Two arguments for a transformational approach to second position effects

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1 Introduction

The literature on second position elements (a.k.a. second position *clitics*[1]) is characterized by a longstanding discussion as to whether these elements are base-generated in second position or whether they are base-generated in first position and only arrive in second position as the result of a subsequent transformation.

In this paper, I will provide two arguments for the transformational approach based on a typological study of second position coordinators (Weisser 2024), i.e. coordinators that appear inside of one of their conjuncts rather than in the semantically transparent peripheral position (e.g. in between the two conjuncts). The first argument will be based on the observation that, although the coordinators usually occupy a second position within their coordinands, they also show positional alternations in some syntactic contexts. These alternations, I argue, can be derived in both transformational and base-generation models. However, we find that the kinds of empirically attested alternations are systematically restricted in a way that falls out of a transformational approach but that cannot be captured in a base-generation approach. In other words, the base-generation approach massively overgenerates predicting much more alternations than we actually find. The second argument is based on opaque interactions between the second position placement and other morphosyntactic operations.

The paper is structured as follows: In Section 2, I will review some examples of base-generation approaches as well as transformational approaches to outline the argument that I want to make in this chapter. Section 3 introduces the typological studies of shifting coordinators, briefly introduces the different patterns found in this study. Section 4 introduces the above-mentioned positional alternations and presents the first argument for a transformational view. Section 5 presents the second argument coming from opaque interactions. Section 5 briefly summarizes what theoretic consequences we should draw from the two arguments and Section 5 concludes.

2 The debate: Base-generation vs transformations

Although approaches to second position elements can be classified according to many different variables (see e.g. Bošković 2001; Anderson 2005; Spencer & Luís 2012; Weisser 2024), the crucial dimension that I will be concerned with is the one that distinguishes base-generation approaches

[1] In what follows, I do not use the term *clitics* in order to avoid any misconceptions as to what other properties these elements are expected to have. The approach that I pursue (more on this in Section X.X below) is an empirical one. The elements I study at are defined in distributional terms (hence second position elements) and only then we can test systematically as to whether the distribution correlates with other properties usually attributed to clitics. i.e. whether they are phonologically deficient or whether they attach to different syntactic categories, etc.

from transformational approaches. Influential base-generation approaches are found in Klavans (1985, 1995); Miller (1992); Anderson (1992); Chung (2003); Anderson (2005); Bermudez-Otero & Payne (2011) while influential transformational approaches can be found in Marantz (1988); Halpern (1995); Bošković (2001); Embick & Noyer (2001, 2007); Legate (2008). On the most basic level, the distinction boils down to whether the second position element in question originates in second position or whether it originates in first position and its surface position eventually comes about as the result of a transformation.

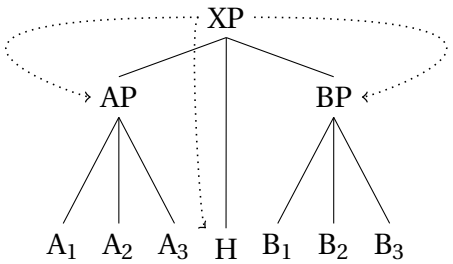
Base-generation approaches usually have designated algorithms that calculate the surface position of the clitic element within a given domain. Anderson (2005) for example derives the surface position of an element κ using an OT-calculus that makes reference to (a) alignment constraints (LEFTMOST(κ,D): κ wants to be leftmost in its domain), (b) constraints that disprefer κ in initial position (NON-INIT(κ,D): κ wants to be non-initial) and (c) integrity constraints that indicate which domains can and cannot be penetrated for the purposes of placement of κ. In the toy example in (1), we see in the input that the domain D has a feature κ. In order to find a position for κ, we compare different candidates (a–d). The candidate that places κ in a position after the first XP is optimal as it does not violate NON-INITIALITY(κ,D) but also does not violate INTEGRITY(XP) by placing κ inside an XP in which it does not belong.

(1)

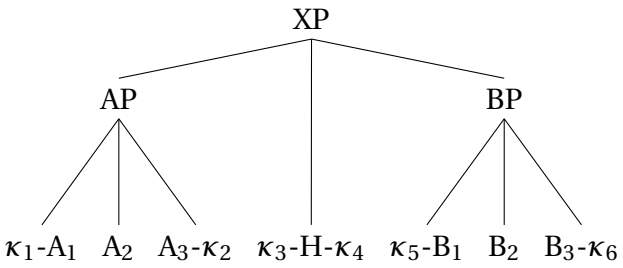
	$[\,[\,X_1\ X_2\ \ldots\,]_{XP}\,[\,Y_1\ Y_2\ \ldots\,]_{YP}\ \ldots\,]_{D[\kappa]}$	INTEGRITY(XP)	NON-INIT(κ,D)	LEFTMOST(κ,D)
	a. $[\,\kappa\,[\,X_1\ X_2\ \ldots\,]_{XP}\,[\,Y_1\ Y_2\ \ldots\,]_{YP}\ \ldots\,]_{D}$		*!	
	b. $[\,[\,X_1\ \kappa\ X_2\ \ldots\,]_{XP}\,[\,Y_1\ Y_2\ \ldots\,]_{YP}\ \ldots\,]_{D}$	*!		*
☞	c. $[\,[\,X_1\ X_2\ \ldots\,]_{XP}\,\kappa\,[\,Y_1\ Y_2\ \ldots\,]_{YP}\ \ldots\,]_{D}$			**
	d. $[\,[\,X_1\ X_2\ \ldots\,]_{XP}\,[\,Y_1\ Y_2\ \ldots\,]_{YP}\,\kappa\ \ldots\,]_{D}$			***!*

Another type of base-generation approach is formulated in Bermudez-Otero & Payne (2011) who, drawing on Miller (1991, 1992), develop an approach in which features located on a head are freely percolated down inside the tree to a certain point where the clitic κ will be realized. According to this approach, κ, which is usually a feature of a given phrase XP, will percolate down either to the first or last daughter of XP, to the head X or to all its daughters. In all of the resulting positions, κ can then be realized as attaching to the left or to the right at various prosodic heights.

