A cyclic, phase-based approach to coordination structures

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Abstract

A number of recent papers (Neeleman et al. 2023, Ke et al. 2023, Schwarzer & Weisser 2024) have discussed conflicting evidence in English and German as to whether coordination structures can be analyzed as uniformly binary branching and universally hierarchical. Against the background of this discussion, the paper at hand sets out to (a) evaluate the different technical options that we have at this point and (b) propose a restrictive, uniform account of English and German that rests on the assumption that coordination structures are binary branching. Processes seemingly indicating flat structures can and should be reanalyzed as referencing the absence of intermediate cycles rather than the absence of syntactic hierarchy.

1. Introduction

The literature on the syntactic structure of coordination contains a long-standing discussion about the question as to whether coordination is symmetric/flat or asymmetric/hierarchical in nature. A flat structure such as the one below in (1) has been argued for by i.a. Chomsky (1965), Dik (1968), Borsley (2005), whereas a hierarchical structure has been proposed by Munn (1993), Zoerner (1995), Johannessen (1998), Zhang (2010), Weisser (2015).[1]

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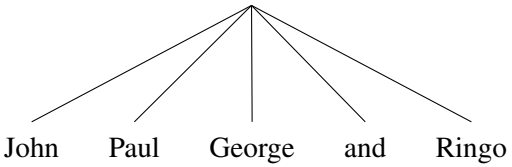
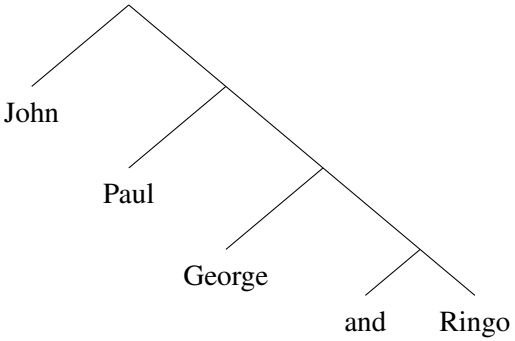
[1]There is of course a wide variety of asymmetric proposals not all of which agree with the structure in (2). For overviews, see Progovac (1998a,b), Nevins & Weisser (2019).

(1)



(2)



While most works within the Minimalist Program seem to converge on the asymmetric, binary branching structure in (2), a number of recent developments have cast some doubt on the empirical validity of the arguments put forward for it. In the following sections, we will briefly review both sides of the empirical discussion, outline two possible analytical conclusions, and propose a version of the more ambitious one that attempts to reconcile the seemingly conflicting properties.

1.1. Recent arguments for flat structures

A traditional argument for hierarchical coordinate structures comes from variable binding: the initial conjunct seems to asymmetrically c-command the second one, leading to a binding asymmetry, (3).

(3) a. every man$_i$ and his$_i$ dog
b. *his$_i$ dog and every man$_i$ (Munn 1993)

In a recent paper, Ke et al. (2023) argue that the contrast in (3) is not indicative of a structural asymmetry but is rather an instance of logophoric binding. They

show that inanimate elements, which can be binders in proper binding relations (*'Every picture$_i$ goes in its$_i$ frame'*) but cannot function as logophoric centers, cannot bind a reflexive pronoun in a coordination, (4).

(4) *They couldn't stop thinking about the castle$_i$ and the pictures of itself$_i$. (Ke et al. 2023)

They also observe that the alleged binding relation only holds between the first and all immediately following conjuncts, and can be blocked by an intervener, unlike proper binding configurations. The first conjunct, for example, cannot bind a pronoun in the third conjunct if a second conjunct that is not involved in the binding relation intervenes, (5b). In a structure like (2), the first conjunct should c-command the second and the third one alike and thus, binding should be possible.

(5) a. The board is discussing each tutor$_i$, their$_i$ students and the textbook.
b. *The board is discussing each tutor$_i$, the textbook and their$_i$ students. (Ke et al. 2023)

This indicates that the alleged binding asymmetries in coordination are due to logophoricity rather than binding and since logophoricity does not require c-command, Munn's data are not indicative of a syntactic asymmetry. This argumentation only disputes Munn's (1993) argument based on Principle A but not the one based on Principle C, for which Munn (1993:16) gives the following example:

(6) *He$_i$ and John$_i$'s dog went for a walk.

