

# A Derived Coordination Approach to Asymmetric Coordination

Philipp Weisser  
philipp.weisser@uni-leipzig.de

## Claim:

A Derived Coordination Approach allows to account for cases of Asymmetric Coordination and still maintain the Coordinate Structure Constraint in its original formulation. It builds on the basic assumption that a clause can be base-generated as an adjunct and then be moved to the specifier of a coordination phrase. This account also offers a possibility to derive the patterns with extraction from only a subset of all conjuncts.

## 1 Introduction

The standard version of the Coordinate Structure Constraint (in (1)) was introduced by Ross (1967) to exclude examples like (2):

- (1) *Coordinate Structure Constraint (CSC)*: (Ross (1967))  
In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.
- (2) a. \*Which beverage<sub>1</sub> did Sam order the pizza and t<sub>1</sub>?  
b. \*This is the pizza<sub>1</sub> that Sam ordered t<sub>1</sub> and orange juice.  
c. \*Which beverage<sub>1</sub> did Sam order the pizza and Mary ask for t<sub>1</sub>?  
d. \*This is the pizza<sub>1</sub> Sam ordered t<sub>1</sub> and Mary ask for the orange juice.

However, already Ross noticed that some examples seem to violate the CSC:

- (3) Here's the whiskey<sub>1</sub> that I went to the store and bought t<sub>1</sub>.

More examples were found in Schmerling (1975); Goldsmith (1985); Lakoff (1986); Na and Huck (1992) and many others:

- (4) a. How much<sub>1</sub> can you drink t<sub>1</sub> and still stay sober?  
b. Who<sub>1</sub> did he pick up the phone and call t<sub>1</sub>?  
c. What problem<sub>1</sub> did he sit there for a while, start thinking about t<sub>1</sub>, get bored, and give up on t<sub>1</sub>?  
d. How many courses<sub>1</sub> can you take t<sub>1</sub> for credit, still stay sane and get all A's in t<sub>1</sub>?  
e. That's the stuff<sub>1</sub> the guys in Caucasus drink t<sub>1</sub> and live to be a hundred.  
f. Sam is not the kind of guy<sub>1</sub> you can just sit there, listen to t<sub>1</sub> and not want to punch t<sub>1</sub> in the nose.  
g. What<sub>1</sub> did he go to the store, buy t<sub>1</sub>, load t<sub>1</sub> in his car, drive home and unload t<sub>1</sub>?

In the light of these examples, one might be tempted to discard the Coordinate Structure Constraint (see e.g. Goldsmith (1985) and Lakoff (1986) for this position). However, it has very early been noted that the examples in (4) are fundamentally different from garden-variety cases of coordination wrt. the syntax and the semantics:

- All clauses must have the same subject and the same tense.
- Asymmetric Coordination Constructions receive an obligatory “one-event”-interpretation
- In all the examples above, we find a semantic asymmetry in the sense that one of the conjuncts semantically backgrounded, i.e. it serves as temporal, causal or adversative additional information.

➔ E.g. (4-a) can be paraphrased as *How much can you drink while still staying sober?*; (4-b) as *What did Harry buy when / after he went to the store?*; (4-f) as *That’s the stuff the guys in Caucasus drink so that they live to be a hundred.*

➔ On the basis of this observation, Lakoff (1986) following Schmerling (1975); Goldsmith (1985), proposes the following classification:

- **Type A-Scenarios:** The actions described in the clause sequence correlate to small subevents of one complex event. The “semantically subordinate” (Culicover and Jackendoff (1997)) conjunct sets the scene for the primary conjunct.

(5) What<sub>*i*</sub> did Harry go to the store and buy t<sub>*i*</sub>?

- **Type B-Scenarios:** The action described in the secondary “semantically subordinate” conjunct is an unexpected result of the event described in the primary conjunct.

(6) How much<sub>*i*</sub> can you drink t<sub>*i*</sub> and still stay sober?

- **Type C-Scenarios:** The actions in the primary and the secondary conjunct are in a causal relationship. The action of the primary conjunct inevitably leads to the action in the secondary conjunct.