(2) Feature percolation in Bermudez-Otero & Payne (2011):



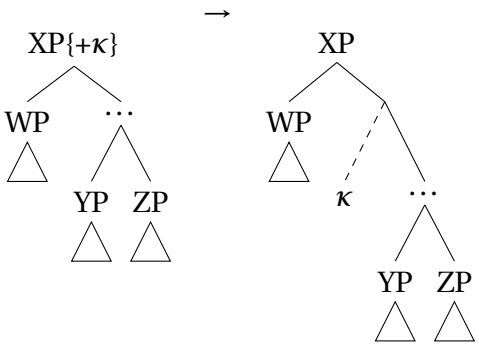
(3) Resulting clitic realization Bermudez-Otero & Payne (2011):



For a second position pattern (illustrated by κ_2), the respective feature would be percolated down to the first phrase of the domain with which the feature is associated (AP). In that position it would right-attach to the final terminal node of AP (here A$_3$).

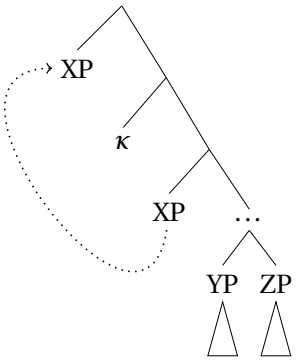
Importantly, unlike the transformational approaches to be discussed below, neither of these algorithms displaces any of the elements. The element κ is directly generated in the position in which we see it surface. This is indicated below. We see that the phrase XP is associated with the morphosyntactic feature $\{\kappa\}$ and as a result, the placement algorithm will place the element in the optimal position, which, in the toy example in (4), is a second position after the first phrase. (here indicated with a dashed branch).

(4) Base-generation:



This contrasts, as the name already suggests, with transformational approaches, in which the element in question is base-generated in a domain-peripheral position (usually in first position). Then, a transformation applies, which will result in second position of the element in question. We can distinguish two kinds of transformational approaches according to what kind of transformation we employ. A frequently employed transformation is syntactic movement. Accounts like Halpern (1995); Bošković (2001); Legate (2008) account for second position patterns where exactly one XP precedes the clitic κ by simply moving this XP into the specifier of a higher projection.

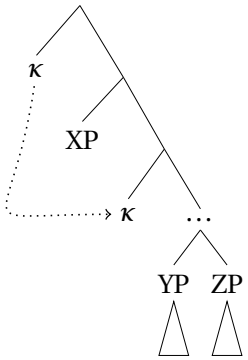
(5) Transformation (syntactic movement):



Another account are based on the operation Morphological Merger proposed by Marantz (1988)

and refined by Embick & Noyer (2001), where it is κ itself that undergoes the transformation leaving it in second position. Here, κ lowers onto a head one projection down leading to a similar pattern. A somewhat similar idea is the transformation of *Prosodic Inversion* found in Halpern (1995):

(6) Transformation (Merger etc.):



Comparing the base-generation tree above with the transformational ones, it becomes clear that one major difference between the approaches is that in a transformational account, a second position element has an underlying position with respect to the other elements of the clause *and* a surface position.[2] But in a base-generation account, it will only ever have one position. In what follows, I will provide two arguments based on the discussion of shifting coordinators in Weisser (2024) for a transformational view of second position placement. Both arguments make use of the observation just made above. Under a transformational analysis, a second position element has an underlying position and a surface position. Under a non-transformational analysis, it will only ever have one.

3 Shifting Coordinators

The two arguments that I will present are based on a typological study of a certain type of second position element in Weisser (2024). The empirical phenomenon under consideration in this work are second position placement patterns of clausal coordinators. Languages of the world use two general strategies to coordinate constituents: Languages using a monosyndetic coordination strategy posit one coordinating linker, which is – in the standard case – located in between the two clauses (A and B in the representation below). Languages using a polysyndetic coordination strategy use one coordinating morpheme per conjunct, which is in the vast majority of cases suffixed to each conjunct. The syntacto-semantically expected position for clausal coordinators are indicated below.