We will, for now, merely conclude that binding seems to yield contradictory results and a more detailed investigation of these facts seems to be required. It is also worth noting that German seems to pattern differently from English concerning Principle B in these configurations. While Munn (1993) judges the English translation of (7) grammatical, the German counterpart is unquestionably bad.

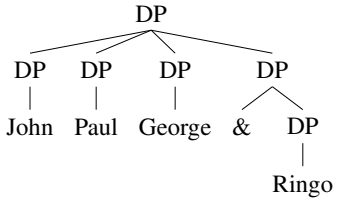
(7) *Johns$_i$ Hund und er$_i$ gingen spazieren.
John's dog and he went for.a.walk
'John$_i$'s dog and him$_i$ went for a walk'

The second argument concerns elements that seem to be sensitive to the number of conjuncts like *both* and *respectively* (Borsley 1994, 2005). Borsley shows that elements like *both* can occur with three-part coordinations only when they can be parsed into subgroups, such that the top-level coordination consists of exactly two conjuncts, (8a-b). *Both* is incompatible with a three-conjunct structure like (8c). Neeleman et al. (2023) argue that since (8c,d) cannot be coerced into a binary coordination, they must constitute structures in which there are truly three conjuncts.

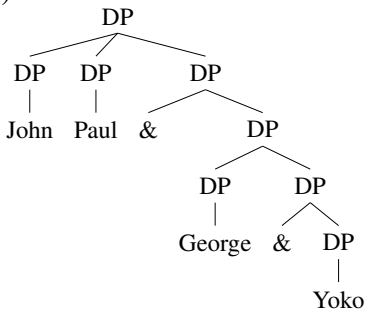
(8) a. both [Tom and [Dick and Harry]]
b. both [[Tom and Dick] and Harry]
c. *both Tom, Dick and Harry
d. *Tom, both Dick and Harry (Borsley 1994: 237)

They use these data as confirmation for their analysis of coordinate structures: Neeleman et al. (2023) propose that coordination is an instance of mutual adjunction of coordinands and as such flat and not necessarily binary. They assume further that the coordinator is a functional head attached to the last coordinand in the flat coordination sequence as shown in (9). Crucially, however, Neeleman et al. (2023) propose that, since syntax is inherently recursive, nothing prohibits the generation of an asymmetric, subgrouping structure as in (10) in addition to (9).

(9)



(10)



The structures (9) and (10) differ in the number of overtly realized coordinators. Since Neeleman et al. (2023) assume that a coordinator attaches to the final conjunct in each level of embedding, the subgrouping structure (10) can be diagnosed by having more than one overt coordinator. These structures also

differ in that the top level coordination consists of three conjuncts in (10) and of four conjuncts in (9). Thus, (8a), (8b) with two overt coordinators look like (10) underlyingly, (8b) being the left-branching version of (10), while (8c) and (8d) look like (9). Crucially, in a flat coordination structure with optional subgrouping, a contrast as with *both* can be expressed, but in an asymmetric structure where subgrouping is, in a sense, the standard case, it is much harder or even impossible to express that difference.

A second argument for the existence of (9) comes from adverbial and adjectival modification with three-conjunct coordinations. Neeleman et al. show that, with only one coordinator present (and hence no structural subgrouping), no non-trivial proper subset of conjuncts can be in the scope of the modifier, see (11) and (12).

(11) Mary will buy yellow crocuses, pansies and tulips.

a. [[yellow crocuses] pansies and tulips]
b. [[yellow crocuses, pansies and tulips]]
c. *[[yellow crocuses, pansies] and tulips]

(Neeleman et al. 2023:72)

(12) Mary will buy crocuses, yellow pansies and tulips.

a. [[crocuses, [yellow pansies] and tulips]
b. *[crocuses, [yellow pansies and tulips]]

(Neeleman et al. 2023:71)

In a binary branching, asymmetric structure like (2), it should be possible to adjoin an adjective to an intermediate subconstituent. This subgroup could be the initial conjunct, as tested in (11), or the final one, as tested in (12). The unavailability of the readings where the adjective scopes over a subgroup in (11c) and (12b) suggests that there is no constituent that includes two of the DPs but excludes the third, which is unexpected in the asymmetric structure in (2). In sum, it seems that data from adjectival modification and elements like *both* pose problems for the binary branching, asymmetric analysis of coordinate structures. However, novel observations from German suggest that the case for (the possibility of) flat coordinations is not as straightforward as it seems so far.

