3 occupies the **derivatively thematic** position, the outer SPEC of vP.

Copy relation

- MC: NP_3 and NP_2 are segregated naturally, i.e., no copy relation between the two can be established: NP_2 cannot be the lower copy of NP_3: since NP_2 arrives at its position by IM and gets transferred along with NP_1.
- MC:16 proposes that $[_1$ "disappears from sight in the derivation" because NP_2 is created by IM and NP_3 is EM-ed as suggested by strikeout in (9).
- Consequently, NP_2 and NP_1 necessarily are interpreted as copies, not repetitions, because they are part of the same phase.
- This way, no "wrong" copy relation arises in topicalization structures like (10):

(10) Mary, Mary sees.

Wh-movement languages

- For the full derivation of an (English-style) wh-interrogative, C "consults" the boxed element for Externalization in SPEC-CP (cf. MC).

(11) EXT: *who* C ... $\boxed{NP_2=who}$
... $[NP_3=Mary\ [_2$ v $[V=see\ NP_1=who]]]$
+θ +θ

The EPP

- Steps (12-b)-(12-d):
  - EM of INFL,
  - IM of NP_3 to SPEC-INFL (EPP),
  - and EM of C.

(12) a. $[NP_3\ [_1\ \boxed{\sout{NP_2}}\ [_2\ v\ [V\ \sout{NP_1}]]]]$
+θ ← +θ

b. $[INFL\ [NP_3\ [_1\ \boxed{\sout{NP_2}}\ [_2\ v\ [V\ \sout{NP_1}]]]]]$
+θ ← +θ

c. $[NP_4\ [INFL\ [NP_3\ [_1\ \boxed{\sout{NP_2}}\ [_2\ v\ [V\ \sout{NP_1}]]]]]]$
+θ ← +θ

d. $[C\ [NP_4\ [INFL\ [NP_3\ [_1\ \boxed{\sout{NP_2}}\ [_2\ v\ [V\ \sout{NP_1}]]]]]]]$
+θ ← +θ

Good bye to successive cyclic movement

- In MC long distance Ā-movement is reinterpreted as a succession of consultation steps by each phase head which may be EM-ed higher up in the structure.
- Each phase head higher up accesses the interior of the boxed element for instruction and interpretation.
- Given the IMC, IM can only apply to NP_3 in (12-c)-(12-d), while NP_4 in (12-c)-(12-d) is exempt (as are NP_2 and NP_1, not least for reasons of PIC)

  → there is no successive-cyclic IM.[1]

- Each of the three steps in (12-a)-(12-d) raises very interesting questions for the DOS (cf. e.g., MC: 14-15), as does the implication that access by phase heads to the internal structure of boxed material is structurally unbounded.

[1] This is arguably more adequate, descriptively, than approaches which endorse IM of XPs into intermediate positions. The reason is that an approach completely insensitive to features of intermediate heads runs into empirical problems, cf. Georgi (2014), van Urk (2020), *pace i.a.* Blümel (2012, 2017), Chomsky (2013).

- Here we have nothing to say about these matters, including the issue of Externalization of wh-phrases in SPEC of C (or SPEC of v, island effects and other matters).
- Instead, we will focus on the way in which adjuncts are derivable within this system.

3 Deducing the notion 'adjunct"

- What kind of system would Language be without adjuncts/modifiers?
  - If anything, it would have to resort to paratactic expressions to express *Mary sleeps deeply.* (as 'Mary sleeps. The sleep is deep.' etc.).
  - The existence of adjuncts thus broadens the means of expressiveness at the CI-system.