(7) a. The canonical position of a monosyndetic coordinator:
A $\prec$ & $\prec$ B
b. The canonical positions of polysyndetic coordination:
A $\prec$ & $\prec$ B $\prec$ &

In the typological part of the study, I conducted a series of case studies in which coordinators do not appear in these conjunct-peripheral positions but rather appear embedded into the respective

[2] Strictly speaking, it only has one position in a syntactic movement-based approach but the crucial point is that relative to the element in first position, it can be viewed as having two positions: Underlyingly, it precedes the XP in first positions but on the surface, it follows it. The arguments in this section will thus go through for all transformational accounts.

conjuncts. Two representative examples come from Kalaallisut and Yorùbá. The coordinators are given in bold and the respective conjuncts in brackets.[3]

(8) [Tului(t)-nunaan-nuka-nngil-aq] [ikinngun-ni=**lu** tikiraar-nagu.]
England-go.to-not-3SG.IND friend.3SG.REFL=CONJ visit-(4SG)-3SG-NEG-CONT
'He didn't go to England and visit his friend.' Kalaallisut, Fortescue (1997, 140)

(9) [Èmi óò dìde], [èmi óò **sì** tọ baba mi lọ], [èmi óò **sì** wí fún un pé]
I will arise, I will CONJ to father my go, I will CONJ say to him that
'I will arise, I will go to my father and I will say that...'
Yorùbá, Ilori (2010, 176), gloss adapted

The resulting classification in Weisser (2024) yielded a coherent picture, in which the majority of non-canonical coordinator placement patterns fell into three distinct classes all of which can be described as second position patterns. The first class of languages involving the well-known cases of Latin and Ancient Greek but also less well-known languages such as Oklahoma Cherokee and Kalaallisut can be described as cases where the coordinator appears after the first phonological word of the second conjunct. In the example in (8) above, it is precisely one phonological word that precedes the coordinator *lu*. In the second class of languages including Yorùbá but also German and Polish, the coordinator also appeared after a prosodic constituent of some sort except that it appeared after the first phonological phrase. In the example in (9) above, the coordinator *sì* in Yorùbá follows the subject including a number of grammatical elements specifying tense, agreement, negation etc. As argued for in detail in Aremu & Weisser (2024), this pattern is most adequately described as a second position after the first phonological phrase. The third type of second position pattern found with coordinators are those, in which the coordinator appears after the first syntactic phrase of the second conjunct. An example from Lezgian is given in (10) below. Here the coordinator *ni* appears after the clause-initial dative noun phrase in the second conjunct.

(10) [Wiš jis.u-z jašamiš x̂u-x̂] [wiš jis.u-z-**ni** dünja.di-n sir-er čir-a]
hundred year-DAT living be-IMP hundred year-DAT-COORD world-GEN secret know-IMP
'Live a hundred years and know the world's secrets for a hundred years ...'
Haspelmath (1993, 450)

All in all, the crosslinguistic survey unearthed a number of different patterns that mirror quite closely the range of second position placement patterns independently argued for for other types of clitics. It turns out that shifting coordinators provide a good testing ground for general theories of cliticization and second position patterns. For the purposes of the argument to be developed below, the necessary information is that my survey confirm quite straightforwardly that second position patterns crosslinguistically fall into two distinct classes depending on whether the second position is defined in terms of morphosyntax or in terms of phonological phrasing. In the case of the former, the second position will always appear after the first XP, in the case of the latter, it will either appear after the first phonological word or the first phonological phrase.

Interestingly this dichotomy between morphosyntactically and phonologically determined second position patterns correlates straightforwardly with whether the placement of the second position element in question is island-sensitive or not. Patterns where the second position is defined in terms of morphosyntactic phrases obey syntactic islands whereas patterns where second position is defined in prosodic terms ignore syntactic islands alltogether. Consider the example from Lezgian below, which only includes the second conjunct for reasons of space. Here, the coordina-

[3]The example in Kalaallisut is a polysyndetic pattern whereas the example in Yorùbá is a monosyndetic pattern. As discussed in detail in Weisser (2024), the decisive criterion is whether they respective coordinator *can* appear in each conjunct, not whether they do in a given example.

tor appears in the second position but the second position is preceded by a complete noun phrase including a relative clause (i.e. a syntactic island). The phrase translating to *"one doubt that there are good and extremely bad customs in every Dahestanian village"* is an entire noun phrase and thus the coordinator *ni* appears after it. Crucially, it cannot appear inside the relative clause even though there are plenty of XPs in there that could potentially host it but since they are contained in a syntactic island, they are inaccessible.

(11) [Dağustandi-n har sa xür-e lap q^{h}san wa ag'alt'aj pis adet-ar
Daghestan-GEN every one village-INESS very good and extremely bad custom-PL
awa-j-da-l sa šak-**ni** ala-č]
be.in-PTCP-SBST-SRESS one doubt-COORD be.on-NEG
'... and there is no doubt that there are very good and extremely bad customs in every Daghestanian village.'
Lezgian, Haspelmath (1993, 366), gloss and translation adapted

Compare the example above now with the example from Yorùbá, in which the second conjunct starts with a conditional clause. Despite the fact that the conditional clause is merely contained inside the second conjunct and arguably an island, the coordinator appears inside of that island.

(12) [[tí òjò ba **sì** rọ̀], Olú yóò lọ sí Ìbàdàn].
if rain may AND fall Olú will go to Ibàdàn
'... and if it rains, Olú will go to Ìbàdàn.' Yorùbá, (Aremu & Weisser, 2024)

Against this background of a clear dichotomy between morphosyntactically determined second position elements and prosodically determined second position elements, I will now go on to provide two arguments for a transformational approach to these kinds of second position placement.

4 Alternations of shifting coordinators

4.1 The data

The first argument that I want to present in this paper is based on the observation that quite a number of the coordinators in my sample alternate between a canonical and a non-canonical position. On example for this comes from in Udihe, where the polysyndetic coordinator *de* usually appears in second position after the first XP of the clause but it can, under certain circumstances, also appear in clause-final position.

