In Between Subordination and Coordination: A Minimalist Analysis of the Left Subordinating *and*-Construction

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Abstract

In Culicover and Jackendoff (1997), the left-subordinating and-construction is cited as one example of a literal mismatch between syntax and semantics because it seems to exhibit syntactic properties of coordinate structures and semantic properties of subordinate structures at the same time. Hence, as they conclude, this construction cannot be derived by frameworks such as Minimalism where the semantics is derived from some syntactic level of representation such as LF. I want to argue that it is possible to derive the specific properties of this construction under Minimalist assumptions if one adheres to a strictly derivational model of Minimalism and subscribes to the assumption that a clause can be base-generated as an adjunct low in the tree and then be moved to the specifier of a coordination phrase as the regular first conjunct of a coordination.

1. Introduction

Ever since Munn (1987) made the much acclaimed proposal that the structure of coordination is asymmetrical in nature in the sense that the first conjunct is higher in the structure and c-commands the second one, a lot of people have presented arguments in favor of that view (see e.g. Munn 1993, 1999, Kayne 1994, Johannessen 1998, Harbert and Bahloul 2002, Citko 2004, van Koppen 2006 and many others). Some of these arguments were based on theory-internal considerations, for example that all syntactic structures must be binary branching or that syntactic phrases must contain exactly one head.

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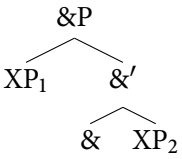
Other arguments were based on empirical findings. The empirical arguments in favor of the asymmetric coordination structure mainly circled around the topics of binding and partial conjunct agreement. In the light of these arguments it seems justified to say that one has reached a consensus on how the structure of coordination looks like[1]. There is one coordination head &, morphologically realized by the conjunction, which selects the second conjunct as its complement and the first conjunct as its specifier:

(1)



If (1) is in fact the right structure for a coordination and the postulated $\&^0$ is a normal binary branching syntactic head, then we would expect that there should in principal be cases of XP-movement to the specifier of this coordination phrase, at least from a syntactic point of view. However, as far as I know, this possibility has not been explored in the literature despite the fact that it seems an undesirable stipulation to say that a coordination head should be the only head to whose specifier movement is not possible. As is well-known, there are additional syntactic and semantic restrictions on the type of both arguments of a coordination head, so there may not be too many grammatical cases of movement to Spec&P but if these restrictions are met, movement to Spec&P should, in principle, be possible.

In the present paper, I argue that the so-called "left-subordinating and-construction" (Culicover 1970, 1972, Culicover and Jackendoff 1997), which exhibits properties of subordinate but also of coordinate clauses, is an instance of movement to the specifier of a coordination head.

I will proceed as follows: Section 2 illustrates the properties of the aforementioned left-subordinating and-construction. In section 3, I will outline the analysis by Culicover and Jackendoff (1997) and discuss its shortcomings and why it is radically incompatible with a Minimalist framework. Section 4 presents the assumptions I make and shows how, under these assumptions, the properties of the left-subordinating and-construction can be derived. Section 5 discusses some of the consequences of my approach, some of its ad-

[1] Although there is definitely no consensus on how this coordination phrase should be labelled. Proposals include &P, CoP, CoordP, andP, BP or BoolP. I will stick to the term &P.

vantages as well as potential problems and revisits the discussion within the broader context of rule interaction. Section 6 concludes.

2. The Left-Subordinating *and*-Construction

The left-subordinating and-construction (in what follows: LSand-construction) as well as the related "One more"- or OM-construction have been the subject of linguistic studies for several decades now (cf. Ross 1967, Culicover 1970, 1972, Lakoff 1986, Culicover and Jackendoff 1997, Takahashi 2004 among others). Both constructions are characterized by an apparent mismatch between syntax and semantics because, syntactically, examples like (2) look like cases of coordination but their semantics resembles the semantics of a conditional clause, which is generally assumed to be subordinate.

(2) a. You drink one more can of beer and I'm leaving.
LSand-construction
b. One more can of beer and I'm leaving.
OM-construction
c. If you drink one more can of beer, I'm leaving.
Conditional (Culicover and Jackendoff 1997: 197ff)

Culicover and Jackendoff (1997), who were, to my knowledge, the first to carve out the properties of these constructions in detail, observed that LSand-constructions may be used to paraphrase conditional clauses; however their distribution is much more restricted. For example, the conditional reading of these constructions is lost when they appear in perfect tense:

(3) You've drunk another can of beer and I've left.
(Culicover and Jackendoff 1997: 198)

Apparently, LSand-constructions cannot paraphrase irrealis conditionals. The same happens, when more than two conjuncts are involved. (4) does not mean the same as the conditional *If you drink another can of beer (and if) Bill eats more pretzels, I'm leaving.*.

(4) You drink another can of beer, Bill eats more pretzels, and I'm leaving.
(Culicover and Jackendoff 1997: 198)

Another important property of LSand-constructions is that they are restricted to TP/IP-coordination. The conditional meaning is lost when you conjoin either two CPs[2] (as in (5-b)) or two VPs (as in (5-c)).

(5) a. You know, of course, [$_{CP}$ that [$_{TP}$ you drink one more beer] and [$_{TP}$ you get kicked out]].
b. You know, of course, [$_{CP}$ that you drink one more beer] and [$_{CP}$ that you get kicked out].
(Culicover and Jackendoff 1997: 198)
c. You [$_{VP}$ drink one more beer] and [$_{VP}$get kicked out].

Even though LSand-constructions look like coordinate clauses on the surface, they share a lot of properties with the construction they paraphrase, namely conditional clauses. For example, conditionals and LSand-constructions can neither undergo Right Node Raising (cf. (6-b) and (6-c)) nor Gapping (cf. (7-b) and (7-c)). Normal coordinate clauses can (cf. (6-a) and (7-a)).

(6) a. Big Louie found out about _ and Big Louie put a contract on _, that guy who stole some loot from the gang. *Coordination*
b. *Big Louie finds out about _ and Big Louie puts a contract on _, that guy who stole some loot from the gang. LS*and-construction*
c. *If Big Louie finds out about _ , then Big Louie puts a contract on _, that guy who stole some loot from the gang. *Conditional*
(Culicover and Jackendoff 1997: 198f)

(7) a. Big Louie stole another car radio and Little Louie the hubcaps. *Coordination*
b. *Big Louie steals one more car radio and Little Louie the hubcaps. LS*and-construction*
c. *If Big Louie steals one more car radio, then Little Louie the hubcaps. *Conditional*
(Culicover and Jackendoff 1997: 198f)

[2] Of note is that in German the first conjunct seems to be a CP as it is verb-first.

