A minimalist analysis of the implicational *and*-construction in German

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Abstract

In this article, I discuss the so-called implicational and-construction and show how it can be derived under Minimalist assumptions. The major challenge is to find a way to account for the subordinate *and* the coordinate properties of this construction at the same time. The crucial idea behind the analysis is that the asymmetric syntax of coordination enables the transformation of a subordinate structure into a coordinate one by means of movement. The analysis, which pursues the same idea as the ones in Weisser (2014, to appear), shows that the same mechanism that is applied to a whole range of phenomena in different languages can also be applied to cases of asymmetric coordination in German.

1. Introduction

In this short article, I will discuss the syntactic properties of the so-called *implicational and-construction* (IAC) in German. This construction has first been discussed in Reis (1993) from a theoretical, generative perspective and even though the discussion of this construction has some very far-reaching implications for the topic of clausal relations, it has largely been neglected in the subsequent literature.

IACs consist of two clauses coordinated by the conjunction *and*. The interesting characteristic of this construction is that the relation that holds between the two clauses is usually taken to be predicate-argument relation. In other words, the second clause is understood as a complement clause of the first one. The IAC in (1a) alternates with what is called the implicational infinitive construction (IIC) (1b) which expresses the exact same proposition.

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(1) a. Hans war so nett und besuchte sie.
Hans was so nice and visited her
b. Hans war so nett, sie zu besuchen.
Hans was so nice her to visit
'Hans was nice enough to visit her.'

(Reis 1993: 204)

The puzzle that IACs pose for the theory of grammar is twofold. First, the construction poses a challenge for theories of pragmatics which assume a strong (if not universal) correlation between the main clause or subordinate clause status of a clause and the salience of the respective clauses in discourse. Second, the construction is also challenging from a syntactic point of view since it exhibits properties of a subordinate clause and properties of a coordinate clause at the same. Under standard syntactic theories, all of which assume a relatively strict dichotomy between subordinate constructions and coordinate ones, the syntactic behavior of IACs is unexpected.

The first one of these challenges has been extensively discussed in Reis (1993). I will thus be concerned with the second problem, which, as far as I can see, has not yet received a satisfactory solution.

The discussion will proceed as follows. In the next section, I will illustrate the syntactic properties of IACs and show that the construction seems to be in between subordination and coordination to a certain extent. In Section 3, I will very briefly discuss the theoretical implications of this finding and, subsequently, propose an analysis that solves the theoretical problem and captures the major properties of IACs. Section 4 concludes.

2. Syntactic properties of IACs

In this section, I will illustrate some syntactic properties of IACs. I will start out with some general properties and then turn to properties which may help to answer the question whether the second clause in an IAC is a subordinate or a coordinate clause.

The size of both conjuncts in IACs does not vary. In all examples, the two conjuncts share the *Vorfeld* (prefield) but nothing else (see (2)). In V1 contexts, as in imperatives, the prefield is empty and hence, no syntactic material is shared (see (3)).

(2) a. Peter [$_{C1}$ tat ihr den Gefallen] und [$_{C2}$ goss die Blumen].
Peter did her the favor and watered the flowers
'Peter did her the favor of watering the flowers.'

b. Hans [$_{C1}$ wagt es endlich] und [$_{C2}$ verlässt Petra].
Hans dares it finally and leaves Petra
'Hans finally dares to leave Petra.'

(3) [$_{C1}$ Sei so nett] und [$_{C2}$ hau ab]!
Be so nice and leave PRT
'Be so kind as to get lost.'

However, as with the IIC counterpart, subjects in IACs must be shared regardless of whether they are in the prefield or not. An IAC with two different subjects is impossible (4). If another element occupies the prefield and the subject is found in the middle field, the construction resembles an SLF-construction (4b).[1]

(4) a. #Gestern [$_{C1}$ tat ich ihr den Gefallen] und [$_{C2}$ er goss die
Yesterday did I her the favor and he watered the
Blumen].
flowers.

b. Gestern [$_{C1}$ tat ich ihr den Gefallen] und [$_{C2}$ goss die
Yesterday did I her the favor and watered the
Blumen].
flowers.
'Yesterday I did her the favor of watering the flowers.'