(13) ... [(Uti zoŋka mafasa)$_{XP}$-**de** iñekte-ili]...
... this poor old.man-COORD laugh-3SG ...
'... and the poor old man laughed...'
Udihe, (Nikolaeva & Tolskaya, 2001, 911)

(14) ... [bue-ni mamasa-ni jaŋca-la-i-**de**]
... he-3SG wife-3SG steer-VBLZ-PTCP-COORD
'... and his wife was going to steer.
Udihe, (Nikolaeva et al., 2002, 97), gloss adapted

A similar pattern we see can be illustrated with Rangi, where the coordinator *maa* can either appear in the position between the conjuncts as in (15) or in the position after the first morphosyntactic phrase of the second conjunct when it expresses some sort of contrast.

(15) [Mw-aaka ~~u~~-mw~~i~~ kw-a-j-áa na n-jala m~~u~~num~~uu~~nu~~u~~] [**maa** N-k~~u~~k~~u~~
3-year 3-one 17-PST-be-HAB with 9-famine too.much AND_THEN 9-chicken
a-ka-sea ...].
1-CONS-say
'One year, there was a very bad famine and the chicken said...'
Rangi, Bantu (Tanzania), Stegen (2011, 118)

(16) [K~~u~~-fuma ~~U~~la va-dom-áa na Haubi too-l~~uu~~mbya n-d~~uu~~ jaachwe] [(njir-ii)$_{XP}$
15-come Ula 2.PST-go-HAB to Haubi ITR-greet 10-relative 10.3SG.POSS 9-way-LOC
maa va-ka-h~~u~~mul~~u~~ka]
but 2-CONS-rest
'From Ula, they went to Haubi to greet his relatives but on the way then, they rested.'
Rangi, Bantu (Tanzania), Stegen (2011, 275)

In German, there is optionality as to whether the coordinator is positioned in the canonical position between the two conjuncts or after the first prosodic phrase of the second one.

(17) [Er will schon gehen] (**aber**) [(ich will ihm)$_{\varphi}$ (**aber**) noch etwas zeigen].
He wants already go but I want him but still something show
'He wants to leave already but I still want to show him sth.'

In Latin, *que*, which usually appears after the first phonological word of the conjunct, can appear in a canonical position between the conjuncts when the monosyndetic coordinator *et/at* is also pronounced.

(18) ... [(sub occasum)$_{\omega}$=**que** sol-is]
... before setting=COORD sun.GEN
'.... and before the setting of the sun'
Latin, Caesar, De Bello Gallico 2.11,

(19) [reliqui sese fug-ae mandar-unt] at=**que** [in proxima-s silva-s
remaining REFL flight-ACC gave-PERF.3PL and=COORD in near-ABL wood-ABL.PL
abdid-erunt].
hide-PERF.3PL
'The remaining ones fled and hid in the nearest woods.'
Latin, Caesar, DBG 1.12

Finally, another very common pattern found in many languages is that with clausal coordination, the coordinator occupies a canonical conjunct-final position but with nominal coordination, it attaches to the clausal second position. This is illustrated below with data from Lezgian. In (20), we see an example of the typical clausal second position after the first morphosyntactic phrase (here: the noun phrase *wil-er* ('eyes')) whereas in (21) we see that with coordination of noun phrases, the coordinator attaches in the peripheral position at the very end of the respective conjuncts. Note also, that the second conjunct in (21) contains a possessor and would therefore be able to host a conjunct-internal second position element in between the possessor and the head noun.[4]

(20) [T'ur-ar ğil-er-a ama] [(wil-er)$_{XP}$-**ni** q̃ažğanda-l ala.]
spoon-PL hand-PL-INESS be.still eye-PL-COORD pot-SRESS be.on
'The spoons are still in their hands and the eyes are on the pot.'
Lezgian, (Haspelmath, 1993, 335)

[4] A somewhat similar pattern is found in Khwarshi Weisser 2023 where, in noun phrase coordination the facts are the same but in clausal coordination, rather than to the first XP of the clause, the coordinator attaches to the unmarked (i.e. absolutive) noun phrase.

(21) [Zu buba-**ni**] [bubadi-n buba-**ni**] čuban-ar x̂a-ji-bur ja
I.GEN father-COORD father-GEN father-COORD shepherd-PL become-AOR-SBST.PL COP
'Both my father and my father's father were shepherds.'
Lezgian, (Haspelmath, 1993, 328)

What all of these cases have in common is that a canonical position peripheral to the respective conjunct alternates either freely as in German or context-dependently with a second position of some sort.

Crucially, and this will become important below, we have not seen all logically possible interactions. We have seen morphosyntactically determined second position elements alternating with an initial or with a final position. The former was shown in Rangi, the latter in Lezgian or Udihe. We have also seen prosodically determined second position elements alternate between an initial and a second position, as evidenced by German or Latin. Crucially, what we have not seen is a prosodically determined second position element alternating between a final and a second position. This three-out-of-four pattern is illustrated below.

(22) **Alternations with morphosyntactically determined second-position elements**:

a. $[\,A_1, A_2 \ldots A_n\,]$ ✔ $[\,B_1 B_2 \ldots B_n\,]$

b. $[\,A_1, A_2 \ldots A_n\,]$ $[\,B_1$ ✔ $B_2 \ldots B_n\,]$

(23) **Alternations with phonologically determined second-position elements**:

a. $[\,A_1, A_2 \ldots A_n\,]$ ✔ $[\,B_1 B_2 \ldots B_n\,]$

b. $[\,A_1, A_2 \ldots A_n\,]$ $[\,B_1$ ✘ $B_2 \ldots B_n\,]$

The immediate question that arises is why this should be the case and whether transformational and base-generation approaches can explain this restriction in a straightforward way. In fact, I would like to argue that a base-generation account has no explanation for this asymmetry available whereas under a transformational account, a completely straightforward answer can be found.