(i) Fass mich noch einmal an und du bist tot.
touch me more once PRTC and you are dead.
'Touch me once more and you are dead.'

I will confine myself to the English data here. For an overview of the properties of the equivalent construction in German see te Velde (2005).

Also when it comes to binding, LSand-constructions behave like conditional if-clauses. An anaphor in the left conjunct of an LSand-construction may be bound by an antecedent within the second conjunct (cf. (8-a)). This parallels the behaviour of conditionals (8-b) but not the behaviour of normal coordination (8-c).[3]

(8) a. Another picture of himself$_i$ appears in the newspaper and John$_i$ will definitely go out and get a lawyer.
LSand-construction

b. If another picture of himself$_i$ appears in the newspaper, then Susan thinks John$_i$ will definitely go out and get a lawyer.
Conditional

c. *Another picture of himself$_i$ has appeared in the newspaper and Susan thinks John$_i$ will definitely go out and get a lawyer.
Coordination
(Culicover and Jackendoff 1997: 202)

The same picture can be found with respect to variable binding. An antecedent in the second conjunct can bind a variable in the first conjunct in LSand-constructions and conditionals but not in classical cases of coordination:

(9) a. You give him$_i$ enough opportunity and every senator$_i$, no matter how honest, will succumb to corruption. *LSand-construction*

b. If you give him$_i$ enough opportunity, every senator$_i$, no matter how honest, will succumb to corruption. *Conditional*

c. *We gave him$_i$ enough opportunity and every senator$_i$, no matter how honest, succumbed to corruption. *Coordination*
(Culicover and Jackendoff 1997: 204)

However, when it comes to extraction, LSand-constructions behave neither like coordinate clauses nor like subordinate conditionals. Unlike with coordinate clauses (cf. (10-a)), ATB movement out of an LSand-construction is, according to Culicover and Jackendoff (1997), "decidedly strange" (cf. (10-b)).

[3] As Culicover and Jackendoff (1997) show, there are several exceptions to the rule that an anaphor in the first conjunct can be bound, but all these exceptions equally hold for if-clause conditionals.

(10) a. This is the thief that you just pointed out _ and we arrested _ on the spot.
b. ??This is the thief that you just point out _ and we arrest _ on the spot. (Culicover and Jackendoff 1997: 206)

Asymmetrical non-ATB-movement out of only one conjunct, on the other hand, seems to be possible (and is only slightly degraded if at all) with $_{LS}$and-constructions, both from the left conjunct (as in (11-a)) or from the the right conjunct (as in (11-b)).

(11) a. ?This is the loot that you just identify _ and we arrest the thief on the spot.
b. ?This is the thief that you just identify the loot and we arrest _ on the spot. (Culicover and Jackendoff 1997: 206)

The data in (11) sets the $_{LS}$and-construction apart from both, if-clause conditionals as well as classical cases of coordination. With if-clause constructions, you can, of course, only extract out of the matrix clause since extraction out of the adjunct violates the Condition on Extraction Domain (CED) (cf. (12-a)). With classical coordination, you can neither extract out of the first nor the second conjunct since these kinds of extraction are forbidden by the Coordinate Structure Constraint (CSC) (cf. (12-b,c)).

(12) a. ??This is the loot that if you identify _ we will arrest the thief on the spot.
b. *This is the loot that you have identified _ and we have arrested the thief on the spot.
c. *This is the thief that you have identified the loot and we have arrested _ on the spot. (Culicover and Jackendoff 1997: 207)

Let us briefly summarize the peculiar properties of the construction: The $_{LS}$and-construction consists of two TPs connected by the usual conjunction *and*. Even though it looks like a coordination on the surface, the $_{LS}$and-construction behaves like a subordinate conditional clause with respect to Right Node Raising, Gapping and Binding. It behaves neither like coordination nor like conditional subordination with respect to extraction since it allows extraction out of both of these TPs but only one at a time. ATB-like movement out of both conjuncts is impossible.

3. The Analysis by Culicover and Jackendoff (1997)

The fact that LSand-constructions behave just like conditional clauses with respect to most of the tests in the last section might suggest that they are actually not coordinate at all, and one might think the conjunction *and* may also be used as a subordinator. Culicover and Jackendoff (1997) briefly discuss this possibility but discard it for three reasons.

First, they argue that if *and* was a subordinator, it would be a very strange one, at least for English because it would be the only clause-final subordinator that English has. All other complementizers or C-elements in general always appear in clause-initial position.

Second, they show that unlike other subordinate clauses, the subordinate clause of a LSand-construction must always appear in sentence-initial position. Other kinds of subordinate clauses can appear either sentence-intial, sentence-final or sometimes even within the main clause:

(13) a. *[S Big Louie puts out a contract on you, [S [S he sees you with the loot] and]].
(Culicover and Jackendoff 1997: 200)

b. Big Louie puts out a contract on you if he sees you with the loot.

c. If he sees you with the loot, Big Louie puts out a contract on you.

Third, assuming that *and* could be used as a subordinator as well does not solve all the problems because, as we saw in the last section, with respect to extraction, LSand-constructions neither behave like coordinate nor like subordinate structures. Hence, one would need an additional explanation for the fact that one may extract out of these kinds of adjuncts anyway.

Hence, Culicover and Jackendoff (1997) conclude that the analysis of *and* as a normal subordinator of English cannot be maintained. Instead they propose a completely new analysis. It is based on the assumption that the apparent mismatch between syntax and semantics is to be taken literally here. LSand-constructions are syntactically coordinate but semantically subordinate.