Similarly, tense and modal features must be shared. Unlike regular coordination of this size, the two conjuncts must be of the same tense (5a) and the same clause type (5b).

(5) a. #Ich [$_{C1}$ war so blöd] und [$_{C2}$ gieße die Blumen]
I was.PAST so stupid and water.PRES the flowers.

b. *Sei so nett und haust ab.
Be.IMP so nice and leave.DECL PRT

[1]The term SLF-construction goes back to Höhle (1990) and is an abbreviation for *Subject lacking in F-structure construction*. In these constructions, the subject of two coordinate clauses can be shared even though it is located in the middle field of the first conjunct.

Now we turn to the question of whether the relation between the two clauses in IACs is subordinate or coordinate. On the surface, the construction looks like a coordinate one but the semantics it conveys suggests a subordinate relation. Hence, it seems promising to apply some of the standard tests to distinguish clausal relations in German. We start out with the classical constituent tests. Subordinate clauses in German can occur in the prefield and can also be center-embedded under certain conditions. As observed by Reis (1993), with the second clause of an IAC, movement to the prefield or center-embedding in the middle field of the first conjunct is ungrammatical. The following examples contrast the IAC (in the (a)-examples) with the correspondent IIC (in the (b)-examples). We see that, whereas IICs allow for movement to the prefield or center-embedding, IACs do not.

(6) a. Hans [$_{C1}$ tat ihr den Gefallen] und [$_{C2}$ goss die Blumen].
Hans did her the favor and watered the flowers

b. Hans [$_{C1}$ tat ihr den Gefallen] [$_{C2}$ die Blumen zu gießen].
Hans did her the favor the flowers to water
'Hans did her the favor of watering the flowers.'

(7) a. *Den Gefallen und goss die Blumen tat Hans ihr
The favor and watered the flowers did Hans her
gern.
with.pleasure

b. Den Gefallen, die Blumen zu gießen tat Hans ihr gern.
The favor the flowers to water did Hans her with.pleasure
'The favor of watering the flowers, Hans did her with great pleasure.'

(8) a. *Hans hat ihr den Gefallen und goss die Blumen
Hans has her the favor and watered the flowers
gern getan.
with.pleasure done

b. Hans hat ihr den Gefallen, die Blumen zu gießen, gern
Hans has her the favor the flowers to water with.pleasure
getan.
done

(Reis 1993: 215)

This suggests a coordinate relation between the two clauses. Also, we find that ellipsis operations that are typical for coordination constructions can be applied to IACs. Gapping as well as backward ellipsis are both grammatical with IACs.

(9) a. Würdest du so nett sein und <würdest> hier mal putzen?
Would you be so nice and <would> here once clean

b. Wenn Peter mal so nett sein <würde> und hier putzen würde.
If.only Peter once so nice be <would> and here clean.up would.
'If only Peter would be so kind as to clean up here.'
(Reis 1993: 215)

These properties strongly suggest a coordinate relation between these two clauses. The ordering restrictions as well as the possibility of Gapping for example would be totally unexpected under a subordinate analysis of IACs. The following minimal pair shows that gapping is much better in IACs than in IICs.[2]

(10) a. ?Er würde sich nie die Blöße <geben> und mir ein Geschenk geben.
He would self never the nakedness <give> and me a present give
'He would never show the weakness as to give me a present.'

b. *Er würde sich nie die Blöße <geben>, mir ein Geschenk zu geben.
He would self never the nakedness <give>, me a present to give

Thus, Reis (1993) arrives at the conclusion that IACs are really syntactically coordinate. However, as she notes, with respect to extraction, IACs seem to behave differently. Extraction from coordinate structures is constrained by Ross' (1967) Coordinate Structure Constraint, which prohibits asymmetric extraction from out of only one conjunct of a coordinate structure. Nevertheless,

[2] The fact that (10a) is slightly degraded is due to the fact that gapping deletes part of an idiom. It is uncontroversially still much better than (10b) where gapping was applied to subordinate IIC construction.

with IACs, asymmetric extraction seems to be quite well-formed. We find asymmetric extraction from out of the left conjunct as in (11) but also from out of the right one as in (12).