  "Principle T is loose enough so that adjuncts could be included: taking modification to be within the broader category of extended theta roles [ETRs], including predication." (Noam Chomsky, p.c.)
- The notion ETR entails a differentiation between what we might call "core" thematic roles and the ETRs themselves.
- According to a traditional distinction, certain elements are obligatorily required by the verb (called arguments), while other pieces of information (e.g., modifiers of time, place, manner of event) can be added indefinitely, which however, are structurally optional.
- While the distinction is not without problems both as far as its syntactic characteristics and criteria goes, as well as their semantic characteristics,[2] the following considerations crucially rely on it.
- By positing ETRs, a continuity between core thematic roles and their extended counterparts is acknowledged.
- At the same time, elements occupying ETRs are by definition non-thematic, since the positions they occupy does not receive one of the core thematic roles.

"Adjunct" = EM into non-θ-position

EM-ing an element into non-θ-position is possible provided it bears ETR, confirming to Principle T.

Initial consequences and implications

- As before, this violation of DOS comes at a cost.
- Steps (15) and (16) continue (9). In (15) XP has been introduced by EM.

(14) What did Mary clearly see?, XP=*clearly*.

(15) [XP [NP_3 [NP_2 vP]]]
-θ +θ ←

(16) [XP [NP_3 [NP_2 vP]]]
-θ +θ ←

- Since the thematic potential of vP is exhausted, no configurational θ-role is available, thus XP occupies a non-θ-position.
- XP's derivational mode into the structure, however, is EM.
- Thus, CTT and DOS are in conflict. The system resolves the conflict by boxing XP, cf. (16).
- The box in (16) is to be understood as licensed by ETR.
- It has all the hallmarks of adjuncts: It occupies an $\bar{A}$-position, just as NP_2 in (5) does (MC: 8 correlates IM with $\bar{A}$, but -θ/boxing by EM is just as much an appropriate correlate of $\bar{A}$).
- It does not contribute to labeling, just as boxed NP_2 does not (cf. MC: 14-15), i.e., the target of adjunction "projects."

[2] How can we distinguish arguments from adjuncts at the CI-interface?
Within a Davidsonian semantics framework (cf. Davidson 1967) and possibly in line with ideas on their syntax (McInnerney 2022), we should not distinguish them: Both arguments and adjuncts are predicates, whose arguments include event variables. However, this framework does not straightforwardly carry over to a simple, binary theta-framework like our current interpretation of MC: theta-roles do not exist as primitives in the Davidsonian approach. They are just predicates of events, which are conjoined to the core predication. This, in turn, entails an unrestrictive theta-theory of the kind we try to avoid.

(13) John snores loudly.
$\exists e$ [SNORES(e) $\wedge$ AGENT(e, j) $\wedge$ LOUD(e)] (Neo-Davidsonian rendering, cf. Parsons 1990)

In prose: "There is an event, such that the event is a sleeping event and the Agent of the event is John and the event is loud." So theta-roles play no direct role and can be added indefinitely by predication+conjunction."

- Notice that throughout, we have not used pair-Merge or any comparable operation ("late Merge", etc.) to identify XP as an adjunct – it just falls out from the system without ado.
- Adjunction can thus be eliminated from the inventory of syntactic operations and Merge alone suffices: EM into -θ underlies the notion adjunct.
- Cf. important $\bar{X}$-theoretic precursors Lasnik and Saito (1992) who use substitution throughout and Kayne (1994) who uses adjunction throughout, now recast within a simpler system cleansed of many assumptions.

3.1 More consequences

- Ernst (2004: 13) summarizes

  > "[Chomsky's] (1995a:409–11, 421), more severe [stance] in this regard[=adjunction], [who] outlines a way in which adverbials are barred from adjoining to semantically active maximal projections, such as VP, but are allowed to attach to AgrP, IP."