This assumption helps to solve the puzzle of the LSand-construction if one further assumes that all cases where the LSand-construction behaves like a coordinate clause are syntactic phenomena and all the cases where it behaves like a subordinate clause are semantic phenomena. This means, for example, that all kinds of binding (i.e. licensing of anaphors, variable binding) make

reference to semantics and ignore syntax completely. However, Culicover and Jackendoff (1997) are not explicit as to how these purely semantic principles can derive the data in (8) and (9). On the other hand, the fact that the semantically subordinate clause of a LSand-construction must always appear clause-initially is due to the fact that the whole construction is syntactically coordinate and extraposition of a first conjunct violates some syntactic principle.[4]

The question of extraction is a little bit more complicated because there are two constraints which restrict extraction, a syntactic one, namely the Condition on Extraction Domain (CED) and a semantic one, namely the Coordinate Structure Constraint (CSC). Since the LSand-construction is semantically subordinate (hence the CSC does not apply) and syntactically coordinate (hence, the CED does not apply), extraction from either conjunct is allowed. The LSand-construction is, so to speak, specifically designed to circumvent all constraints that restrict extraction. However, as we have seen, extraction out of LSand-constructions is not completely unrestricted since one cannot ATB-move out of a LSand-construction. Culicover and Jackendoff (1997) give no explanation for this fact, at least not an explicit one. As far as I can see, to save their account, they would have to assume that ATB-movement is a semantic process.[5] The following table gives an overview about which processes and constraints apply to which structure (or on the basis of which structure).

(14)

Syntax	Semantics
Extraposition	Gapping
CED	Right-Node Raising
	Licensing of anaphors
	Variable Binding
	CSC
	(ATB-Movement)

Whenever the LSand-construction patterns with conditional if-clauses with respect to some property, this property is a semantic property and whenever

[4] In its standard formulation the Coordinate Structure Constraint (Ross 1967) prohibits extraction of the first conjunct. However, since the Coordinate Structure Constraint is, according to Culicover and Jackendoff (1997), a purely semantic principle and does not apply to LSand-constructions, this ban on extraposition cannot be attributed to it.

[5] Another possibility would perhaps be to assume that ATB-movement is syntactic but it may only apply to semantically coordinate structures regardless of how the syntax looks like.

some property of the $_{LS}$and-construction patterns with coordinate clauses, the property must be a syntactic one.

However, the question is whether the classification of operations and constraints into these two distinct classes is empirically justified or merely stipulated to make the system work. Since the main purpose of this paper is to present an alternative analysis of $_{LS}$and-constructions, I do not want to delve too deeply into that discussion but it seems to me that the classification in (14) is, at least for some of the phenomena, far from uncontroversial. The question of whether binding theory (i.e. licensing of anaphors and variable binding) is a matter of syntax or semantics is still under debate. To my knowledge, it has not been possible to capture the complexity of the whole topic of binding theory by means of one module, either syntax or semantics. Hence, it seems problematic to just say that binding applies within the semantics without reference to syntactic structures at all. A similar point can be made for Gapping which is well-known to underlie a certain number of locality constraints (i.e. Gapping may not cross syntactic barriers. (cf. Hankamer 1973, Neijt 1979, Pesetsky 1982, Chao 1988, Hartmann 2000, Murguia 2004)). And since such locality constraints are usually thought to be syntactic in nature, it seems implausible that Gapping is a purely semantic process. In my opinion, this shows that the approach by Culicover and Jackendoff (1997) has very far-reaching and often undesirable consequences.

Apart from that, a note is in order about the relation of syntactic and semantic structure in the account of Culicover and Jackendoff (1997) in general. As we have seen, they try to show that the $_{LS}$and-construction is semantically subordinate and syntactically coordinate. And since these two states, namely being subordinate and being coordinate, are, according to Culicover and Jackendoff (1997), incompatible with each other within the same level of representation, they try to construct an argument for their hypothesis that syntax and semantics are two completely distinct levels and "that syntax is therefore autonomous in that it is not reducible to semantic structure, and semantic structure is not isomorphic to any level of syntactic structure such as LF" (Culicover and Jackendoff 1997: 196). This, of course, is incompatible with the standard model of Minimalism, where the semantics is built on the basis of syntactic structure.

I will, in the next section, show that it is possible to develop an analysis of the $_{LS}$and-construction that is consistent with the fundamental assumptions of Minimalist Theory and nevertheless captures all of its central properties.

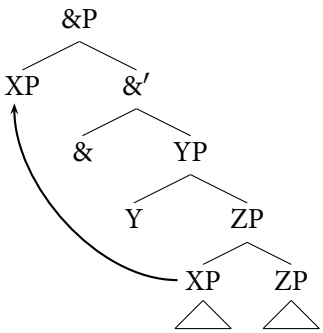
4. A Derivational Analysis of the Left-Subordinating *and*-Construction

4.1. The Main Idea of the Analysis

As we have seen in the previous sections, the $_{\text{LS}}$and-construction seems to exhibit subordinate and coordinate properties at the same time. And since it is generally assumed that a clause cannot be subordinate and coordinate simultaneously at the same level of representation , Culicover and Jackendoff (1997) concluded that the puzzling properties of this construction are due to a mismatch between syntax and semantics which, thus, must be two completely autonomous levels of representation.

I would like to argue instead that a derivational approach is particularly well-suited to derive the dual behavior of $_{\text{LS}}$and-constructions while still maintaining the standard view that the semantics interprets syntactic structures. A clause may start out as an adjunct, which accounts for its subordinate properties; through movement into &P, this clause becomes a conjunct and is therefore expected to also exhibit coordinative properties. (15) illustrates.

(15)



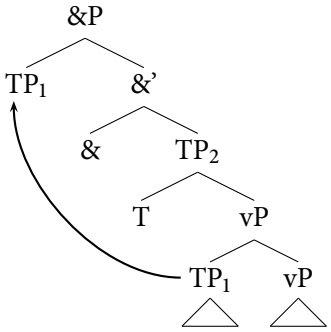
First, XP is merged as an adjunct to ZP. Later on, after ZP became the complement of YP, YP itself is merged with a coordination head & becoming the second conjunct of the coordination. However, unlike in normal cases of coordination, the first conjunct does not come into being via external merge but via internal merge (i.e. movement) of XP. Hence, with respect to processes that (may) apply early in the derivation, it may look like XP has subordinative properties even though it appears to be coordinate on the surface.

Let us make the move from the the abstract to the concrete. We have

seen in section 2 that LSand-constructions always involve TP/IPs.The conditional reading is lost with CP- and VP-coordination (recall the examples in (5)). The most natural way to account for fact that none of the conjuncts in an LSand-constructions may contain a complementizer but the whole LSand-construction may itself be embedded directly under a complementizer is to assume that XP and YP are mere TPs.[6]

Since the first clause of an LSand-construction has the interpretation of a conditional clause, I assume that it is base generated in the same position as normal conditionals. According to (Haegeman 2003: 326) event-conditionals[7] are merged "before the IP is completed", hence I take them to be adjuncts to vP. I conclude that the structure of LSand-construction looks as follows:

(16)



[6]It has been claimed in the literature that TPs cannot be moved in languages like English or German because one never finds stranded complementizers. However, as Abels (2003) shows, there is no general prohibition against the movement of TPs. Instead, what Abels (2003) argues for is that TPs can be moved if they are not directly embedded under a C-head. And since the TPs we are dealing here are not headed by CPs, I take this kind of TP movement to be unproblematic.