(7) That’s the stuff<sub>*i*</sub> the guys in Caucasus drink t<sub>*i*</sub> and live to be a hundred.

- **Observation 1:**

In Type A-Scenarios, the “semantically subordinate”, i.e. backgrounded conjunct is always the first one while in Type B-, and Type C-Scenarios, it is always the second one. (see also Goldsmith (1985); Lakoff (1986); Na and Huck (1992))

- **Observation 2:**

Non-ATB extraction always affects the foregrounded conjunct. ATB-extraction may also affect backgrounded conjuncts. (cf. the Condition on Asymmetric Coordination in Na and Huck (1992) and similar observations in Goldsmith (1985); Höhle (1991); Nonato (2013) and to a certain degree in Lakoff (1986) but cf. fn. 2 in (de Vos, 2005, 24))

- (8) a. \*?How sober<sub>1</sub> can you drink a gallon of wine and still stay t<sub>1</sub>?  
 b. \*?Which phone<sub>1</sub> did he pick up t<sub>1</sub> and call John?  
 c. \*?What store<sub>1</sub> did he go to t<sub>1</sub> and buy whiskey.

## 2 Proposal

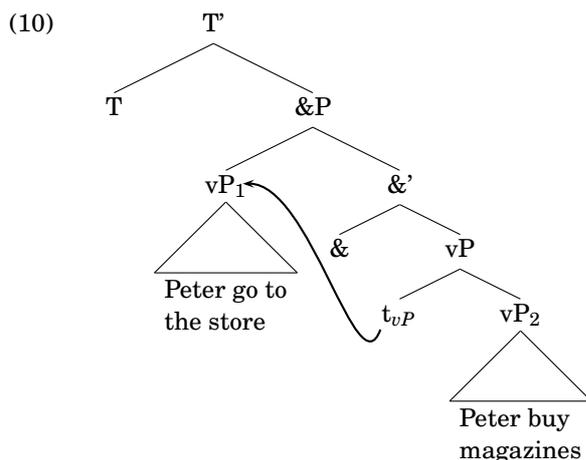
**In a nutshell:** Backgrounded conjuncts are merged in the same position as regular adjunct clauses. They are, however, raised to the specifier of a coordinate phrase yielding a structure which looks like a regular coordinate structure on the surface.

### Assumptions:

- Conjuncts within an asymmetric coordination chain are vPs.
- Backgrounded conjuncts are merged low in the structure in the same position where regular temporal, adversative, etc. clauses are merged (i.e. as adjuncts to vP).
- Coordination is asymmetrical as proposed in Munn (1987) and subsequent work. Also, I assume the standard approach to coordination, according to which the &-head takes both conjuncts as its arguments.
- Movement of an adjunct may target the specifier of the coordination phrase (contra te Velde (2005)).
- Coordinate Phrases (&Ps) are phases.

### 2.1 Sample Derivation of an A-Scenario:

- (9) Peter goes to the store and buys magazines.



- vP<sub>1</sub> is base-generated as an adjunct to vP<sub>2</sub>
- vP<sub>2</sub> is merged as the complement of an &P.
- vP<sub>1</sub> moves to Spec&P.
- The resulting structure looks like vP-coordination on the surface.

## 2.2 Extraction

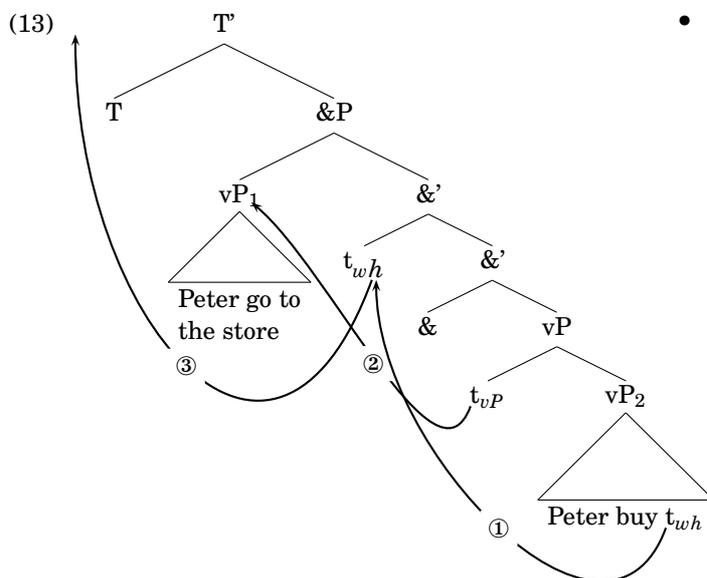
Since I assume the CSC (1) (or its theoretical reformulation in (11)) holds, extraction cannot proceed once the &P is complete.