1.2. Counterarguments in Schwarzer & Weisser (2024)

Schwarzer & Weisser (2024) provide arguments from coordinations with three or more conjuncts with adversative coordination and subword deletion that show that Neeleman et al.'s (2023) analysis does not make the right predictions for German.

The first argument concerns the distribution of negation with adversative coordination of the corrective flavor. Horn (1989) and Vicente (2010) note that corrective *but*/*sondern* requires sentential negation in the first conjunct, (13).

(13) a. Es ist nicht wahrscheinlich, sondern lediglich vorstellbar.
It is not likely but merely imaginable.
b. *Es ist unwahrscheinlich, sondern lediglich vorstellbar.
It is unlikely but merely imaginable.

With three or more conjuncts, the pattern of where negation surfaces is exactly as we would expect from a cyclic approach. The negation requirement is introduced by the subconstituent that is headed by the corrective coordinator (*sondern*). Within this phrase, call it *sondern*P, the first conjunct must contain a negation, parallel to (13). In a cyclic approach, we would expect that the requirement for a negation falls on the penultimate conjunct in a three-conjunct configuration, since this conjunct is the first one within the &P headed by *sondern*. This is indeed what we find, (14).

(14) a. Es ist [[etwas unplausibel], [$_{sondern\text{P}}$ [nicht wahrscheinlich],
It is somewhat implausible, not likely
sondern [lediglich vorstellbar]]].
but merely imaginable.
b. *Es ist [[nicht wahrscheinlich], [$_{sondern\text{P}}$ [etwas
It is not likely, somewhat
unplausibel], sondern [lediglich vorstellbar]]].
implausible but merely imaginable.

In Neeleman et al.'s (2023) approach, (14) would constitute a flat coordination, since there is only one overtly surfacing coordinator (*sondern*). In a flat structure, one would have to stipulate that the conjunct immediately to the left of *sondern* must contain a negation. It is unclear why linear adjacency should

play a crucial role here, especially because it is the conjunct to the right of the coordinator that forms a constituent with it.

Their second argument comes from subword deletion in compounds, also called Suspended Affixation. This is a phenomenon where a morpheme can take scope over a coordination despite surfacing only in one conjunct. Deletion of part of a compound is possible in the initial or non-initial conjunct in German, see (15).

(15) a. [Apfel-~~bäume~~ und Kirsch-bäume]
apple-trees and cherry-trees
'apple trees and cherry trees'

b. [Herren-gürtel und ~~Herren~~-schuhe]
gentlemen-belts and gentlemen-shoes
'belts and shoes for men'

In coordinations with three conjuncts, this type of deletion can affect all three conjuncts, (16a), or, crucially, only two of them. In (16b,c), subword deletion applies only to the rightmost two conjuncts. This suggests that this type of ellipsis can pick out a subconstituent in the coordinate structure, see (18), (19) below, contrasting with the impossible subgrouping in English in (12b) above.

(16) a. [Apfel-~~bäume~~, Kirsch-~~bäume~~ und Birn-bäume]
apple-trees cherry-trees and pear-trees
'apple trees, cherry trees and pear trees'

b. Holunderbüsche, [Kirsch-~~bäume~~ und Birn-bäume]
elder.bushes cherry-trees and pear-trees
'elder bushes, cherry trees and pear trees'

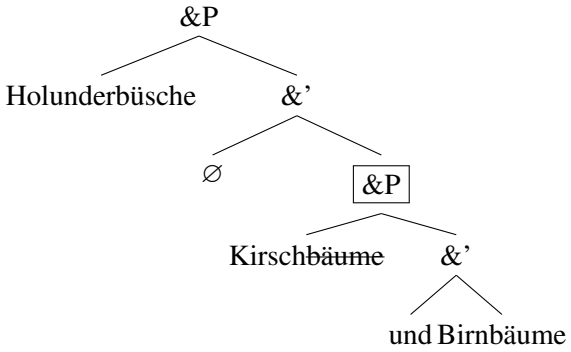
c. Damenhandtaschen, [Herren-gürtel und ~~Herren~~-schuhe]
lady.handbags gentlemen-belts and gentlemen-shoes
'women's handbags, men's belts and men's shoes'

Since there is only one overt coordinator in (16), this should be a flat structure in Neeleman et al.'s analysis. They would expect that a deletion process should affect either all or none of the conjuncts. The pattern observed in German is not predicted by a flat approach. Note that an alternative analysis in which linear adjacency, not (sub-)constituency, is the relevant configuration makes wrong predictions, too: subword deletion is impossible on the leftmost two conjuncts, (17).