[7]Haegeman (2003) uses the term event-conditionals as opposed to premise-conditionals. Premise-conditionals cannot be paraphrased by LSand-constructions without losing the specific premise-conditional reading completely (if the clause is grammatical at all).

(i) a. If (as you claim) we are so short of teachers, we'd better send our children to Germany to be educated.
b. *We are so short of teachers and we'd better send our kids to Germany to be educated.

This follows under the present analysis if, as argued by Haegeman (2003), premise-conditionals are merged very high up in the structure (i.e. above TP). Hence, the position in the specifier of &P is not available for them.

A TP is merged as an adjunct to vP where clauses may receive conditional interpretation. Then, matrix T is merged building matrix TP (i.e. TP_2). In a next step, the coordination head & is merged taking TP_2 as a complement. Then, TP_1 moves out of TP_2 into the specifier of the coordination head. The whole coordination is then embedded either under a matrix C or a subordinate CP just as if we were dealing with a normal coordinate TP. The result is a complete $_{LS}$and-construction.

4.2. Deriving the Properties

In the previous section, we have seen how the analysis is supposed to work. The idea is simple: The conditional TP is base merged as a subordinate adjunct and then it is moved to the specifier of a coordination phrase yielding a structure which is, linearly practically indistinguishable from a coordination of two independent TPs. But how does this analysis derive the puzzling properties of the $_{LS}$and-construction?

4.2.1. Coordinative Properties

Let us have a look at the coordinative properties first. They are pretty straightforward. In contrast to the approach that Culicover and Jackendoff (1997) rejected, *and* is not a subordinator. Here it is the normal coordinator and thus it must always appear between the two conjuncts. Second, it is clear how we may derive the fixed order of both clauses. We have seen that the conditional clause must always precede the main clause. Here is why: The &-head used with the $_{LS}$and-construction is the exact same &-head we use with normal coordination. Hence, the first conjunct must always precede the second one because the specifier of the &-head is always on the left. Adjuncts may appear on the left as well as on the right of their hosts, specifiers may not. They obligatorily precede their respective heads, at least in English.

In other words: The coordinative properties of the $_{LS}$and-construction derive from the fact that the coordinative head is linearized as follows:

(17) Spec&P (i.e. first conjunct) > & > Comp&P (i.e. second conjunct).

Thus, we correctly predict a sentence like **and I'll leave, you drink one more can of beer* as well as **I'll leave, you drink one more can of beer and* to be ungrammatical. Furthermore, it follows that a sentence like *I'll leave and you*

drink one more can of beer cannot paraphrase a conditional clause like *If you drink one more can of beer, I'll leave.*

4.2.2. Tense Restrictions

LSand-constructions paraphrase conditional clauses. However, as we have seen in section 2, they cannot paraphrase all kinds of conditionals. They are restricted to present tense realis conditionals. Thus irrealis conditionals like the following cannot be paraphrased by LSand-constructions:

(18) a. If you found her number, you would give her a call.
b. If you had found her number, you would have given her a call.

I take this restriction on LSand-constructions to follow from the likeness condition the coordination head imposes on its arguments. If you try to turn the examples in (18) into LSand-constructions, you get the following:

(19) a. *You found her number and you would give her a call.
b. *You had found her number and you would have given her a call.

In (19) in both cases, the respective conjuncts differ at least in mood and tense. I assume that these differences are grave enough to rule out the whole construction. If you minimize the difference (by using the same mood) and provide a possible context, the result is much better.

(20) [Context: I am about to call Sam and ask him whether he found her number]
He has found her number and you give her a call.

Now I turn to the subordinative properties of the LSand-construction. It is clear that these cannot derive from linearization or other surface-oriented processes but rather must derive from processes which apply early on in the derivation, namely as long as the first TP is still a subordinate adjunct.

4.2.3. Binding

We have seen in section 2 that facts about licensing of anaphors and variable binding suggest that the first clause of LSand-construction is in fact subordinate, at least in some sense because, just as with subordinate conditionals, the

first conjunct of an $_{LS}$and-construction may contain an anaphor or a variable which is bound by an expression in the second conjunct.

In traditional binding theory, anaphors are always subject to the same constraint, namely Principle A of binding theory. Principle A roughly states that an anaphor must be bound within some locality domain by some antecedent. According to Belletti and Rizzi (1988) and much subsequent work, Principle A has the status of an "anywhere condition" which means that it can be satisfied at any step of the derivation.

This essentially derives why the first conjunct of an $_{LS}$and-construction behaves completely identical to subordinate conditionals with respect to binding of anaphors and variables. Conditional clauses and $_{LS}$and-constructions are base generated in the same position in the tree. In that position, all anaphors and variables can be bound and hence, Principle A is satisfied for the rest of the derivation, regardless of whether the conditional clause stays in situ (as in if-clauses) or whether it moves higher up in the tree (as in $_{LS}$and-constructions). Take a look a the example in (8-a), repeated in (21).

(21) Another picture of himself appears in the newspaper and John will definitely go and get a lawyer.

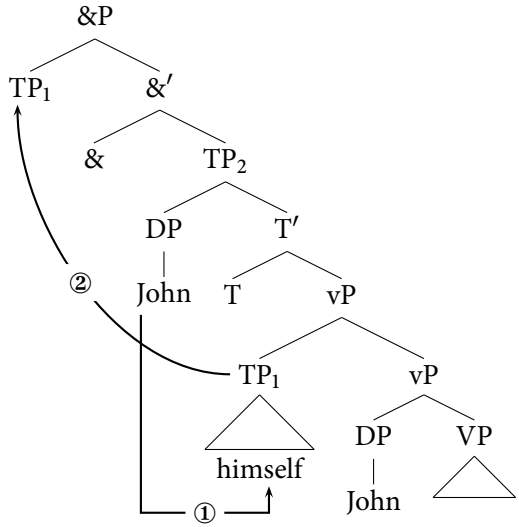
As long as *Another picture of himself appears in the newspaper* is in its base position as an adjunct to the vP of the matrix clause, the anaphor can be bound by the matrix subject *John*:[8]

[8] In the example in (21) it looks as if mere c-command is sufficient to derive the data which show binding into a vP adjunct. However, it should be noted that this cannot be the whole story as there are examples where an embedded subject may also bind into a vP-adjunct. Also, we also do not encounter a Principle C effect in example (i-c).