(11) a. Ich frage mich wem$_i$ Peter t$_i$ den Gefallen tat und abhaute.
I ask myself whom Peter the favor did and left.
b. [Zu wem]$_i$ war Peter so t$_i$ nett und goss die Blumen?
To whom was Peter so nice and watered the flowers

(12) a. [Für wen]$_i$ war Peter so nett und goss die Blumen t$_i$?
For whom was Peter so nice and watered the flowers
b. Ich frage mich [zu welchem Treffen]$_i$ Peter uns den Gefallen
I ask myself to which meeting Peter us the favor
tut und t$_i$ kommt?
does and comes

This suggests a subordinate relation since, with IICs, the asymmetric extraction is well-formed from both clauses as well.

(13) a. [Zu wem]$_i$ war Peter so t$_i$ nett, die Blumen zu gießen?
To whom was Peter so nice the flowers to water
b. [Für wen]$_i$ war Peter so nett, die Blumen t$_i$ zu gießen?
To whom was Peter so nice the flowers to water

The second argument for a subordinate relation comes from binding effects. Binding of of anaphors and variable pronouns presupposes c-command. However, under a coordination analysis, elements in one conjunct can never c-command elements contained in the other conjunct. With a subordinate structure, c-command (and, hence, binding) is possible. In (14), we see that, in regular coordination, variable binding of an element in the second conjunct by an element in the first one is impossible. The predicate of the first conjunct in (14) does not allow for an IAC construction. Hence, the coordination in (14) is not an IAC. In this case, binding is not possible. In (15), however, we see that variable binding is possible with IICs (15a) and, crucially, it is also possible with IACs (15b).

(14) *Sie backte jedem$_i$ einen Kuchen und half seiner Mutter$_i$ bei
She baked everyone a cake and helped his mother with
der Steuererklärung.
the tax.declaration.

(15) a. Sie tat jedem$_i$ den Gefallen, seiner$_i$ Mutter eine Email zu
She did everyone the favor his mother an email to
schicken.
send

b. Sie tat jedem$_i$ den Gefallen und schickte seiner$_i$ Mutter
She did everyone the favor and send his mother
eine Email.
an email

This, again strongly suggests a subordinate relation. The table below subsumes our dilemma. One the one hand, tests like gapping, the constituent order or simply the lexical material suggest that what we are dealing with here is an instance of coordination. On the other hand, data from extraction or binding indicate a subordinate relation between the two clauses.

(16) Results of the clausal relations tests

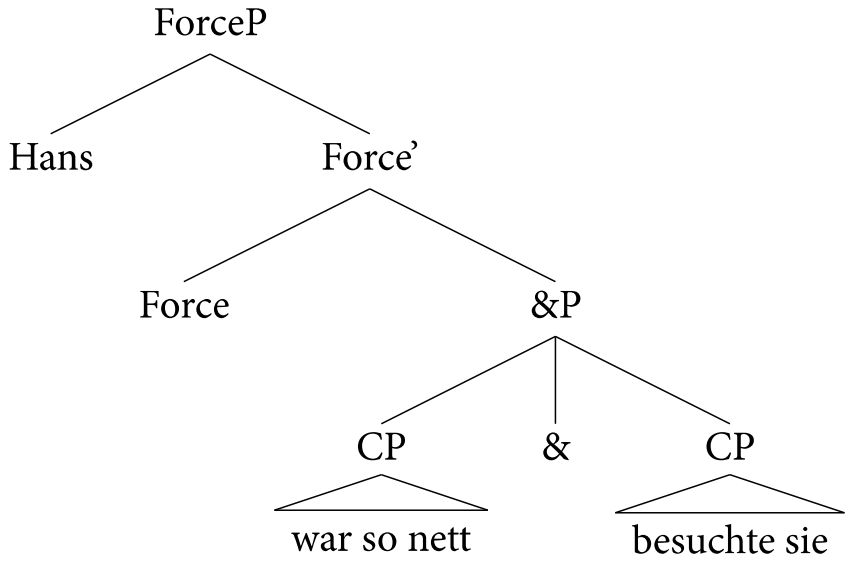
	Subordination	Coordination
Lexical Material		+
Gapping		+
Center Embedding		+
Extraction	+	
Binding	+	