4.2 The argument for a transformational account

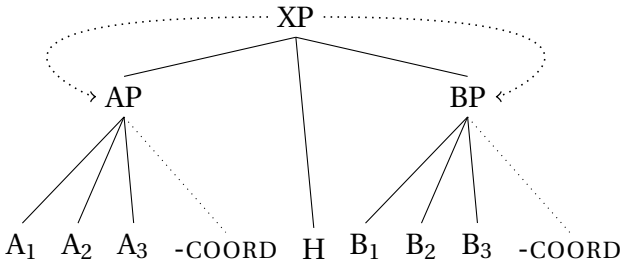
In the previous section, we saw that quite a number of the second position elements in my sample alternate between a semantically transparent position and a second position inside one of the conjuncts. Such alternations are relatively easy to derive in a transformational account, which assume there to be an underlying semantically transparent position anyway. All one needs to do is then design the transformation such that it maps the underlying peripheral position to a second position. Transformations found in the literature like Prosodic Inversion (Halpern 1995) or Merger (Marantz 1988; Embick & Noyer 2001) will do that. The final step is to make sure that the transformation in question will apply in the right configuration. Consider an alternation like the one from Rangi above. In order to derive this pattern, one could suggest that in cases of neutral coordination, no transformation applies and hence the coordinator remains in its transparent position. But in cases of contrastive coordination, syntactic movement takes place and moves exactly one

XP across the coordinator.[5] Abstracting away from technicalities, we could also entertain a parallel account by means of Merger, according to which a contrastive coordination head undergoes Lowering across an XP in a lower specifier.

In a base-generation account, the recurring observation of alternations between two positions might be somewhat unexpected at first sight but it can still be captured with additional stipulations. The most obvious solution to adapt to the facts would be to make the above-mentioned placement calculation algorithm sensitive to the differences in morphosyntactic features. Taking again the example from Rangi, it might be plausible to assume that an OT-calculus in the sense of Anderson (2005) will give a second position as the optimal candidate in case there is a contrast between the conjuncts and a peripheral position between the conjuncts as the optimal candidate if there is no contrast. In a sense, what this means is that, you could simply introduce two placement rules for the coordinator, one which applies in case there is a contrast between the clauses and one which applies if there is not.

A similar account could be made to work for a feature percolation account in the spirit of Bermudez-Otero & Payne (2011). Taking the alternation from Udihe, one could say that the coordinator either percolates onto the first or the last phrase depending on the configuration:

(24) A feature percolation account for the alternation in Udihe:



If it percolates onto the first phrase of the second conjunct, it will be realized to the right of that phrase, which will result in the second position of that phrase but if it happens to percolate to the last phrase, it will be realized in the peripheral, final position. Assuming one can thus parametrize the feature percolation such that it is sensitive to the right morphosyntactic contexts, we can thus derive the alternation in Udihe. In the optimization approach by Anderson (2005), we could potentially assume that the alternations arise as the result of rerankings of the constraints depending on the different configurations thereby leading to a different ideal candidate.

So, a priori, both accounts can somehow deal with the alternations between a peripheral and a coordinand-internal position. The argument that I want to put forward crucially rests on the fact that we do not seem to find all logically possible alternations. The generalization in (25) states the empirically attested three-out-of-four pattern noted above in a slightly different way.

(25) Generalization of second position placement alternations:
A morphosyntactically determined clitic can alternate between both an initial and final and second position whereas a phonologically determined clitic can only alternate between an initial position and a second position.

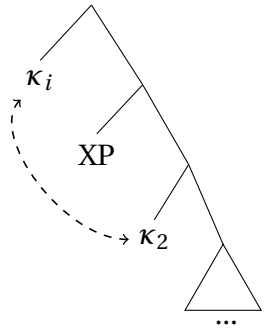
The argument to be put forward in this paper is that, under a transformational approach, this generalization falls out more or less straightforwardly whereas a base-generation approach has no immediate way of restricting the possible alternations.

Let us start with the transformational approach: The logic behind the approach was that the

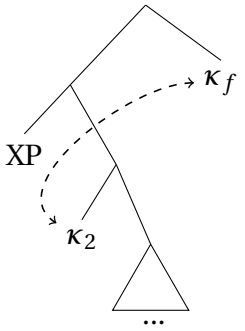
[5] See Weisser (2024, 2025) for a discussion of why transformations dislocating the coordinator itself are empirically to be preferred over syntactic movement transformations in most cases, even in cases involving morphosyntactically defined second position patterns.

two positions constituting the alternation were derivationally related. The peripheral position is the underlying position of the transformation whereas the second position was the surface position resulting from the transformation. Since these two positions are derivationally related, it comes as no surprise that locality conditions should hold between the two positions. In fact, one should in fact expect locality conditions to hold as transformations are generally assumed to be subject to locality conditions. Furthermore, it is a completely plausible assumption to make that the locality conditions for morphosyntactically determined clitic placement are morphosyntactic in nature and that the locality conditions for phonologically determined clitic placement are phonological in nature. Morphosyntactic locality is structural in nature and usually calculated based on c-command and phonological locality is linear in nature and calculated based on linear order. Nothing more needs to be said to derive the three-out-of-four pattern. Consider the trees in (26) and (27). They show that, structurally speaking, a second position (here indicated as κ_2) is sufficiently local to a initial and a final position (here indicated as κ_i and κ_f) . In both cases, exactly one XP must be skipped.[6]

(26)



(27)



Consider now the representations in (28) and (29) for phonologically determined second position placement. These are calculated over linear strings (indicated by the precedence symbols $\prec$) and suddenly we see that a second position is only local to an initial position (28) but radically non-local to a final position in (29). In (28), again, only one element (A) has to be skipped whereas in (29), there is in principle no upper bound to what we would need to skip.