- The current system effectively deduces an interpretation of this constraint.
- (17) with the interpretive options (17-a) and (17-b) as well as the non-option (17-c):

(17) [XP [YP [Z . . .]]]

a. EM EM → OK with YP interpreted as AGENT
   XP interpreted as adjunct
b. EM IM → OK with YP interpreted as wh/topic
   XP interpreted as AGENT
c. EM EM → *with YP interpreted as adjunct
   XP interpreted as AGENT

- Assume that Z in (17) is v*.
  - If YP is EM-ed as in (17-a) (conforming to DOS), YP is inevitably interpreted as AGENT/external argument and cannot possibly be interpreted as adverbial/adjunct (cf. ex. (1)). This follows from CTT.
  - Suppose YP reaches this position by IM as in (17-b) (violating DOS), then things are different, because YP gets boxed and YP's position is necessarily non-θ. In that case, it is XP which gets interpreted as External Argument, i.e., XP is in thematic position (see ex. (5)).
  - Having exhaustively considered EM and IM of YP and their interpretations at the CI-interface, there is no way to get adjunct-interpreted YP into the inner SPEC-vP below the External Argument. That is, (17-c) is excluded by the system, as adjunction occurs when the vP is still "semantically active" (hosting a θ-role not yet "discharged").

Adjuncts do not undergo IM

- Remember the IMC: By ascribing the CI-interpretation "adjunct" to the derivational option of EM-ing into [-θ]-position we automatically exclude the possibility that adjuncts can undergo IM (cf. Chomsky 1995). The reason is, simply, that application of IM is confined to elements in [+θ]-position (cf. MC).
- Evidence from adverbs: Ernst (2004: 43-44): what is plausibly the same adverb systematically receives different interpretation, contingent on position:
  - High position corresponds to subject-oriented or "clausal" interpretation (cf. the a-examples (18-a)-(23-a) below) while low position corresponds to manner readings (cf. the b-examples (18-b)-(23-b) below).
  - These two classes exhibit internal semantic variation in ways which need not concern us here, but the rough demarcation is robust enough.
  - To paraphrase just one such difference, (19-a) expresses the epistemic interpretation that it is evident to the speaker that they saw the sign.
  - Ex. (19-b), on the other hand, expresses that their perception of the sign was clear.

(18) a. Roughly, the plan will fail because they are all inexperienced.
     b. She laid out the plan roughly.

(19) a. Clearly, they saw the sign.
     b. They saw the sign clearly.

(20) a. Strangely, Jessica was explaining it.
     b. Jessica was explaining it strangely.

(21) a. Accordingly, they adjusted the angle.
     b. They adjusted the angle accordingly.

(22) a. Rudely, she left.

b. She left rudely.

(23) a. Abruptly, there was someone on the stage.
b. The curtain rose abruptly.

- Such a dependency of semantic interpretation is unexpected if the a-examples are derived from the b-examples by IM.
- If anything, we would expect the low readings to be reconstructible in the a-examples, i.e. to show some sort of semantic residue of its site of origin.
- The fact that we do not supports the idea that adjuncts do not undergo IM.
- In turn, this is expected if (a) adjunction is EM into [-θ]-position and (b) IM applies exclusively to elements in [+θ]-position (IMC).
- Being boxed, adjuncts are accessible for C for consultation.

(24) When did Mary show up?

3.2 An extension

- How to derive a modified unaccusative?

(25) [The leaves]$_1$ are falling t_1 slowly.

- Starting with (26), the internal argument NP=*the leaves* EM-s with V, yielding a harmonious DOS/CTT situation.
- EM-ing XP=*slowly* in SPEC-vP as in (27) introduces a conflict between DOS and CTT insofar as configurationally, the position is non-θ while the derivational mode of introduction into the structure is EM.
- As before, boxing repairs this situation, licensed by ETR as shown in (28).

(26) [$_1$ v [V NP]]
+θ

(27) XP [$_1$ v [V NP]]
-θ +θ

(28) $\boxed{\text{XP}}$ [$_1$ v [V NP]]
-θ +θ

3.3 On adverbs as complements, adverbially used NPs and other form-function mismatches

- Suppose that instead of NP in (26), an adverb is EM-ed in the complement position of V, DOS-compliant.
- Up to this point, we have not made reference to lexical properties of elements.
- The axiom underlying our approach is DOS and structural configurations (representational/CTT).
- No recourse to lexical properties of elements and ideally, we want to keep to this restrictive framework.
- So what goes wrong? A verb selects an AdvP and no principle of grammar is violated.
- As is standard, we assume that thematic roles are independent of categorical status, so there are no elements which are lexically [+θ] or [-θ].
- Plainly, there are no [+θ] or [-θ] elements.
- There are just elements.
- For example, CPs can be adverbial (adjunct) or argumental.
- Similarly, AdvPs or certain PPs can figure in what looks like complement positions of verbs; in any event, they are obligatory (Jackendoff 1972, and for recent discussion McInnerney 2022):

(29) a. John behaves *(well).
b. Lee dressed *(like a clown).