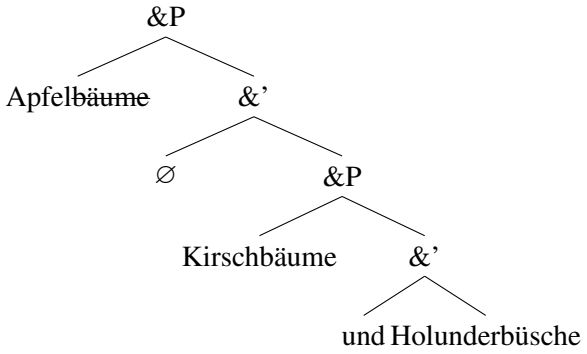
(17) a. *[Apfel-~~bäume~~, Kirsch-bäume] und Holunderbüsche
apple-trees cherry-trees and elder.bushes
b. *[Herren-gürtel, ~~Herren~~-schuhe] und andere Lederwaren
gentlemen-belts gentlemen-shoes and other leather.goods

The contrast between (16) and (17) can be accounted for if the underlying structure of the coordination is complex and binary branching: Suspended Affixation applies cyclically to a constituent ($\boxed{\text{\&P}}$) in (18), from the bottom up, but cannot apply to a non-constituent, (19).[2]

(18) ✓Ellipsis inside an XP



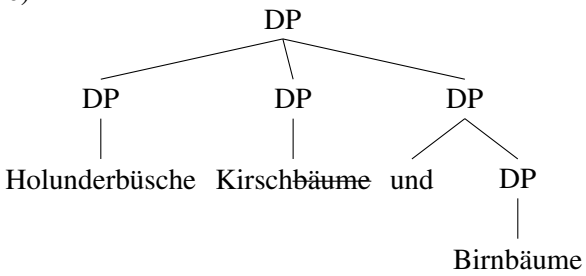
(19) ✗Ellipsis in a non-XP



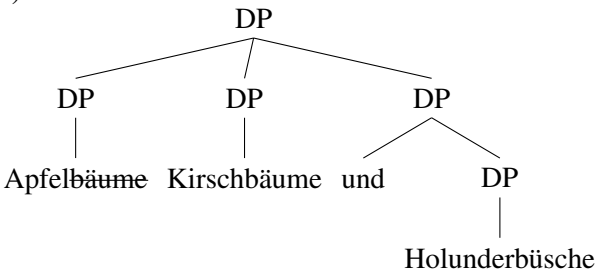
[2]The attentive reader probably wonders how a binary branching analysis can exclude (17) if a left-branching structure is in principle possible. See fn. 6.

A flat adjunction structure where no constituent c-commands another (Neeleman et al. 2023:59) would provide us with no handle to explain why (20) is grammatical but (21) is not.

(20)



(21) *



In sum, subword deletion patterns in compounds and adversative coordinations in German reveal an internal hierarchy in coordinate structures with only one overt coordinator, contrary to what is predicted in Neeleman et al. (2023).

2. The falsification problem of the weak account

We arrive at conflicting evidence: while the coexistence of hierarchical and flat coordination structures seems to be well-motivated for English, the evidence does not carry over to German. Since we view it as implausible to assume that the occurrence of a fundamental operation such as mutual adjunction could be language-specific, we are left with two possible conclusions: (A) We could take our argumentation to indicate that Neeleman et al.'s (2023) approach is wrong, and that coordinate structures are uniformly binary. On the other hand, (B), our observations actually only show that subgrouping is possible without a second overt coordinator, i.e., that Neeleman et al.'s diagnostic for

flat structures does not work for German. The German data are still compatible with an approach in which coordinations can be either flat or hierarchical if the distribution of the coordinators is accounted for in another way.