(i) a. Another picture of him(self) appears in the newspaper and Susan thinks John will definitely be offended.
b. Another picture of him(self) appears in the newspaper and an early retirement will begin to appeal to John. (Culicover and Jackendoff 1997: 202)
c. Another picture of John appears in the newspaper and he will be offended.

Culicover and Jackendoff (1997) speculate that there is an additional requirement of a logophoric relation that enables to establish a binding relation. They take this as an argument that the whole binding theory should be dealt with in the semantics. However, this is not the only way to go as Landau (2001) and others have shown that logophoric relations can and maybe even should be dealt with in the syntax. I am taking a more moderate stand here in that I am saying that the effects of binding theory are partly syntactic and partly semantic. If,

(22)



The fact that after binding has applied the whole TP_1 is moved to the specifier of the &P does not change anything about the binding relation.

4.2.4. Gapping

The next property which suggests that the first conjunct of an LSand-construction is subordinate is Gapping. LSand-constructions and subordinate conditionals cannot undergo Gapping whereas normal coordinate clauses can (cf. (7)). In the literature about Gapping, there is no agreement as to whether Gapping should be derived via ellipsis (Sag 1976, Hankamer 1979, Jayaseelan 1990, Hartmann 2000, Coppock 2001, Lin 2002 etc.) or ATB-movement (cf. Johnson 1996, 2009). However, regardless of the respective type of analysis, the more recent approaches to Gapping (e.g. Coppock 2001, Lin 2002, Johnson 1996, 2009) seem to agree that a prerequisite for Gapping is relatively low coordination, namely vP-coordination. This, among other things, accounts for scope effects where negation and modals take scope over the whole coordination. If, however Gapping can only apply with vP- or VP-coordination, it is not surprising that it is impossible with LSand-constructions which, as we have seen, involve TPs.

however, it turned out that we are dealing with a case of semantic binding here, this would still be compatible with the present analysis.

4.2.5. Right Node Raising

The same explanation, however, cannot be extended to the ban on Right Node Raising in LSand-constructions (cf. example (6)). Right Node Raising is generally possible with TPs or even bigger categories:

(23) He said that I saw _ and that Bob didn't see [the man in the long black coat].

Analog to the case of Gapping, it is not clear whether Right Node Raising should be derived via ellipsis or via ATB-movement. Both approaches have been proposed in the literature (see e.g. Wexler and Culicover 1980, Kayne 1994, Wilder 1997, Hartmann 2000 for ellipsis and e.g. Ross 1967, Hudson 1976, Postal 1998, Sabbagh 2007, 2008 for ATB-movement.)[9].

The fact that LSand-constructions cannot undergo Right Node Raising might speak in favor of the movement approach because if we take Right Node Raising to be an instance of ATB-movement, we have an explanation why it cannot apply to LSand-constructions. Consider the following situation in (24).

(24) $[_{\&P}\ TP_1\ [_{\&'}\ \&\ [_{TP2}\ T\ [_{vP}\ t_1\ vP\ ]\ ]\ ]\ ]$

We have a coordinative head & with both its arguments and one of these arguments was merged via internal merge (that is, (24) is an LSand-construction). Suppose that both TPs do have the same object and hence we want to apply ATB-movement to the right, then we would have to move out of a moved category (i.e. TP_1). However, there are many cases reported in the literature where moved categories are frozen (i.e. no longer transparent for extraction) once they have reached in their final landing site. (On freezing in general see Wexler and Culicover 1980, Browning 1991, Collins 1994, Müller 2010.) There has been an extensive discussion about whether certain structural positions are criterial positions in the sense of Rizzi (2004), which means that movement of an XP into these positions renders that XP intransparent (for a short overview of this discussion see Müller 2010). I will discuss the question of freezing with respect to this analysis of the LSand-construction in a later sec-

[9] It should be noted that there are other approaches to Right Node Raising, e.g. by means of multidominance (Wilder 1999, Abels 2004). However, I will not discuss them here.

tion in more detail but for our purposes here, it is sufficient to note that the specifier of an &-head seems opaque for extraction if it was moved there.[10]

So, in a nutshell, if we adhere to the movement analysis of Right Node Raising, it is to be expected that LSand-constructions cannot undergo Right Node Raising. Before the first conjunct TP is moved to Spec&P, it is in an subordinate position from where Right Node Raising is generally prohibited (cf. (6-c)) After the TP is moved, it is frozen. Hence, further movement out of this TP is prohibited. And since Right Node Raising is, by assumption, movement, it cannot apply to LSand-constructions.

4.2.6. Extraction

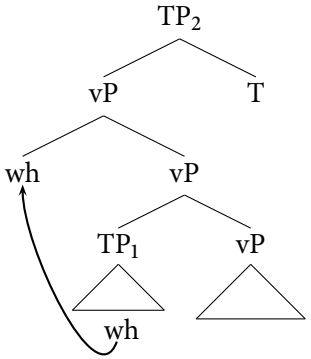
In section 2, we saw that LSand-constructions show a very strange behaviour with respect to extraction: They behave neither like subordinate clauses nor like coordinate clauses. First, even though they seem to be coordinate on the surface, they cannot undergo ATB-movement. Second, one may asymmetrically move out of the first conjunct (i.e. the former adjunct clause) and third, one may also move out of the second conjunct (i.e. the underlying main clause). I will provide answers for each of these three properties step by step.

The answer to the question why LSand-constructions cannot undergo ATB-movement has already been given above. It was shown that LSand-constructions cannot undergo Right Node Raising if Right Node Raising is derived via rightward ATB-movement. The reason was that this movement tries to extract out of a frozen category, namely the first conjunct TP. And if rightward ATB-movement results in ungrammaticality, then leftward ATB-movement does so for the exact same reasons.