3. A different approach

The findings of the previous sections are problematic for all theories that assume a strict dichotomy of clausal relations. In frameworks like the Minimalist Program, the standard assumption is that there are only two types of clausal relations: subordination relations and coordination relations. Since these two types (or, rather, the syntactic structures they are associated with) are assumed

to be discrete and exhaustive, mixed patterns like the ones above are totally unexpected. The syntactic properties of IACs are thus definitely problematic for these frameworks. I will, in the following, propose an analysis that can derive the mixed properties of IACs and still adheres to the (theoretical) dichotomy of clausal relations. Before I can do so, I will briefly lay out some of the basic syntactic assumptions I follow. I adopt the standard assumptions of Minimalism about the categories in the clausal spine. The functional heads responsible for the syntactic structure building in German are C-T-v-V (see Chomsky (1995) et seq.). However, instead of assuming a uniform C-head whose specifier is the spelled out as the German prefield, I adopt a split-C approach in which some functional head other than C projects above C and selects for a specifier.[3] We may call this head Force^0 for the time being.[4] The prefield is then located in SpecForce. C, however, never has a specifier. This assumption has the advantage that IACs can uniformly be analysed as CP coordination. Pretheoretically, an example like (1a) is thus abstractly represented by the tree in (17).

(17)



[3]For discussion and complications of the Split CP-approach, see Rizzi (1997) et seq. For an application of the Split CP-approach to German see Mohr (2005).

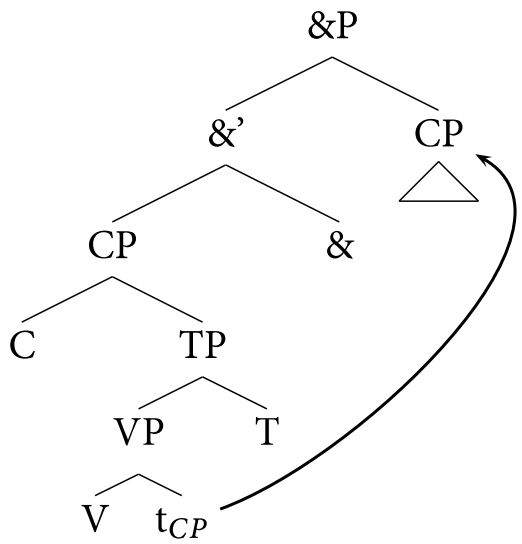
It is to be emphasized that the analysis I propose is not incompatible with the standard view of German clause structure where the prefield is located in SpecCP. To make these analyses compatible, one would simply have to assume that German has the possibility of C'-coordination (which is probably another standard assumption) and C'-adjunction.

[4]The exact notion of this head is really important for the purposes here. It may also be that the head that provides the relevant specifier is Top^0 or Foc^0 or something else. In that case, a split CP-account would probably assume an additional ForceP that does not provide for a specifier.

This syntactic structure, however, does not help to derive the dilemma we found in the previous section. It must be refined. We have seen that IACs are somehow both coordinate and subordinate. In Weisser (2014, to appear), I argue that this dilemma can be solved under a derivational approach to syntax. The core idea is that the asymmetric coordination structure proposed in Munn (1987), Zoerner (1995), Johannessen (1998) and much subsequent literature allows for a derivation in which a clause is base-generated as a subordinate clause but, later on, is promoted to the specifier of a coordination phrase. Thus, the relation between these two clauses is a subordinate one at the beginning of the derivation and a coordinate one at the end.