As far as we can tell, however, the approach to coordinator placement in Neeleman et al. (2023) does not allow for minimal manipulation of the sort that would be required for German. Neeleman et al. (2023) devise a placement algorithm couched in Optimality Theory that allows for a certain amount of flexibility of coordinator placement in flat structures. Depending on the different constraint rankings, languages might either opt to not mark any conjunct (which amounts to well-attested asyndetic coordination patterns), to mark every non-initial conjunct for coordination (a pattern exemplified by Arabic for example) or to mark only the final conjunct (as in English). Importantly however, what is needed to accommodate the coordinator placement in German is not flexibility in flat structures, it is flexibility in hierarchical structures. It seems that speakers of German do not need to have an overt second coordinator in cases of subgrouping. The OT-algorithm in Neeleman et al. (2023) does not provide for flexibility in these cases at all. All of the constraints only refer to the relations within a single coordination structure. Whether that coordination structure is embedded into another one or not, cannot ever play a role for the coordinator placement. It thus seems that the system cannot be amended in a straightforward way to accommodate the pattern.

Furthermore, we want to note that even if it did, we would still face a heuristic problem. In the light of the data summarized above, the weak account, according to which flat and hierarchical structures exist alongside each other, suffers from a grave falsification problem. If it is the case that the number of coordinators in German is not a reliable indicator to identify subgrouping (i.e. syntactic hierarchy), then we lose our tertium comparationis. In other words, if German can show flat or hierarchical structures in coordination contexts and we do not have the diagnostics to tell them apart, then it seems that anything goes and our theory does not make any testable predictions anymore. This in turn means that it cannot be falsified. We take this as reason enough to endorse option (A) and pursue an approach that tries to defend the stronger claim that coordination structures are universally hierarchical and binary branching.

3. The strong account in terms of phases

In what follows, we will propose an approach that pursues the strong claim that coordination structures are universally binary branching. The approach builds on an idea from the work by Wagner (2005, 2010) on the syntax-prosody interface but is fleshed out in a formal syntactic way.

3.1. Subgrouping references cycles, not hierarchy

Wagner (2005, 2010) discusses the prosodic grouping in complex coordination structures with three or more conjuncts. He notes that there is a strong correlation between semantic subgrouping and prosodic grouping in these cases. In (22a) and (22b), we see asymmetric pauses corresponding to different semantic subgroupings. But of course, we also get a pattern with a flat intonation corresponding to a structure without subgrouping (22c).

(22) a. A || and B | and C = [A and [B and C]]
b. A | and B || and C = [[A and B] and C]] (Wagner 2010:186)
c. A | ∅ B | and C = [A and B and C]

He addresses the question as to how to accommodate a flat intonation in (22c) with a binary branching structure and his idea is that the difference between subgrouping and non-subgrouping structures should not be encoded by means of flatness *vs.* hierarchy but rather by locality domains.

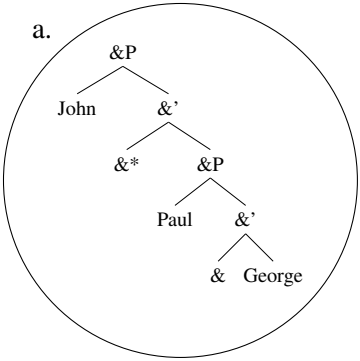
Crucially, Wagner notes that these domains are also semantically meaningful in that they indicate semantic subgrouping (or in his terms: *"they have to be semantically associative"*, Wagner 2010:196). Thus, as they relate semantic and prosodic properties, it is plausible to assume that these locality domains are instances of syntactic phases.[3] We implement this in the following way: First, we assume that coordination structures are created by a coordination head &, which comes in a strong and a weak version. We represent the strong version with an asterisk &* and the weak version without. The strong version is a phase head and triggers spell-out, resulting both in a semantic grouping of its contents at LF as well as a flat prosody of all its content at PF. The entire coordination structure is obligatorily a spell-out domain (Weisser 2015,

[3] Wagner (2005, 2010) discusses the idea that the locality domains are defined by semantic criteria. We think, however, that it is more plausible to assume a syntacto-centric approach where the presence of a syntactic phase boundary impacts interpretation and prosody alike.