Second, we must face the question why we can extract out of the first conjunct, i.e. the former subordinate clause. In the paragraphs on Right Node Raising and ATB-movement above, it was shown that movement out of a moved category is ungrammatical. Asymmetrical extraction out of the first conjunct cannot take place after the TP has already moved to Spec&P because it would encounter the same problems as with ATB-movement. Hence, the crucial movement step must have applied earlier, namely as long as the TP is in its base position as an adjunct to vP. The tree in (25) illustrates the situation:

[10] Note, however, that the specifier of an &-head is not opaque per se since there are, of course, cases where one can easily move out of an XP which is base generated in Spec&P, for example via ATB-movement.

(25)



In its base position, TP_1 is adjoined to the vP of the matrix clause. It is in that position, that movement of the wh-pronoun out of the adjunct applies. If it applied later in the derivation, this step would encounter a violation of the Coordinate Structure Constraint, but at this point, there is no coordinate structure present (yet). The immediate question that this step raises is, of course, why this movement does not violate the Condition on Extraction Domains (Huang 1982), which usually prohibits movement operations out of (among other things) adjuncts. However, as has been shown by Taylor (2007) for English as well as Etxepare (2002) for Spanish and Yoshida (2006) for Japanese, if-clause conditionals can be transparent for extraction when they precede the matrix clause. This is illustrated in (26) for English:

(26) a. [Which car]$_1$ does Michelle believe if she buys t_1, her insurance premium will increase?

b. ?This is [the kind of car]$_1$ that if Michelle buys t_1, her insurance premium will increase.

(Taylor 2007: 189)

This is exactly the same configuration as with the first clause of $_{LS}$and-constructions in their base position: Left-adjoined event-conditionals. Even though the general question why the sentence-initial if-clause conditionals do not obey the CED (at least in some cases) still lacks a satisfactory answer, the data in (26) strongly support the view that extraction out of the first clause of an $_{LS}$and-construction may apply as long as it is in its base position. Hence, we may extract an element out of TP_1 as long as TP_1 is in its base position.[11]

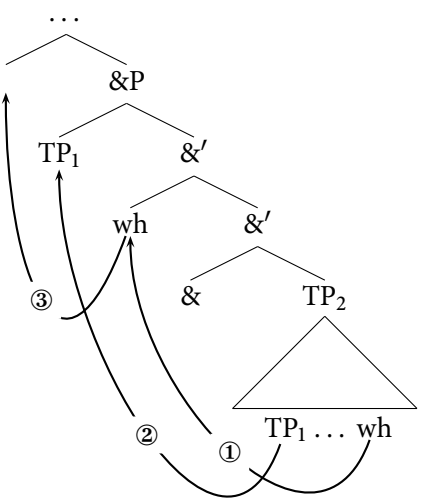
[11] The derivation that involves asymmetric extraction out of the first conjunct of an $_{LS}$and-

This brings us to the final question, namely how we can extract out of the second conjunct, i.e. TP_2. Let us, for explanatory purposes, assume a simplified version of the Coordinate Structure Constraint like the following:

(27) In a structure [A [$_{\&'}$ & B]], movement out of either A or B is prohibited.

If we take (27) as a basis, we might envision a possible derivation which derives an $_{LS}$and-construction with extraction out of the second conjunct but still does not violate the Coordinate Structure Constraint as formulated in (26). It is given in (28) below:

(28)



After TP_2 is merged as the complement of the &-head, we do have two possibilities as how to proceed. The first possibility is to move TP_1 out of TP_2 into the specifier of &P. Once this is done, a complete coordinate structure is generated and subsequent movement of the wh-phrase out of TP_2 would violate the

construction is highly reminiscent of the "chain interleaving" derivation in Collins (1994). However, in contrast to the case there, we want the chain interleaving derivation to converge since this asymmetric extraction generally seems to be possible. To exclude the convergence of his derivations as in **Who did a book about cause a scandal?*, Collins (1994) invokes a transderivational economy constraint, a quite controversial concept itself. At this point, I have no satisfying explanation for why the chain interleaving derivation is prohibited in the examples by Collins (1994) but allowed in the case of $_{LS}$and-constructions.

CSC as formulated above (27). Hence, this possibility leads to a crash of the derivation. There is another possibility which is to move the wh-phrase into an intermediate position[12] (= step 1 in (28)) and subsequent movement of TP_1 (= step 2 in (28)). Since step 1 does not complete the &P (probably because the &-head contains another selectional feature to merge the first conjunct), the CSC does not yet apply. Hence step 2 is still licit. The final step now is to further move the wh-pronoun to a higher position in the tree (= step 3 in (28)). This step also does not violate the CSC because at that point the wh-phrase is no longer part of one of the conjuncts. But since the Coordinate Structure Constraint also prohibits movement of a whole conjunct, it must be ensured that the wh-phrase does not count as a conjunct for the CSC while being in the specifier of the &P. The reason for that might be that the wh-phrase itself contains features which signal that it is not a proper conjunct. Another possibility might be the fact that the wh-phrase has been attracted by a category-neutral edge feature (and not by a c-selectional feature like a proper conjunct) on the &-head shows that the wh-phrase is not a proper conjunct and hence may be moved out without violating the CSC.

A final note about the derivation in (28) is in order. In (28), we successfully circumvented a violation of the CSC but still managed to extract out of only one conjunct. The immediate question that comes to mind is, of course, why this kind of derivation is not possible with "normal" clausal coordination. If this derivation was possible with all kinds of clausal coordination, it would always be possible to circumvent the CSC. This would be equivalent to saying that one could always move out of the second conjunct of a coordination. Hence, we do have to distinguish normal coordination and coordination in case of $_{LS}$and-constructions. With normal coordination circumventing the CSC is impossible, with $_{LS}$and-constructions, it is possible. I argue that the difference lies in the fact that the first conjunct of $_{LS}$and-constructions comes about via Movement. With normal coordination, the first conjunct is the result of (External) Merge. To be more concrete, I assume a well-known principle that regulates the order of operations and distinguishes these two syntactic

[12] I assume here that the wh-phrase must cyclically move through the specifier of the coordination phrase. This is basically equivalent to saying that &P is a phase (cf. Reich 2007 for the same assumption).

operations: The Merge-over-Move Principle (Chomsky 1995, 2000, Castillo et al. 2009).[13,14]

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

The exact point of the derivation which is of interest here is when the &-head and TP_2 have been merged. As I illustrated above, with $_{LS}$and-constructions, we do have two possibilities. Either we first move TP_1 and then we move the wh-phrase (which leads to a violation of the CSC) or we move the wh-phrase first and then we move TP_1 (which leads to a circumvention of the CSC). Here, the two operations in competition are two instances of Movement. Hence, the MOM does not regulate their relative order, both orders are possible.