(28) $\kappa_i \prec \text{A} \prec \kappa_2 \prec \text{B} \prec \text{C} \prec \ldots \prec \text{Z}$ ✔

(29) $\text{A} \prec \kappa_2 \prec \text{B} \prec \text{C} \prec \ldots \prec \text{Z} \prec \kappa_f$ ✘

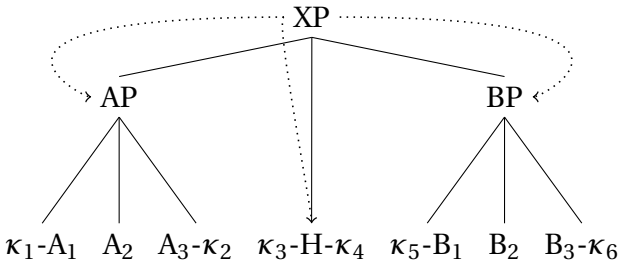
This provides a straightforward explanation for the three-out-of-four pattern we observed and the generalization in (25). A second position element is structurally local to a initial or a final element as structural locality is computed by means of c-command but when it comes to linear locality, a second position element is only local to an initial element. Depending on the size of the domain, a second position element can be extremely non-local to a final element. Under a transformational approach, we can simply say that the dislocation transformation that yields second position placement is subject to locality and as such a phonologically determined second position element must be underlyingly initial in order to be able to land in second position.

Base-generation approaches, on the other hand, do not have the option to attribute the three-out-of-four pattern to issues concerning locality. The reason is that the two positions that the

[6]Note that the assumption that morphosyntactically determined second position placement is sensitive to hierarchical structure and c-command whereas phonologically determined second position placement is not receives further support from the observation made above that only the former is sensitive to syntactic island configurations.

clitic alternates between are not derivationally related. In a transformational account, the peripheral position served, in a sense, as the input to the transformation and the second position served as the output. Clearly, it makes sense to assume that locality conditions can hold between the input and the output of a transformation. In a base-generation approach however, the peripheral position and the second position are two unrelated outputs. In the OT approach by Anderson (2005), they are two different output candidates of a calculus that determines the optimal position in given configuration. In the feature percolation approach by Bermudez-Otero & Payne (2011), they are two different outputs of different percolation mechanisms. As such, it is completely unclear why locality conditions should hold between two unrelated outputs. In terms of locality, all available clitic positions in a system like Bermudez-Otero & Payne (2011) are equally local or non-local to the maximal projection that serves as a starting point for feature percolation. Consider the representation in (30). The underlying locus of the feature on the maximal projection XP is equally local to all final clitic positions κ_1–κ_6. Feature percolation may or may not be subject to locality considerations. Importantly however, what we clearly do not expect is for locality conditions to hold between the different positions κ_1–κ_6.

(30) Feature percolation in Bermudez-Otero & Payne (2011):



To give a concrete example, in order to predict whether an alternation between a second and a final position is allowed, we would need to figure out whether position κ_2 and position κ_6 in local to each other. But given how the system works, we do not expect this to have an effect. The same holds for the OT-account by Anderson (2005). Here, the two positions arise as the two optimal candidates in different competitions and possibly even under different constraint rankings. There is no reason why locality conditions should hold between the outputs of different optimizations.

Overall, the transformational account predicts a much more restricted set of possible and impossible alternations. In base-generation accounts, there is, a priori, no way to constrain the system once we acknowledge that we need to provide for alternations. Thus, we would possibly expect to find second position elements that alternate between a morphosyntactically determined second position after the first XP and a phonologically determined second position after the first phonological phrase.[7] Similarly, we might expect alternations between second and second-to-last position clitics. None of these things seem attested. So, in a sense, we could say that the non-existence of an alternation of a final position with a phonologically determined second position, is only one of the cases that is expected under a base-generation approach but for all we know unattested. Crucially however, in this case, the non-existence seems particularly noteworthy especially because the minimally different alternation of a final position with morphosyntactically determined second position is attested.

[7]It is sometimes assumed (see e.g. Halpern 1995) that Bosnian/Serbian/Croatian allows for an alternation of a second position after the first XP and after the first phonological word. However, following the argumentation in Bošković (2001), I take these effects to be the result of syntactic subextraction rather than as the result of parametrized second position placement. Thus, I am yet to see a convincing case of an alternation between two non-peripheral positions (e.g. two different second position patterns).