- (11) Coordinate Structure Constraint (CSC):  
In a structure [ $\&P$  A [ $\&'$  & B ]], movement (out) of either A or B is prohibited.

Hence, extraction as in (12) must have applied *before* the first conjunct has moved to Spec&P.

- (12) What did Peter go to the store and buy?

- Extraction from the lower conjunct is grammatical because it is base-generated in a complement position.
- Extraction from the higher conjunct is ungrammatical because it is base-generated as an adjunct.



- None of the steps in (13) violate the CSC:

- ① At this stage of the derivation, no coordinate structure is present.
- ② Again, no coordination structure is present (yet).
- ③ At this stage of the derivation, the *wh*-element is no longer part of one of the conjuncts.

### Side Remark:

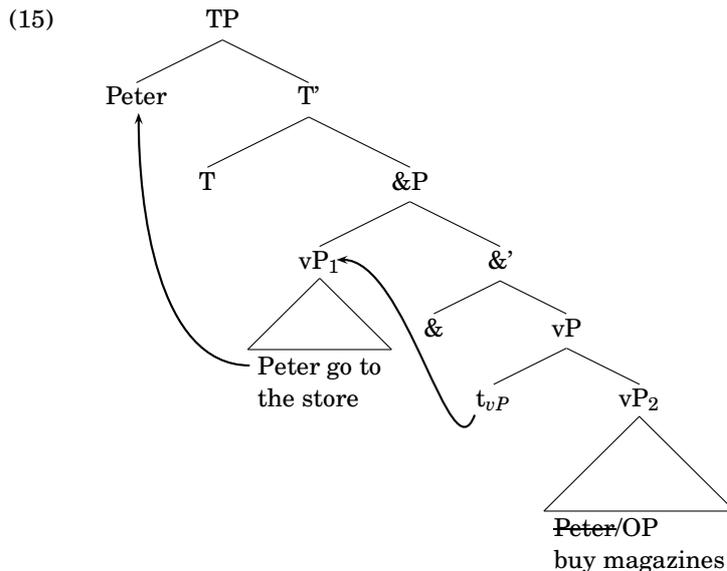
To prevent this derivation to be possible with regular coordination, an additional assumption is in order:

- (14) Merge over Move (MOM):  
If, at some point of the derivation, Merge and Move can both apply, then Merge always applies first.

This principle does not constrain the order of operations in cases of asymmetric coordination (because step ① and step ② are two instances of Move) but it constrains the order of operations with regular coordination since merging of the first conjunct must apply *before* the extraction out of the second conjunct (step ①). In this case, however, a coordinate structure is established and the CSC is violated.

## 2.3 ATB-Extraction

- In addition to single extraction, we need a second extraction mechanism: ATB-extraction
- In contrast to asymmetric single extraction, ATB-extraction applies to coordinate structures. Thus, extraction from the first conjunct is possible if it applies via ATB-fashion.
- Most current theories of ATB-movement (e.g. the operator account Munn (1993, 2001) or the ellipsis account (Salzmann 2012)) can derive this pattern.



### Side Remark:

In the present analysis, ATB-movement must necessarily violate the Freezing Principle since it must apply *after* the crucial movement of vP<sub>1</sub> to Spec&P. Note, however, that all current theories of ATB-extraction also violate a related principle, namely the Condition on Extraction Domains (Huang (1982)).

