

Prosodically determined dislocation of coordinators

Project Description

The topic of this project is prosodically determined dislocation of clitics, a process where an element is dislocated for prosodic or phonological reasons to a position where it syntactically does not belong. This process has immediate consequences for our theories about the interaction of syntactic structure and prosody as it teaches us in what way prosodic structure can influence the ordering of syntactic elements. The empirical domain of this project are instances of clausal and phrasal coordinators which do not surface in the linear position in between the two coordinands they connect. Even though one instance of this pattern often serves as a poster child for instances of phonologically determined dislocation (i.e., the case of the Latin conjunction *que*), no crosslinguistic investigation of this phenomenon has been undertaken so far. Patterns of what I call *shifting coordinators* constitute an ideal testing ground for theories of cliticization in general and for prosodically determined dislocation in particular since we can straightforwardly determine their syntactic base position and rule out syntactic movement as the source of the dislocation. The theoretical hypothesis pursued in this project is the following: A coherent theory that can account for the attested variation of instances of prosodically determined dislocation of coordinators and cliticization more generally requires (i) a system that cyclically maps syntactic structures to prosodic ones *and* (ii) an optimizing component which weighs lexical specifications of certain clitics against general prosodic requirements of a language.

1 State of the art and preliminary work

Prosodically determined dislocation:

The object of study in this project is the phenomenon of prosodically determined dislocation (PDD). Under this notion I subsume non-vacuous dislocation processes of clitics and clitic-like elements that exhibit the following three properties:

- (i) The dislocation process is sensitive to prosodic/phonological phrasing rather than to syntactic constituency,
- (ii) it ignores applicable syntactic islands,
- (iii) it applies after all morphosyntactic processes or operations in a given language and some but not necessarily all morphophonological ones.

Instances of PDD, which pass the three diagnostics (i-iii) above, are usually taken to apply at some point during the mapping from syntactic hierarchical structure to linear prosodified strings and are immediately relevant to the current theories about the architecture of grammar as they inform us about the governing principles of that mapping algorithm. Accurate case studies of PDD shed light on important research questions involving the syntax-prosody mapping such as the question of whether syntax is mapped to prosody by means of a fixed set of rules or by means of violable constraints. Similarly, it may inform us as to whether syntactic structure is mapped onto prosodic structure in one fell swoop at the very end of a syntactic derivation or in cycles, and if so, what the actual size of these cycles is.

For quite some time, the standard approach to PDD was that it does not exist (see the treatment of clitics in Zwicky 1977, 1985 and Klavans 1985, 1995, Miller 1992). In general, it was assumed that surface distribution of independent morphosyntactic elements was entirely a matter of syntax and could not be sensitive to phonological or prosodic properties. However, detailed studies of various phenomena, most notably Slavic second-position clitics, argued for the existence of PDD (Halpern 1995, Schütze 1994, Embick & Izvorski 1997, Franks 2000). Halpern (1995), for example, argued that clitics in Serbo-Croatian can undergo a process called *Prosodic Inversion*, which dislocates them exactly one word to the right from their syntactic position. He conceived of Prosodic Inversion as a

repair operation triggered in configurations where the clitics in question would otherwise end up in a clause-initial position.

As a response, Bošković (2001) tried to save the assumption that clitics cannot be placed in the phonology by devising a system that accomplishes clitic placement by means of movement in the syntax. The syntax generates a set of possible derivations and the phonology filters out the ones that do not conform to phonological or prosodic principles (an approach often referred to as the phonological filter-approach). In the case of second position clitics in Slavic, Bošković (2001) argues that several syntactically well-formed movement steps can apply and the actual placement of the clitics in question crucially relies on the phonology to decide which element of these movement chains is pronounced. In this theory, phonology cannot dislocate morphosyntactically independent elements on its own but only introduces a set of constraints or filters to decide amongst a number of syntactic derivations.

This kind of phonological filter-approach, which was already anticipated in early works by Zwicky & Pullum (1986) and Miller et al. (1997), is often invoked for processes whose application is partly influenced by prosodic considerations (such as the dative alternation and heavy-NP-shift (see amongst many others Zwicky 1986, Inkelas & Zec 1990, Grimshaw 2005, Bresnan et al. 2007, Anttila et al. 2010) or object shift (see e.g., Holmberg (1999), Erteschik-Shir (2005)). But for patterns of clitic placement, case studies including other Slavic clitics but also from various other languages unearthed quite a number of cases where phonological filter approaches such as Bošković (2001) failed to account for the distribution of clitics. Embick & Noyer (2001, 2007) give a number of case studies including one involving the Latin conjunction *-que* which conjoins various syntactic categories and reliably appears after the first phonological word of the second conjunct. The coordinator *que* attaches to the first word of the second conjunct (1-a) unless this word is a monosyllabic preposition, in which case it skips one word more (1-b). This strongly suggests that it is sensitive to phonological wordhood rather than morphosyntactic wordhood, which illustrates that the case of Latin *que* fulfills diagnostic (i) above. Note also, that the example in (1-a) illustrates that *que* shifts into syntactic islands (diagnostic ii) since preposition phrases in Latin do not allow for extraction (see Vincent 1999, Hewson & Bubenik 2006, Ledgeway 2012). In all examples, the coordinands are given in brackets and the coordinator as bolded.