- AdvPs (and PPs) prototypically figure as adjuncts. Is the complement of *behave* a [+θ]-position? We do not know, but descriptively speaking, *well* appears to satisfy selectional requirements of *behave*.
- Conversely, NPs can figure as adjunct, even though they prototypically function as arguments:

(30) These days, John is traveling.

- Again, we want to methodologically keep the axioms as the only points of reference and minimize consideration of lexical properties, ideally abstract away from them altogether.
- This seems to be within the spirit of principles [S] and [T].
- Consider a configuration {v, {V, AdvP}}, where AdvP occupies [+θ].
- This yields gibberish like (31):

(31) #John devours well.

- Free Merge can generate the sentence and it obeys CTT and DOS – so no principle is violated.
- *Well* is interpreted like the thing that John devours, so we get the proper interpretation of THEME of V, in accordance with CTT and DOS.
- Nothing more needs to be said. Plainly, we do not want to exclude such cases, their awkward status notwithstanding.
- As for implicit arguments, we follow Collins (2024) in saying that they are syntactically represented.
- Thus in *John reads/writes well*, the complements of the verbs are occupied by a null NP:

(32) {V, NP=∅}
[+θ]

- Given NP is introduced into [+θ]-position (CTT) by EM (DOS), it is interpreted as an argument, as desired.
- How about the adverb *well*?
- This rehearses the theme above: EM-ing another AdvP is necessarily into [-θ], because configurationally, there is no θ-role in SPEC-VP, only in SPEC of [v VP].
- This violates DOS, because by DOS, EM of X should put X into [+θ]:

(33) {AdvP, {V, NP=∅}}
[-θ] [+θ]

- SPEC-VP is [-θ] according to CTT, i.e., representationally.
- However, the mode of introduction is EM.
- This creates the contradiction between CTT and DOS. As a solution to this contradiction AdvP gets boxed:

(34) {$\boxed{\text{AdvP}}$, {V, NP=∅}}
[-θ] [+θ]

- Boxing means AdvP is now an Ā-position, even though AdvP was EM-ed.
- Boxing thus salvages the contradiction which consists in EM-ing (subject to DOS) an element into [-θ] (CTT).
- Put differently, AdvP is an adjunct, as desired. In *John reads well*, (but not in the transitive/2-place interpretation of *John devours well*.).
- The adverbs are thus interpreted in different ways for principled reason.
- Probably *John devours well* also has the reading in which whenever John devours something, he does so in a good way: the generic reading. Insofar as that is available, the implicit argument derivation just sketched for *John reads well* applies.
- This way, we get the ambiguity.

3.4 Lebeaux-effects

- As is well known, there are reconstruction asymmetries between relative clause CPs (35) and complement of N CPs (36), commonly referred to as Lebeaux-effects (LEs).
- The basic observation is that relative clause CPs resist reconstruction as (35) suggests, while complement to noun CPs undergo reconstruction (descriptively speaking) as (36) suggests.

(35) Which claim that John$_1$ made did he$_1$ later deny?

(36) *Whose claim that John$_1$ likes Mary did he$_1$ deny?

- LEs have been used to argue in favor of "Late Merge" (Fox and Nissenbaum 1999; Fox 2002).

- The idea is that the relative clause CP in (35) is not present in the base as schematically shown in (37-a). Generally, adjuncts are Merged "late" as in (37-b), i.e. they enter the structure when wh-movement has already terminated.
- As a consequence, Principle C is bled, i.e. no violation arises.