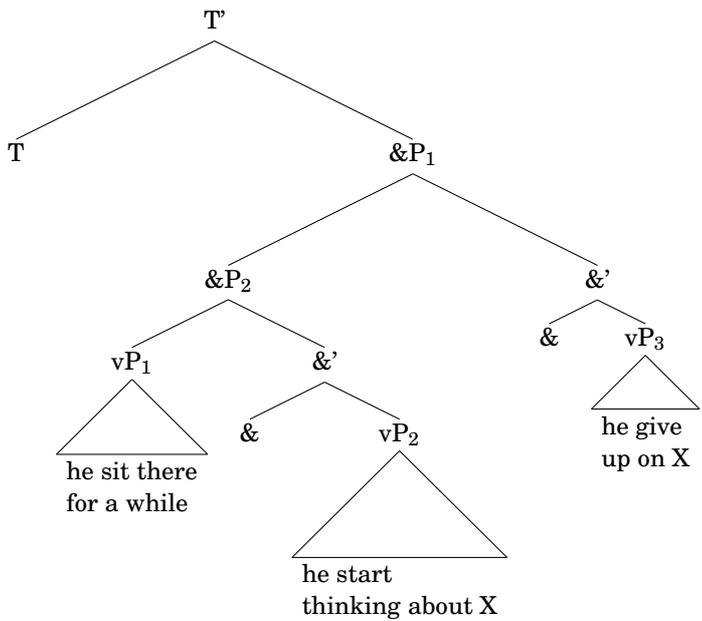
## 3 Extraction from a subset of the conjuncts

- (16) What problem<sub>1</sub> did he sit there for a while, start thinking about t<sub>1</sub> and give up on t<sub>1</sub>?

### Assumptions:

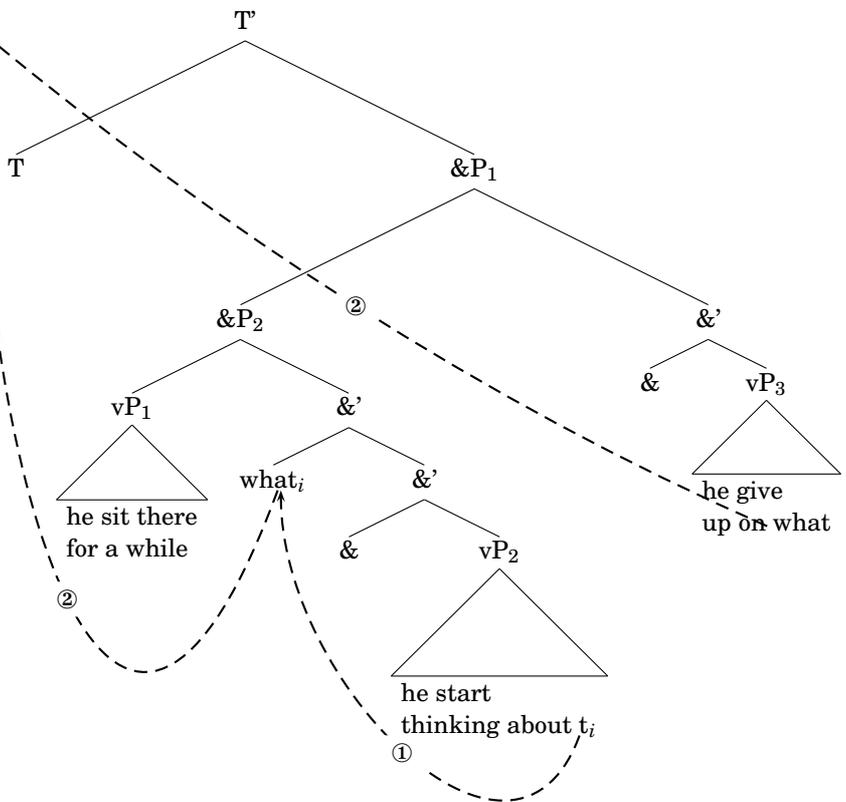
- Multiple conjuncts are modelled with nested &Ps. (see Johannessen (1998))
  - Accordingly, movement to Spec&P can occur recursively.
- Hence, in each &P, either asymmetric extraction or ATB-extraction can apply. That way, a combination of both movement types can derive the desired results.