Bošković 2020a,b) and thus the highest head in the structure is of the strong type. Lower &-heads in complement position can be strong or weak.[4] The latter will lead to a subgrouping reading and a non-flat prosody. The former will result in a flat prosody and a reading without semantic subgrouping:

(23) Single-cycle derivation
⇒ flat prosody

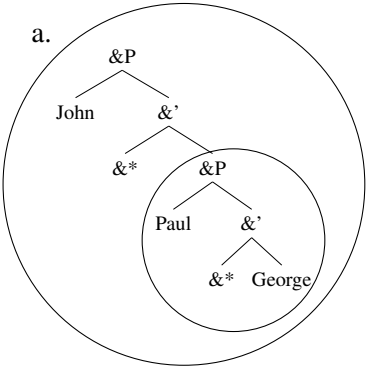
a.



b. John | Paul | and George

(24) Two-cycle derivation
⇒ non-flat prosody

a.



b. John || and Paul | and George

In essence, we propose that the difference between subgrouping and non-subgrouping readings of coordination is not to be encoded by means of flat *vs.* hierarchical structure but by means of locality domains. In the following, we will show how this explains the properties of English and German coordinate structures discussed in section 1.

3.2. Accounting for the distribution of coordinators

We start with the distribution of coordinators, which Neeleman et al. (2023) assume to be the most straightforward diagnostic for hierarchical *vs.* flat structures. Since in our account, all structures are hierarchical, we cannot follow

[4]Crucially, single-cycle derivations are not possible with left-branching structures. This must be due to the difference between specifiers and complements, where only the latter can but do not have to be a phase. Structures involving complex specifiers must necessarily involve different workspaces (see discussion in Uriagereka 1999, Phillips 1996, Wagner 2005) and by assumption have to be phasal.

the same strategy. Instead, we assume that the distribution of coordinators is governed by the following impoverishment rule:

(25) & ⟶ ∅ / &P

The rule in (25) states that we delete the coordination head in the context of another coordination head. Somewhat informally, we might think of this rule as a haplology effect.[5] It is important for our purposes that the context of this rule is restricted to sisterhood: A coordination head whose sister is another coordination phrase is impoverished. Prima facie, this allows us to capture two configurations: First, it allows us why the lowest coordinator in the structure is always pronounced, namely because it can never be the sister of another coordination phrase. In (23) for example, only the higher coordination head can be deleted as it is the only one whose sister is a &P. Secondly, it allows us to capture the fact that left-branching structures (e.g. [$_{\&P}$ [$_{\&P}$ A [& B]] & C]) do not allow for deletion because in these cases, the embedded coordination phrase is not the sister of the higher coordination. As a result, subgrouping structures as in *[[John and Yoko] and George]* will necessarily be pronounced with two coordinators.[6]

The last remaining question is whether the higher coordination head in (24) can be impoverished. This is where the difference between English and German comes in. In English, we argue, that the locality domain disrupts the context and thus (25) cannot apply. As a result, right-branching subgrouping structures such as *[George and [John and Yoko]]* will also need to be pronounced with two coordinators.

In German, the situation is slightly different as we have seen that German allows for a subgrouping structure even with one coordinator as evidenced by the diagnostics in Schwarzer & Weisser (2024). We assume that German can

[5] See Nevins (2012) for an overview of these effects at different stages of the derivation.

[6] This also explains the ungrammaticality of (17). While subword deletion is possible in a subgroup in specifier position, deletion of the coordinator is not, since it does not have a &P sister. Such left-branching structures are only possible with two overt coordinators, (ib).

(i) a. *[$_{\&P}$ [$_{\&P}$ Apfel-~~bäume~~ ∅ Kirsch-bäume] und Holunderbüsche]
apple-trees cherry-trees elder.bushes

b. [$_{\&P}$ [$_{\&P}$ Apfel-~~bäume~~ und Kirsch-bäume] und Holunderbüsche]
apple-trees and cherry-trees and elder.bushes

apply the impoverishment rule despite the intervening phase boundary. As a result, we can have subgrouping with one coordinator only.

One might wonder how this difference comes about. One reason might be the timing and, as a result, a difference as to what kind of structure this rule has access to. In a standard phase-based model of cyclic spell-out, the postsyntactic component should not have access to material in other spell-out domains. As such, the English pattern might be considered expected as rules like (25) cannot apply across domains. However, it has been proposed that, in some cases, impoverishment rules can apply in the syntax or upon spell-out (see e.g. Keine 2010).[7] If that were the case in German, then the rule in (25) could potentially apply before spell-out of the lower &P. In that case, spell-out would counterbleed the application of the impoverishment rule and the result would be that German can delete higher coordinators even in right-branching subgrouping structures.

Note however, that this is not obligatory in German. So either it is the case that the rule in (25) is optional in German to begin with or that the timing of application is more variable than it is in English.