With the case of IACs, we observe that, semantically, the relation between the first and the second clause is a predicate-argument relation. The crucial assumption is that this semantic asymmetry has a direct syntactic correlate. A clause that has the semantic properties of the complement clause is syntactically base-generated as a complement clause.[5] Thus, the second clause of an IAC is base-generated as a sister of V low in the tree but, throughout the derivation it may, however, be promoted to a conjunct position.

(18) *A Derivation of IACs:*



Importantly, in the case at hand, the specifier of the coordination phrase that is generated by this movement step is linearized to the right of its head. This, however, is not a syntactic matter. By standard assumption, the lineariza-

[5]Given that the second conjunct of an IAC is an argument, this derivation is even enforced by Baker's (1988) UTAH, which requires arguments with the thematical relationship to be base-generated in the same position regardless of where they appear on the surface.

tion in general is not part of the syntax but of the post-syntactic module. Thus, in the case of the IACs, in the syntax, the complement clause is simply moved to Spec&P. In the course of the postsyntactic linearization process, the standard rule of linearization in German (i.e. *Specifiers to the Left*) will be overwritten by the semantic or pragmatic meta-principles that have an impact on the linearization of coordination phrases. One of these principles is the Temporal Iconicity Principle, which requires events in coordination to be linearized in the same order as the events in real time.[6] I assume that some version of this principle may also apply here.

This derivation accounts for the complete range of syntactic properties of IACs we observed in the preceding section. The coordinate properties all follow from output-related processes such as vocabulary insertion or linearization. The order of the conjuncts is fixed since the postsyntactic linearization algorithm refers to the syntactic output structure, not to previous stages of the derivation. The same holds for vocabulary insertion. There is a coordination head present in the structure given by the syntactic output. Hence, the lexical material we find with IACs is the same as with regular coordination.[7]

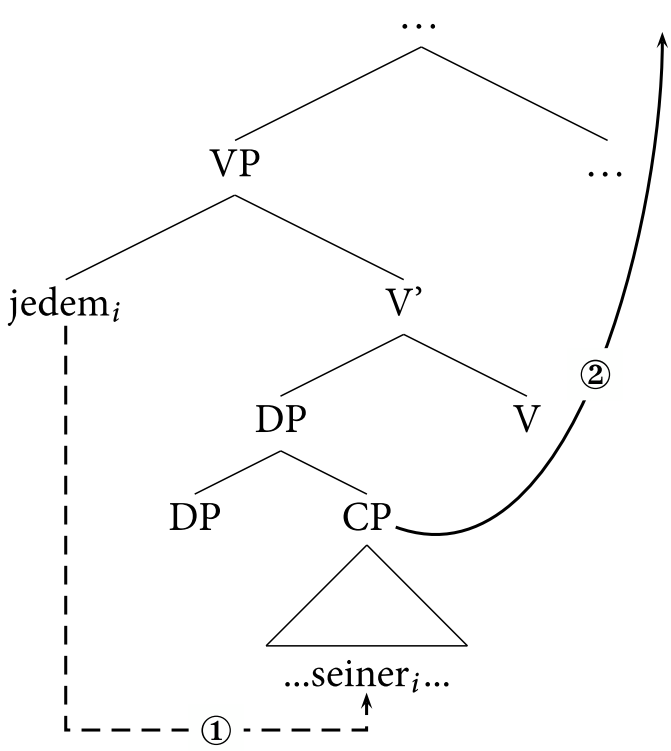
The subordinate properties of IACs follow from operations that apply early on in the derivation. Let us take a look at binding first. It has been known since Belletti and Rizzi (1988) that the c-command relation that is required for binding of variables and anaphors need not be present in the output structure. Binding may apply early in the derivation, regardless of whether subsequent movement processes destroy the required c-command relation. This is exactly what we find with IACs. In the base position of an IAC, a variable pronoun is c-commanded by its host in the matrix clause. Hence, it may be bound. The fact that subsequent movement of the whole IAC to Spec&P destroys the c-command relation does not affect the binding relation.[8] In other words, the movement of the complement to Spec&P counterbleeds the binding relation.