5 Opacity

The second argument for a transformational view is based on the interaction of clitic placement with other grammatical processes. As we have seen, under a transformational analysis, the coordinator has an underlying canonical position and then, later, will be displaced to a non-canonical surface position. The best arguments for such a derivational view traditionally come from cases of opacity. (i) If the coordinator can be shown to be located in its underlying position for some grammatical processes (i.e. if its shifting can be shown to counterbleed other processes), then this counts as a strong argument for a derivational approach in terms of a transformation. Further, if a coordinator can be shown to not yet be located in its surface position for some grammatical process (i.e. if its shifting can be shown to counterfeed other processes), we have a similarly strong argument for the derivational approach. Fortunately, shifting coordinators provide us with both counterbleeding and counterfeedings types of arguments for a transformational approach.[8]

As a general part of the methodological approach taken in Weisser (2024), it is of course important to show that the elements under considerations are in fact coordinators and not some adverbs or pragmatically licensed modal particles that tend to appear in coordination contexts. One of the several diagnostics I apply in order to test this is whether the element under investigation licenses coordination-specific processes like Right-Node-Raising, Gapping and ATB-movement. The presence of an adverb or a modal particle in the second conjunct should arguably have no effect on the applicability of a process like ATB-movement but the presence of a coordinator should.

Consider the examples from German below. Both processes require the presence of a coordinator as can be shown in (31).

(31) a. Was hat sie [ihm gekauft] *(**und**) [in der Bahn vergessen]?
what has she him bought but in the train but forgotten
'What did she buy for him but forget on the train? ATB-movement

b. ... weil [Sammi eine Schatzkarte ~~gemalt hat~~] *(**und**) [Remi eine Haifamilie
because Sammi a treasure.map drawn has and Remi a shark.family
gemalt hat].
drawn has
'because Sammi has drawn a treasure map and Remi a family of sharks.' Right-Node Raising

Importantly, we note that both processes are also perfectly applicable without the presence of *und* as long as there is a shifted coordinator *aber* ('but') inside the second conjunct.

(32) a. Was hat sie [ihm gekauft] [in der Bahn *(**aber**) vergessen]?
what has she him bought in the train but forgotten
'What did she buy for him but forget on the train?

b. ... weil [Sammi eine Schatzkarte ~~gemalt hat~~] [Remi *(**aber**) eine Haifamilie
because Sammi a treasure.map drawn has Remi but a shark.family
gemalt hat].
drawn has
'because Sammi has drawn a treasure map and Remi a family of sharks.'

Interestingly, what we find however, is that the process is also licensed by the shifting coordinator *aber*. Note that *aber* can license the process from a position that is, at least potentially, quite non-local in a structural or linear sense. In the example in (33), the surface position of *aber* is quite

[8] The logic of this kind of argument mimics the logic used in Kalin (2022), who uses opacity effects of allomorphy choice to argue for a transformational account of infixes.

non-local to the deleted material in the first conjunct.

(33) ... weil [sie ihm Blumen ~~geschenkt hat~~] [er ihr ohne mit der Wimper zu zucken
because she him flowers gifted has he her without with the eyelash to bat
aber nicht einmal ein Lächeln geschenkt hat].
but not even a smile gifted has
'because she gave him flowers but without batting an eye he didn't even give her a smile.'

Similar facts come from VP-ellipsis in Yorùbá, which also requires a coordinator to be present. As the example in (34) shows however, the shifted coordinator will do the trick as well.

(34) [Níyì sọ pé òjò ń rọ̀], [Adé kò *(***sì**) sọ béè].
Niyi say that rain PROG fall Ade NEG AND say so
'Niyi said it is raining and Ade didn't.'
Yorùbá, Aremu & Weisser (2024)

The most plausible assumption, I think is that, in a derivational sense, the coordinator behaves like a proper coordinator in the syntax and its surface position is derived by a late transformation that however does not have an impact on earlier, syntactic processes. In other words, the displacement of the coordinator counterbleeds licensing of Right-Node-Raising. Other languages in which shifting coordinators license coordination-specific ellipsis processes are Yorùbá (Aremu & Weisser 2024), Oklahoma Cherokee (Feeling 1975), Lezgian (Haspelmath 1995), Polish and Sinhala.

The second kind of argument is, in a sense, the exact opposite of the situation above. Just as we can show that the coordinator counts, for some processes, to still be in its underlying position, we can also show that for some processes, it does not yet count as being in its surface position. The crucial examples here come from Polish and involve the frequently discussed phenomenon of mobile inflections (see e.g. Booij & Rubach 1987; Borsley & Rivero 1994; Embick 1998; Franks & Bański 1999; Migdalski 2006). We saw that mobile inflections in Polish can appear on any preverbal constituent of the clause such as subjects (35a), objects (35b), subordinate complementizers (36a) or adverbs (36b).

(35) a. Ty-ś to widział
you-2SG it saw
b. Ty to-ś widział
you it-2SG saw
'You saw it.' Embick (1998) citing Dogil (1987)

(36) a. Janek powiedział że-ś pojechał do Warszawy
Janek said that-2SG went to Warsaw
'Janek said that you went to Warsaw.' Borsley & Rivero (1994)
b. Pewnie-śmy juz tam byli
perhaps-1PL already there were
'Perhaps we have already been there.'

In stark contrast however, this process cannot affect coordinators such as the canonically placed coordinator *ale*. The result is ungrammatical. Crucially, even though *zaś* is linearly contained inside the second conjunct, it behaves just like a prototypical coordinator such as *ale* in (37a). *Zaś* cannot act as a host for the mobile inflections even though its linear position suggests that it should (37b).