(17)



- The left conjunct is complex consisting of a conjunction of two vPs, the right conjunct is simplex.
- Within the left conjunct (&P<sub>2</sub>), the subject (he) moves out in an ATB-fashion while the object (what problem/X) moves out in a non-ATB-fashion. (cf. step ① in (18).)
- In the complete conjunction (&P<sub>1</sub>), the subject (he) moves out in an ATB-fashion as does the object (what problem/X). (step ② in (18))

(18)



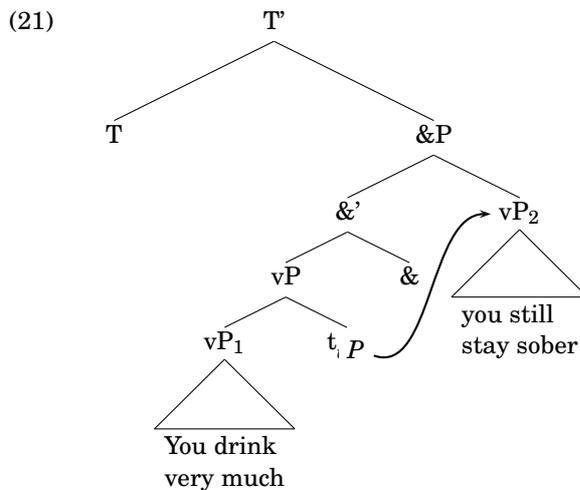
## 4 Type B and Type C-Scenarios

Type B- and Type C-Scenarios look exactly like Type A-Scenarios with the simple difference that the primary conjunct always appears on the left. Accordingly, extraction may only apply from the left conjunct (see Goldsmith (1985); Lakoff (1986); Na and Huck (1992))

- (19) a. How much<sub>1</sub> can you drink t<sub>1</sub> and still stay sober?  
 b. That's the stuff<sub>1</sub> the guys in Caucasus drink t<sub>1</sub> and live to be a hundred.

Hence, it seems plausible to assume that, even in English, there must be the mirror image of the standard coordination head:

- (20) You drink very much and still stay sober.



These kinds of coordinate heads have been argued for in Johannessen (1998); Zoerner (1995). For an overview, see Progovac (1998*a,b*).

**Question:** Why does the English &-head project to the left with Type-A Scenarios and to the right with Type-B Scenarios?

**Observation:** In Type-A Scenarios, the event described by the “matrix conjunct” always follows the event described by the “subordinate conjunct”. In Type-B and Type-C Scenarios, the order is vice versa.

➔ It seems that the head-parameter of &<sup>0</sup>s is context-sensitive and follows a principle like the following:

- (22) **Temporal Iconicity Principle:**  
 The order of the conjuncts must reflect the temporal order of events.  
 (cf. e.g. Jakobson (1971); Bjorkman (2010))

## 5 Mixed Scenarios

Also, we find cases in which different scenarios co-occur. This provides additional evidence for the assumption of nested &Ps.

(23) How many courses<sub>1</sub> can you take t<sub>1</sub> for credit, still stay sane and get all A's in t<sub>1</sub>?

(24) [<sub>A-Scenario</sub> [<sub>B-Scenario</sub> vP<sub>1</sub>, vP<sub>2</sub> ] and vP<sub>3</sub> ]

- Within the lower B-Scenario, there is non-ATB-extraction out of the primary conjunct (vP<sub>1</sub>).
- In the A-Scenario higher up, there is ATB-extraction out of both conjuncts.

## 6 Conclusion

I intended to show that...

- Asymmetric Coordination does not contradict the Coordinate Structure Constraint if one adopts the Derived Coordination Approach to Asymmetric Coordination.

In doing so, we can derive...