3.3. Accounting for flat properties

Let us now see how the stronger approach, according to which coordination structures are universally binary branching, fares with respect to the arguments discussed in Section 1.

We start with the data involving *both* and *respectively*, which according to Borsley (2005) tell us whether the highest level of coordination consists of two or more conjuncts. However, in the approach at hand, a similarly straightforward solution seems tenable. All we have to do is count how many conjuncts there are *in the current cycle*. In a single cycle derivation with more than two conjuncts (23), an element like *both* is not licensed, whereas in a derivation with two cycles like (24), it is. The reason is that due to the intervening spell-out domain, material inside the lower spell-out domain is not accessible and the spell-out structure counts as one semantic unit for the calculation as to whether *both* is licensed.

Next, we turn to the modification data from Neeleman et al. (2023), which seemed to indicate that, in English, there is no adjunction site for adjectives/ad-

[7] For an overview and discussion see Keine & Müller (to appear).

verbs in the intermediate position of a seemingly flat structure of three-way coordinations. In their approach, this falls out quite neatly because there is no possible position for the adjunct to attach to. In our approach, there is such a position, at least at first sight. It thus appears that we need to constrain possible adjunction sites in our account. In particular, we argue that what is required is the statement that English can only adjoin elements to the strong version of the coordinator, i.e. to the one that demarcates a spell-out domain. Given that it is the strong coordinator that induces the interpretation of the respective conjuncts as a semantic unit, this makes sense since the adjunct is intended to modify exactly that semantic unit. And in fact, Zyman (2022) proposes that adjuncts can only be attached to a spell-out domain.[8] The result is that adjuncts can attach only to an &P headed by a strong &*, which makes the right predictions: Subgrouped structures (regardless of whether they are in a specifier or in a complement position) can be modified directly because they are headed by &*. It is only in a single-cycle derivation that the lower &P cannot be modified.

This makes an interesting prediction about the fact that German should allow modification of the lower coordination structure without a second coordinator, namely in configurations of a multi-cycle derivation and impoverishment of the coordinator across the phase boundary. We have the impression that this is correct, (26).

(26) *Context: Antonia is very specific about drinks. At her wedding, she will only allow three types of drinks on the menu.*
Auf der Hochzeit gibt es lediglich schwedischen Schnaps,
at the wedding will.be EXPL exclusively Swedish liquor
bayrische Biere und Weine.
Bavarian beers and wines
'At the wedding they will only serve Swedish liquor, Bavarian beers and Bavarian wines.'

[8]Whether this only holds for late adjunction of elements or for all adjuncts throughout is an open question. When adjectives attach in their canonical position inside a DP, other restrictions might apply. However, we take it that upon modification of a complex element like the coordination of some sort, it is reasonable to assume that the adjunct modifies the spell-out domain directly.

In this example, we have, by assumption, a derivation involving the two cycles indicated below.

(27) [$_{\&P}$ Swedish liquor &* [$_{\&P}$ wines &* beers]]

In accordance with the rules for German outlined above, we can impoverish the coordinator in the higher cycle as its immediate sister is an &P. We can do so despite the intervening domain boundary. We can also adjoin the respective adjective *Bavarian* to the embedded &P because it is headed by a strong version of & and demarcates a spell-out domain that is interpreted as a semantic unit at LF.

Against this background, we would like to conclude that the cyclic approach we presented in this paper allows us to capture the properties of coordination structures that have been taken to be evidence for flat coordination structures by Borsley (2005) and Neeleman et al. (2023).[9] Furthermore, the approach allows us to capture the minimal difference between English and German without assuming fairly fundamental changes such as the assumption that English allows for ternary branching (or mutual adjunction) but German does not. In fact, in our account, the difference between English and German reduces to a simple difference in terms of the timing of the impoverishment rule and the way it interacts with cyclic spell-out: In English, the impoverishment rule is bled by spell-out, in German it is counterbled.

4. Conclusion

In this paper, we briefly reviewed the ongoing debate about underlying symmetry or asymmetry of coordination structures and we proposed an approach to coordination structures that maintains the strongest possible claim, namely that syntactic structures are universally binary branching. In our approach, apparent arguments for symmetry or flatness are reanalyzed and shown to be fully compatible with asymmetric hierarchical structures if we make use of syntactic cycles.

[9] One area that remains, at this point, fairly unclear is the domain of binding and whether binding can actually tell us something about symmetry or asymmetry in coordination structures.

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