[6] See Weisser (2014) for further arguments for and instances of this overwriting process.

[7] I do not have anything to say about the applicability of Gapping though. Given that the output structure of the derivation is a coordinate one, subequent Gapping processes are expected to apply. Hence, a postsyntactic phonological deletion account to Gapping as in Hartmann (2000) is compatible with the approach pursued here. Syntactic approaches to Gapping as in Johnson (1996, 2009) however, are not. However, it must be emphasized that, as far as I can see, these approaches can hardly account for Gapping in German CP-coordination anyway.

[8] A different implementation of binding that is also compatible with the analysis I present is that binding applies postsyntactically on LF and the syntactic movement process dislocating the CP to Spec&P is reconstructed for the purpose of binding.

(19)



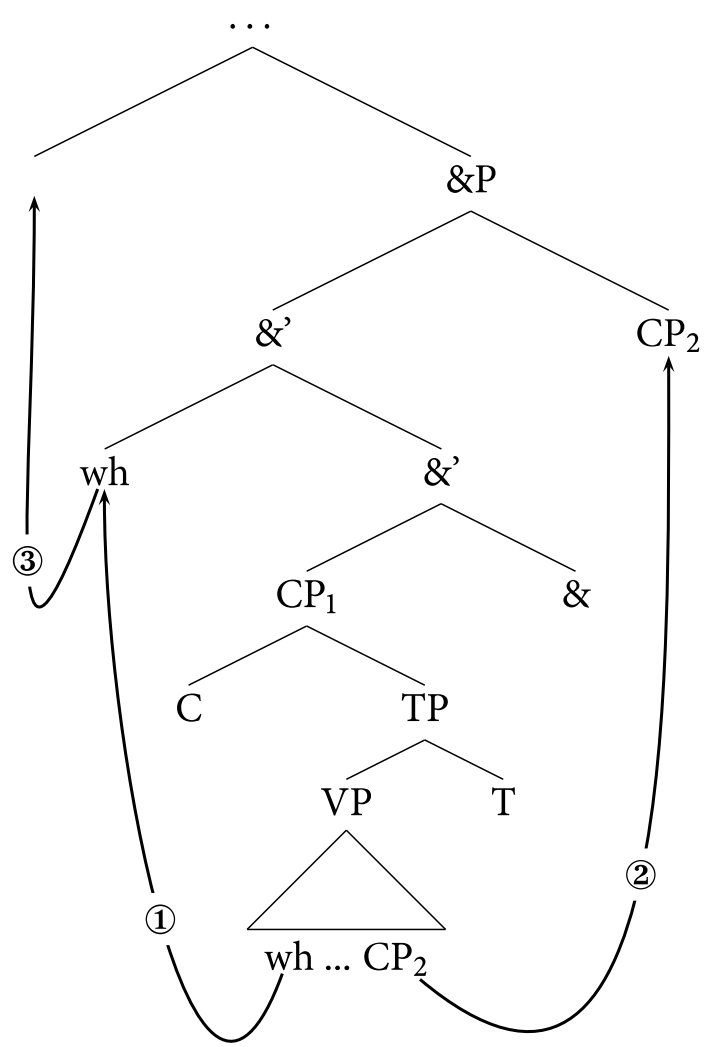
The binding relation (indicated by the dashed line) is established (step ①) *before* movement of the CP into a higher position in the tree (step ②). Hence, c-command is given and the configuration is grammatical.

The extraction property of IACs can be explained under the proposed analysis as well. If extraction from out of the matrix clause (or the complement clause) precedes movement of the second conjunct of an IAC to Spec&P, then it avoids the Coordinate Structure Constraint. For the sake of concreteness, I have restated Ross' version of the CSC in more theoretical terms.

(20) *Coordinate Structure Constraint* (updated):
In a structure [$_{\&P}$ A [$_{\&'}$ & B]], movement (out) of either A or B is prohibited.