So let us imagine a similar situation with "normal", clausal coordination. We have merged the &-head with the second conjunct. If the second conjunct contains a wh-phrase, we also have two possibilities of how to proceed. Either we first move the wh-phrase and then we merge the first conjunct (which would circumvent the CSC) or we first merge the first conjunct and only then we move the wh-phrase out of the second conjunct (which violates the CSC). Here, the two operations in competition are one instance of Merge and one instance of Move. Hence the MOM forces Merge to apply first. However, if Merge applies first, we encounter a CSC violation in the second step. So, asymmetric extraction out of the second conjunct of normal coordinate clauses either violates the CSC or the MOM and is hence prohibited.

[13] I leave the fact aside that in many recent publications, Merge and Move are assumed to be instances of the same operation: Move is to be seen as Internal Merge while Merge is External Merge. I take it that even though these two operations share a common label nowadays, it must be possible to distinguish them at least at a certain point of the derivation.

[14] Note that in the way the MOM is formulated here, it is a transderivational constraint as originally implemented by Chomsky (1995, 2000). However, the version in (29) can be easily implemented without making use of transderivational constraints. In its original version (Chomsky 1995), the MOM was supposed to distinguish between two distinct derivations, one which makes use of Merge and one which makes use of Move. These derivations compete because both Merge and Move may satisfy the crucial feature. In the present case, there is only one derivation in which both operations are applied (because they are induced by two distinct features) and the MOM only restricts the order of their application. Such ordering may be implemented via ordering of operation-inducing features as in Müller (2010), Georgi (2013). Thus, no transderivational constraints are necessary.

4.3. Interim Summary

In the preceeding section, I proposed a new approach to the puzzling LSand-construction, which has led Culicover and Jackendoff (1997) to question one of the fundamental assumptions of the Minimalist Program and related syntactic theories, namely that the semantics of an utterance is calculated on the basis of its syntactic structure. I have argued that it is possible to derive the LSand-construction including all of its puzzling properties and still adhere to Minimalist assumptions.

The analysis I proposed was based on the novel idea that a phrase is base-generated as an adjunct and then moved to the specifier of a coordination phrase. In doing so I was able to derive the fact that LSand-constructions combine subordinative and coordinative properties. In particular, I showed that the analysis is able to account for the properties of LSand-constructions with respect to surface word and clause order, binding of variables and anaphors, Gapping, Right Node Raising and extraction patterns.

In the next section, I want to discuss some open questions and issues of this analysis, but before that, let me just briefly add a note about all the analyses of specific properties above. Some of the specific properties of LSand-constructions such as the binding facts, for example, basically fell out of the analysis I proposed. Others, such as the analyses for Right Node Raising or extraction, needed some additional assumptions. However, it should be emphasized that none of these additional assumptions is crucial for my analysis. If, for example, it turned out that Right Node Raising is better analysed as ellipsis instead of ATB-movement as I assumed, one will have to go one step back and look deeper into existing analyses of RNR as ellipsis and see whether they predict that RNR should be applicable to LSand-constructions or not. The only assumption which is crucial for the present approach is that a movement operation may turn an adjunct into the first conjunct of a coordination phrase.

5. Open Issues and Questions

5.1. Triggering Movement to Spec&P

Up to this point I have been neglecting the question what triggers the movement of the adjunct to Spec&P in the first place. There are certainly several, purely technical solutions as to how this kind of movement can be imple-

mented in a standard Minimalist model. But the solution that I want to sketch here maybe captures one's intuition about the construction as such, namely that this movement of the adjunct might be some kind of Last Resort phenomenon.

LSand-constructions are special with respect to their categorial status. Usually adjuncts are either said to be full finite clauses, i.e. CPs, or they are reduced clauses, which are often assumed to be vPs, at least in English. In both cases, adjuncts are typically phasal categories in the sense of Chomsky (2001) and many others. In the case of LSand-constructions, the adjunct in question is, as we have seen in section 2, a TP, which is generally assumed to be a non-phasal category. Maybe this categorial difference also accounts for the fact that these TP adjuncts must move to Spec&P because they are not licensed as adjuncts. If adjuncts must have phasal status for reasons of interface requirements, then these TP adjuncts are doomed to ungrammaticality unless they move to Spec&P because in that position they no longer count as subordinate adjuncts. This explanation may find support in the fact that the movement in question is not possible with CP adjuncts for example.

(30) I don't think that he has one failed attempt and that he gets kicked out.
≠
I don't think that if he has one failed attempt, then he gets kicked out.

The mechanism I sketched in section 4 is, in principle, not restricted to TPs. So far, there is nothing that precludes CPs or vPs to undergo the same process. However, if the whole movement to Spec&P is modeled as a Last Resort process to avoid the ungrammaticality of TP-adjuncts, we would have an explanation for the non-existence of LSand-constructions with CP-, and vP-coordination.

This process could be implemented into the feature specification of the coordinative &-head as an optional feature which attracts an XP and moves it to its specifier if it cannot be licensed elsewhere, i.e. if it cannot be transfered to the interfaces because of its non-phasal status. Another possibility would be to implement the movement of the adjunct as a repair-driven movement induced by local optimization processes (as proposed by Heck and Müller 2000).[15]

[15]Note however that this solution must, like all implementations as Last Resort phenomena,

5.2. Freezing

In this section, I want to briefly adress the notion of "freezing" and the way it is to be understood throughout this paper. In the discussion above the concept of freezing played a role in two unrelated derivations. First, it was of importance in the discussions about ATB-movement and Right Node Raising. LSand-constructions cannot undergo ATB-movement or Right Node Raising (under the assumption that RNR is an instance of rightward ATB-movement) because previous movement of the TP into the specifier of the &-head freezes all elements within that TP. Hence, the concept of freezing was needed to exclude examples like (6-b), repeated in (31).

(31) *Big Louie finds out about _ and Big Louie puts a contract on _, that guy who stole some loot from the gang.

Second, the concept of freezing played a role in the derivations of asymmetrical extraction from the left conjunct. On the surface, a sentence like (11-a), repeated in (32), also looks like it violates the freezing principle because the extracted DP *loot* c-commands its trace/copy/base position which itself is contained in a moved category (TP_1).