(37) a. *... ale-śmy my juz tam byli.
... but-1PL we already there were

'but we have already been there.'

b. *... my zaś-my juz tam byli
... we but-1PL already there were
'but we have already been there.'

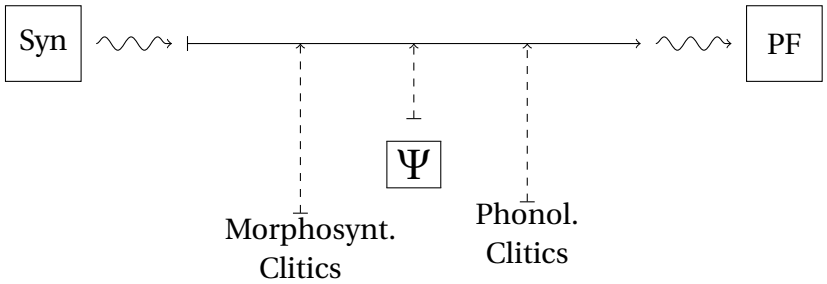
Parallel to the discussion above, we can take this as evidence that Polish *zaś* is a prototypical coordinator. Moreover, we can draw the additional conclusion that this indicates that the process displacing *zaś* in its surface position comes too late for it to be affected by the placement of the mobile inflection. The coordinator is not yet in its surface position when the mobile inflections are placed. In other words, the placement of the coordinator counterfeeds the placement of the mobile inflection.

Both of these arguments based on interactions provide a strong case for the derivational placement of the coordinators according to which they are base-generated in their canonical position underlyingly but later are displaced to their surface position by some late shifting rule. In addition with the argument coming from the placement alternations above, this provides further evidence for a transformational treatment of coordinators and second position elements more generally.

6 Consequences

The arguments put forward in this paper can be taken to support of view of second position placement that arises as the result of a displacement transformation that can apply at different stages of the derivation. During the discussion of the first argument that was based on the positional alternations of shifting coordinators in my sample, we noted that a transformational approach, in which second position can arise based on morphosyntactic structure *or* on the basis of phonological structure seems the most promising to derive the attested patterns. Coupled with the logic from the second argument involving opacity, such an approach straightforwardly lends itself to having a single second position transformation that applies at different stages of the derivation. In such a system, the differences between morphosyntactically determined placemement patterns and phonologically determined placement patterns follow from derivational timing as they can be interleaved with other structure-manipulating operations, in particular the change from hierarchical to linear order and the mapping from syntactic constituency to prosodic constituents. We can illustrate this as in (38) where the point Ψ indicates the point in the derivation where hierarchical strings are linearized and syntactic categories are mapped to prosodic constituents.

(38)



This model is in line with the conclusions we drew earlier when talking about the differences in locality between morphosyntactically determined placement and phonologically determined placement and further, it also has the opacity facts fall out without further ado. The coordinator will count as a proper coordinator for all syntactic purposes (such as the licensing of ATB-movement, etc.). It is only for other late processes and genuine phonological processes that the coordinator

sounds like it is in its surface position.[9]

7 Conclusion

In this paper I contrasted two approaches to second position placement: First, a base-generation account that calculates the surface position of an underlying abstract syntactic representation that the second position element is associated to. Secondly, a transformational approach, in which the second position element is base-generated in a, semantically transparent, peripheral position and then undergoes a local transformation that places it in second position.

In this paper, I provided two arguments for the latter view based on my typological study of shifting coordinators in Weisser (2024). The first of the arguments was based on positional alternations of second position coordinators that, in some configurations, appear in a semantically transparent peripheral position. The main takeaway of this discussion was that while both types of approaches can account for positional alternations in principle, only the transformational approach has a concrete handle as to how to derive which logically possible alternations are actually attested and which are not. Under a transformational account, we can straightforwardly constrain the alternations by saying that only peripheral positions can alternate with second position patterns if they are sufficiently local. Under a base-generation account, in principle all sorts of possible alternations are expected. I focused on the crucial case of an unattested alternation between a domain-final peripheral position and a phonologically determined second position in order to show that a base-generation approach cannot rule out this possibility while a transformational approach can simply invoke very straightforward assumptions about different kinds of locality to rule out this pattern.

The second argument was based on the derivational timing of the assumed transformation. I showed that even though shifted coordinators appear deeply embedded into the second conjunct, they do count as being in their syntactically expected base position. The examples I gave involved Right-Node-Raising and ATB-movement in German as well as VP-ellipis in Yorùbá. All of these processes require the presence of a coordinator but are also licensed by a shifted coordinator inside the second conjunct. The most straightforward explanation, I argued, is that the coordinator behaves like a proper canonical coordinator in the syntax and then shifts to its surface position only very late. We also observed the flip side of this assumption in Polish where I showed that the shifted coordinator *zaś* is unable to host the mobile inflection markers even though it is in the right position on the surface. Again, the assumption was that, at the time when the mobile inflection was placed, the coordinator was not yet in its surface position.

Both arguments together, I think, make a strong case for a transformational view on second position placement.

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[9]The reader is referred to Weisser (2024) for a much more detailed discussion of the theoretical consequences for the modelling of clitics in general and second position elements in particular. In that work, I also present a coherent framework called the *Distributed Integration account*, which has exactly the property of interleaving clitic placement with linearization and the generation of prosodic constituents. Similarly to the discussion in this paper, which argues for a transformational account, this work also provides arguments that the most promising account of clitics needs to be (a) cyclic, (b) subcategorization-based and (c) distributed.

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