Given this definition, it is clear why asymmetric extraction from IACs can avoid a violation of the CSC. The CSC prohibits extraction from full coordinate structures. If extraction precedes movement of the second conjunct, then no coordinate structure is present yet and the CSC does not apply. The derivation is given in (21).

(21)



The crucial point of the derivation is when the matrix CP has been merged with the coordination head. Then, as a first step, the wh-element is extracted to an intermediate specifier of the coordination head.[9] After that the complement clause moves to Spec&P creating a coordinate structure. From now on, extraction from each conjunct is prohibited. But, crucially, at that point of the derivation, the wh-element has already been moved out of the conjuncts. Thus, it may subsequently move further up in the tree (step ③).[10]

It should be noted that the same derivation also applies in simple IAC constructions when it comes to filling the prefield. An element out of the first clause moves to the prefield position (SpecForceP), which is located above the coordination. This is completely unproblematic.

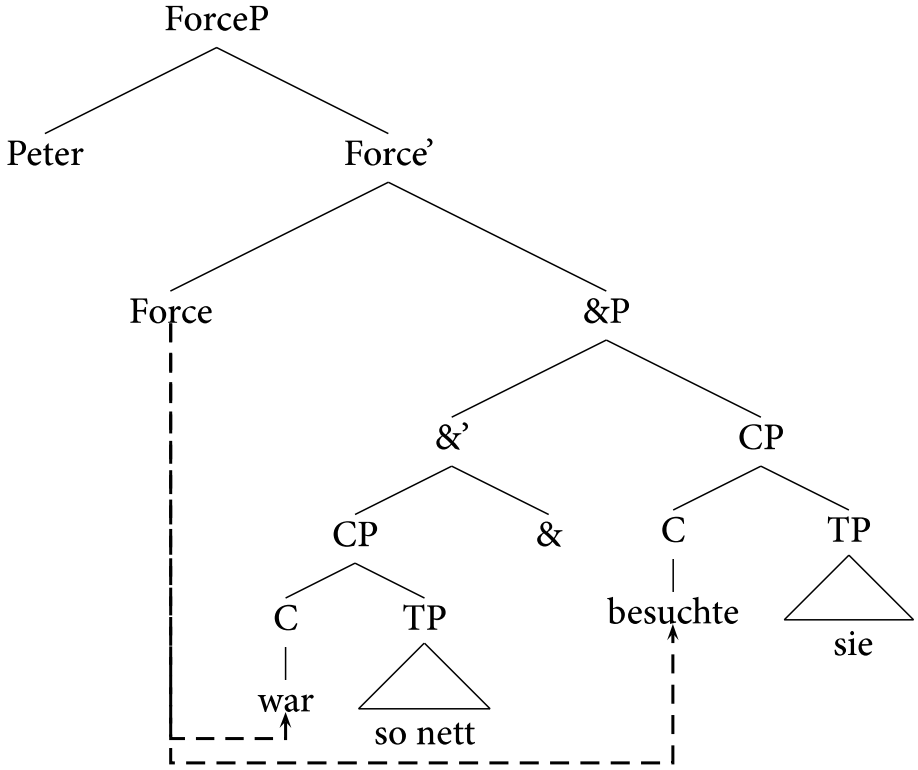
[9] This is basically equivalent to saying that &P is a phase - see Reich (2007) for the same assumption.

[10] Given such a derivational view of the CSC, the same derivation must, of course, be prohibited with symmetric (i.e. base-generated) coordination. As shown in Weisser (2014), this can be done by invoking the Merge-over-Move Principle introduced by Chomsky (1995, 2000).

Before I conclude, I want to briefly address two questions about the analysis above. The first one concerns the identification of the two subjects in this construction. As with regular infinitive constructions, the subjects of both conjuncts of an IAC must be identical. I would like to assume that no new assumptions have to be made to derive this requirement. In its base position, the subject position of the second clause is identified with the subject of the matrix clause. Depending on the different theories of control, this may be accomplished by means of movement or binding of an empty PRO in subject position. As we have seen above, both movement and binding are grammatical with IACs. Hence, any theory that can derive the subject identity in IICs can account for IACs as well.