- asymmetric A'-extraction from the “matrix conjunct” of an Asymmetric Coordination Construction.
- cases of ATB-movement out of only a subset of the conjuncts if one additionally assumes a nested &P-structure.
- the approach argues against a unification of regular movement and ATB-movement since they are subject to different restrictions.
- the present approach sheds new light on differences between regular movement and ATB-movement (e.g. the latter is not subject to the Freezing Condition and the CED)
- The account provides evidence for the fact that the head parameter of at least the &-head in English is sensitive to other factors.

## Literatur

- Bjorkman, Bronwyn (2010), A syntactic correlate of semantic asymmetries in clausal coordination, in Y.Fainlaib, N.LaCara and Y.Park, eds, 'Proceedings of NELS 41', UPenn.
- Culicover, Peter W. and Ray Jackendoff (1997), 'Semantic subordination despite syntactic coordination', *Linguistic Inquiry* **28**(2), 195–217.
- de Vos, Mark (2005), *The Syntax of Pseudo-Coordination in English and Afrikaans*, University of Leiden. Centre for Linguistics.
- Goldsmith, John (1985), A principled exception to the Coordinate Structure Constraint, in W.Eilfort, P.Kroeber and K.Peterson, eds, 'Papers from the General Session at the Twenty-First Regional Meeting', Vol. 21, Chicago Linguistic Society, pp. 133–143.
- Höhle, Tilman (1991), Assumptions about Asymmetric Coordination in German, in J.Mascaro and M.Nespor, eds, 'Grammar in Progress: Glow Essays for Henk van Riemsdijk', Dordrecht: Foris.
- Huang, Cheng-Teh James (1982), Logical Relations in Chinese and the Theory of Grammar, PhD thesis, MIT, Cambridge Mass.
- Jakobson, Roman (1971), Quest for the Essence of language, in R.Jakobson, ed., 'Selected Writings Vol.2. Word and language', Mouton, The Hague.
- Johannessen, Janne Bondi (1998), *Coordination*, Oxford University Press, USA.
- Lakoff, George (1986), 'Frame semantic control of the Coordinate Structure Constraint', *CLS 22 - The parasession on Pragmatics and Grammatical Theory* pp. 152–167.
- Munn, Alan Boag (1987), 'Coordinate Structure and X-bar theory', *McGill Working Papers in Linguistics* **4**(1), 121–140.
- Munn, Alan Boag (1993), *Topics in the Syntax and Semantics of Coordinate Structures*, Doctoral Dissertation: University of Maryland.
- Munn, Alan Boag (2001), Explaining Parasitic Gap Restriction, in P.Culicover and P.Postal, eds, 'Parasitic Gaps', Cambridge MIT Press, pp. 369–392.
- Na, Younghee and Geoffrey Huck (1992), On extracting from asymmetrical structures, in 'The Joy of Grammar: A Festschrift for James D. McCawley', Amsterdam/Philadelphia, John Benjamins, pp. 251–274.
- Nonato, Rafael (2013), *Clause Chaining is asymmetric vP coordination*, lingbuzz/001912.
- Progovac, Ljiljana (1998a), 'Structure for Coordination (Part I)', *GLOT International* **3**(7).
- Progovac, Ljiljana (1998b), 'Structure for Coordination (Part II)', *GLOT International* **3**(8).

Ross, John Robert (1967), Constraints on variables in syntax, PhD thesis, Massachusetts Institute of Technology. Massachusetts Institute of Technology. Dept. of Modern Languages and Linguistics. Thesis. Ph.D.

Salzmann, Martin (2012), 'A derivational ellipsis approach to ATB-movement', *The Linguistic Review* (29), 397–438.

Schmerling, Susan (1975), 'Asymmetric conjunction and rules of conversation', *Syntax and Semantics* 3, 211–231.

te Velde, John (2005), *Deriving Coordinate Symmetries: A phase-based approach integrating Select, Merge, Copy and Match*, John Benjamins: Linguistics Today.

Zoerner, Ed (1995), *Coordination: The Syntax of &P*, Doctoral Dissertation, University of California, Irvine.