(37) a. [he$_1$ v [deny which claim]]
b. Which claim [that John$_1$ made] did he$_1$ later deny

- This is different in (36), where the complement of N is introduced right in the base position and the Principle C-effect is caused at the start as shown in (38):

(38) [he$_1$ v [deny [whose [claim that John$_1$ likes Mary]]]]

- Notice that Merging the CP late as in (37-b) is a countercyclic operation (independently excluded, e.g., under the notion *Minimal Yield*, cf. GK).
- So even though the bleeding of the Condition C effect is elegantly explained, the conceptual price is fairly high.
- The current approach allows for a new descriptive generalization of these effects.
- Before presenting this, we note that things are more involved: Lebeaux (2000, 103) observes that there is what can be referred to as Condition C Anti-Reconstruction with wh-movement.
- The crucial contrast in (39) is (39-b) vs. (39-d).
- While (39-a) and (39-c) behave consistently with respect to observing Condition C, adjuncts appear to be sensitive to the position of their hosts.

(39) a. *He$_1$ believes the claim that John$_1$ is nice.
b. *He$_1$ likes the story [$_{ADJ}$ that John$_1$ wrote].
c. *Whose claim that John$_1$ is nice did he$_1$ believe?
d. Which story [$_{ADJ}$ that John$_1$ wrote] did he$_1$ like?

- Bleeding of Condition C in relative clauses seems to be tied to Ā-movement of the containing, modified NP.
- The effect comes about in (39-b) where the relative clause modifies the NP in its base position.
- Adjuncts cannot be generally Merged Late. Otherwise, (39-b) should be well-formed.
- Distribution of thematic/A-positions and their absence, assuming that relative clauses adjoin within NP:[3]

(40) he$_1$ believes $\overbrace{[\text{the claim}\underbrace{[\text{that John}_1\text{ is nice}]}_{+\theta/A}]}^{+\theta/A}$ → Binding

(41) he$_1$ likes $\overbrace{[\text{the story}\underbrace{[\text{that John}_1\text{ wrote}]}_{-\theta/A'}]}^{+\theta/A}$ → Binding

(42) he$_1$ $\overbrace{[\text{whose claim}\underbrace{[\text{that John}_1\text{ is nice}]}_{+\theta/A}]}^{-\theta/A'}$ [v believe → Binding

(43) he$_1$ $\overbrace{[\text{which story}\underbrace{[\text{that John}_1\text{ wrote}]}_{-\theta/A'}]}^{-\theta/A'}$ [v believe → no Binding

Condition on Binding

Binding is established if one element containing the bound expression is DOS-compliant.
Binding is obviated if all elements containing the bound expression are DOS-violating.

4 A remark on linearization at SM

"The central property of Externalization, whatever the SM modality, is linearization (only partial for sign), a condition imposed (we are assuming

[3] That is, we are not assuming a complement of D-analysis of relative clauses, raising or N-reprojection analysis as in e.g. Kayne (1994) and Donati and Cecchetto (2010). In these approaches the modified nominal head undergoes head-raising. The A- or Ā-status of the relative clause is unspecified.

here) by the non-linguistic SM systems. Linearization observes T in that the non-theta clausal system is external to the theta-based propositional system. Furthermore, it is typically to the left: there is a left-periphery but no right-periphery." (MC: 18)

- IM tranfers the propositional/+theta system to the clausal/-theta system.
- However in MC, Chomsky discusses only cases where elements occupy -theta by being IM-ed.
- Given that we propose that -theta can arise by EM, we expect linearization to be possible in right-peripheral positions.
- The placement of the adverb in (44) corroborates the general expectation.

  (44) Mary was having an interesting idea today.

- Moreover, we can shed light on the question why rightward adjunction is always in $\bar{A}$-positions. There is never rightward A-movement.

5 Conclusion

Our new approach to adjuncts dispenses with special operations but relies on EM into θ-positions only.

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