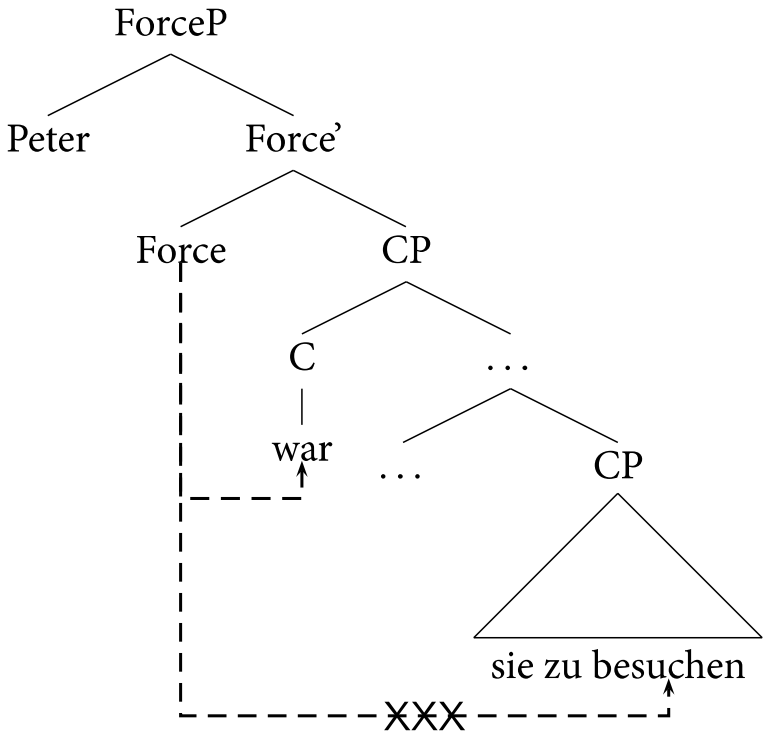
The second question is why the second conjunct of an IAC contains a finite verb whereas the complement clause of an IIC (and hence an IAC in its base position) are nonfinite. I would like to argue that the difference in finiteness can be attributed to whether or not the second clause is local enough to inherit the relevant features from the highest functional projection. Under the standard account to feature inheritance (Chomsky (2001)), the functional heads which are the locus of finiteness features in a clause locally inherit these features by the functional phase heads higher up in the tree. If we apply this assumption to the split CP-structure we adopted in section 3, we could say that the finiteness of a clause is determined by whether or not it is close enough to Force^0 to inherit the relevant finiteness features. In the case of an IAC, the inheritance relation can be established because it is the exact same distance as with regular, base-generated CP-coordination. This is shown in (22).

(22) *Local Inheritance in the case of IACs:*



However, in the case of IICs, the relation would be extremely non-local crossing a number of functional categories (indicated by the dots in the tree below). In this case, the inheritance relation cannot be established. This does not result in ungrammaticality. Rather, the subordinate complement clause is realized as nonfinite.

(23) Non-Local Inheritance in the case of IICs:



The inheritance account correctly predicts that the complement clause is realized as nonfinite if it stays in situ and is realized as finite if it moves to Spec&P. Also, this account has the positive side effect that the first and the second conjunct in IACs always share the same values with respect to tense and mood – a prediction that, as we have seen in Section 2, is confirmed by Reis (1993). The reason for this is that the relevant features in both conjuncts are always inherited by the same head. Thus, they must be identical.

4. Conclusion

In this article, I have discussed the so-called implicational and-construction and showed how it can be derived under Minimalist assumptions. The major challenge was to find a way to implement the subordinate and the coordinate properties of this construction at the same time. The crucial idea behind the analysis was that the asymmetric syntax of coordination enables the transformation of a subordinate structure into a coordinate one by means of movement. The analysis thus pursues the same idea as the ones in Weisser (2014, to appear) and shows that the same mechanism that is applied to a whole range of phenomena in different languages can also be applied to cases of asymmetric coordination in German.

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