(32) ?This is the loot that [$_{TP1}$ you just identify _] and [$_{TP2}$we arrest the thief on the spot].

The difference between these two derivations is that in the second derivation, no actual extraction out of a moved category has applied. However, to capture this difference is probably not that easy. A representational version of the freezing principle like the one in (33), for example, cannot distinguish the cases in (31) and (32). It correctly predicts (31) to be ungrammatical but it also rules out (32).

(33) A trace t may not be included in a moved XP (i.e., an XP that binds a trace) if the antecedent of t c-commands XP. Müller (1998)

Instead of (33), the freezing principle is, at least for my purposes better formulated in a derivational way without reference to traces or other representa-

make use of violable constraints and/or transderivational competition, at least to a certain degree.

tional concepts. I informally did so throughout the paper by just stating the following:

(34) Movement out of a moved category is prohibited.

This derivational principle, as it stands, can distinguish between the ATB-case where actual movement out of a moved category has applied and the asymmetrical extraction case where the extraction has applied before the subsequent remnant movement of the TP.

5.3. Rule Interaction

As this volume collects various articles which involve opaque and transparent interactions of rules and constraints, I want to focus on this issue a little bit more. As far as I can see, there are two interesting types of rule interaction which play a role in this paper.

First, there is an interaction between the general movement step which moves the adjunct to Spec&P and several processes that make use of the subordinate properties of the $_{LS}$and-construction such as binding. Since the construction is, on the surface, practically indistinguishable from a case of normal TP coordination, it may be surprising that an element in the first conjunct can be bound by an element in the second one. It is, however, no longer surprising when looking at the derivational history of the construction. Since Principle A of the Binding Theory is an anywhere principle, it could apply before the movement of the adjunct to Spec&P destroyed its context for application. If this movement step had applied before binding, this would have bled the creation of binding relations. The same holds for other subordinative properties such as the fact that one may asymmetrically extract out of either conjunct. If movement to Spec&P applied before extraction, the context would be destroyed as subsequent extraction would violate the Coordinate Structure Constraint. However, since both extraction as well as binding may apply before movement, this is, in the terms of Kiparsky (1976), an instance of counter-bleeding.

The second kind of rule interaction is found with a special derivation involving asymmetric extraction out of the right conjunct.[16] As I discussed in

[16] Since asymmetric extraction out of the left conjunct is accomplished by moving through

the section about extraction in detail, there is one step of the derivation where it faces a dilemma how to proceed. The situation is given in (35).[17]

(35) $[_{\&'}$ & $[_{TP2}$ T $[_{vP}$ TP_1 $[_{vP}$ wh vP]]]]

We have two specifiers to the vP, namely the wh-phrase and the adjunct clause (TP_1). Both are to be promoted to the specifier of the &P. For the wh-element it is another intermediate movement position on its way to SpecCP and for the TP_1 it is the final landing site. Since these two operations are both movement steps, the Merge-Over-Move Principle discussed in section 4 does not require them to be ordered. Hence, in principle, they can apply in either order but, as we have seen, only one order leads to a converging derivation. If TP_1 moves first, the coordination is complete and subsequent movement is bled because it would violate the Coordinate Structure Constraint. If, however, the wh-element moves first, the coordination is not yet complete and subsequent movement of TP_1 may apply. This may be considered another counter-bleeding relation between the two movement steps.

The first counter-bleeding relation between movement of the adjunct and applicance of binding relations follows from derivational principles such as the Strict Cycle Condition (e.g. Chomsky 1973) without further ado and may be thus viewed as intrinsic. The second rule interaction between the two types of movement (intermediate and final) can generally not be ordered by such general principles. Here, I assumed that both orders are, in principal, possible but only one of them (intermediate precedes final movement) results in a grammatical structure.

It should be noted that Georgi (2013), whose account argues for ordering between intermediate and final movement operation, actually predicts that final movement must precede intermediate movement for reasons of specificity, which is the wrong order for my purposes. Whether this means that the gap in

some intermediate landing sites contained within the right conjunct, this rule interaction applies to extraction out of the left conjunct as well.

[17] I have not been explicit about whether successive cyclic movement passes through a position above or below the adjunct clause, or whether a principle such as Relativized Minimality regulates the order in which the specifiers are attracted. However, as far as I can see, there is no problem either way. If one adopts Relativized Minimality, one needs a further stipulation, namely that adjunct clauses occupy specfiers below positions that are created by intermediate movement steps. In a system without Relativized Minimality where both options are possible or where both movement types are sufficiently different not to be affected by Relativized Minimality, no additional assumptions are necessary.

the typology of rule interactions she argues for does not exist or whether the analysis of extraction I proposed is on the wrong track remains an interesting question for further research.

6. Conclusion

The present analysis of the LSand-construction can be taken as an argument in favor of two assumptions. First, it presents a new argument for the hypothesis that coordination is in fact an asymmetric construction with the first conjunct asymmetrically c-commanding the second. In a GB model of coordination with ternary branching, an analysis which turns an adjunct into the first conjunct of a coordination by means of movement would probably not be possible. Previous arguments for the asymmetric coordination hypothesis were based either on theory-internal considerations or empirical findings concerning morphological agreement. The argument put forward in this paper was novel in the sense that it has shown that the asymmetric coordination hypothesis may also have syntactic consequences, for example, that the specifier may be a proper landing site for movement processes.

Secondly and maybe more importantly, the present analysis supports the standard Minimalist assumption that the semantics of a sentence is computed on basis of its syntactic structure. It does so by invalidating the claim made by Culicover and Jackendoff (1997) that the so-called left-subordinating-and construction is incompatible with this very assumption and cannot be derived in a standard Minimalist framework. However, as I showed, in a derivational model of syntax being coordinate and being subordinate does not necessarily exclude each other. A subordinate phrase may be turned into a first conjunct by means of movement if certain semantic and syntactic requirements are met. This can account for the fact that the LSand-construction looks like a normal coordinate clause on the surface even though most of its syntactic properties resemble those of a subordinate clause.

On a more abstract level, this analysis can be seen as one possibility to account for syntactic constructions which combine syntactic properties of subordinate and coordinate clauses. In Weisser (2013), it was shown that an analysis that makes use of the same abstract movement step derives the mixed behaviour between subordination and coordination found with a number of

clause-chaining constructions in the languages of Papua New-Guinea and other parts of the world.

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