- (1) a. ... [sine scut-is] [sine=**que** ferr-o] fu-erint
 without shield-ABL.PL without=AND iron-ABL be-SUBJ.PERF.3PL
 ‘... that they were without shields and without swords’ adapted from Embick 2007, 309
- b. Is [istum reliqui-t] [de provincia=**que** decess-it]
 he it leave.PERF-3SG from province=AND depart.PERF-3SG
 ‘He left it and departed from the province.’ Cicero, Against Verres 2.2.48

Finally, the case of Latin *que* can be shown to fulfill diagnostic (iii): Latin has some elements that strive to occur in a syntactically defined second position of the clause (i.e. after the first syntactic constituent) including the modal particle *enim* (‘indeed, in fact’). When cooccurring together with *que*, the second position requirement is suspended and *enim* is linearized in third position.

- (2) [Hoc=**que** enim non rationabile est]
 that=and surely not reasonable is
 ‘and this is surely not reasonable.’ Aristoteles latinus, 1000b30

In the meantime, quite a number of instances of PDD have been found: Chung (2003) discusses certain clitics in Chamorro and argues that they are located at the right edge of the prosodic phrase that is initial to the intonation phrase. Legate (2008) analyzes second position clitics in Warlpiri and arrives at the conclusion that while most of the placement properties of clitics in this language can be accounted for by means of syntactic operations, there is a certain residue which can only be explained by resorting to PDD. Other notable cases of clitics that are placed in reference to phonology or prosody are found in Kaisse (1981), Peterson (2001), Harris (2002), Anderson (2005), López (2009), Kahnemuyipour & Megerdooian (2011), Elfner (2012, 2015), Huijsmans (2015), Bennett et al. (2016), Branen (2018) and Rolle & O’Hagan (2019). Subsequent studies about Slavic reiterating the necessity for PDD are found in Harizanov (2014) and Franks (2017).

As for the modelling of PDD, we can identify two overall views: The first one is what I call the operation-based view. It posits a concrete operation which applies at some point during the mapping from morphosyntax to phonology and changes the linear order of the elements in question. The operation in question was proposed by Embick & Noyer (2001) (building on earlier work by Marantz 1988) and is called Local Dislocation. It is widely employed to model dislocation processes which often exhibit a PDD profile (see e.g., Embick 2007, Adger 2006, Kramer 2010, Arregi & Nevins 2012, Guseva & Weisser 2018, Salzmann 2019). Local Dislocation is typically viewed as a single operation triggered by a lexical specification of the vocabulary items in question. Notably, Local Dislocation applies cyclically (at least to a certain extent) in that it reorders words with words and subwords with subwords, where a subword constitutes a word-internal constituent.

The configuration-based view, on the contrary, does not posit a specific reordering operation such as Local Dislocation. In this view, reordering of clitic elements emerges as either a repair mechanism that applies in order to repair a prosodically unfavorable configuration (as in Halpern's (1995) original proposal) or as a side-effect of unfaithful syntax-to prosody mapping. Either way, in the classification in the Syn~~to~~Syn project of this application, the approaches would be treated as clear cases of repair and the proposed solution would fall under the notion of stratification (an instance of the concept of layering discussed in the main proposal). Harris (2002) and Anderson (2005) both propose configurational accounts which place the respective clitics by means of optimization of ranked constraints. Other, often more recent proposals (see especially Elfner 2012, Bennett et al. 2016, Branan 2018) couch their theory of PDD in a broader optimality-theoretic framework of the general syntax-prosody interface. In this view, PDD of second position elements is triggered by a constraint (often called STRONGSTART) that penalizes prosodically weak clitic-like elements at the beginning of a given prosodic domain. Since STRONGSTART is higher-ranked than the general constraints favoring faithful one-to-one mapping of syntactic terminals to prosodic structure, reordering of elements emerges as the less costly option.

The two views of PDD currently exist alongside each other, and so far, no serious approach has been undertaken to reconcile the two perspectives or propose a coherent theory that accounts for the data presented by both sides. The current project will pave the way towards a common ground by comparing the pros and cons of the approaches in question and evaluate their empirical coverage. Further, I will develop a theoretical model that combines the strengths of both accounts and covers the empirical data discussed on both sides as well as the ones gathered in this project.

The role of cyclicity and optimization in accounts of PDD:

The concepts of cyclicity and optimization have been discussed in both accounts to a certain extent although the different camps naturally emphasized different properties of instances of PDD. On the one hand, the view I called the operation-based view, i.e. modelling of PDD by means of an operation like *Local Dislocation*, typically emphasized the necessity to apply Local Dislocation in a cyclic manner so that it always reorders morphemes with morphemes and words with words. For the case of the Latin conjunction *que* skipping monosyllabic prepositions (as in (1-b)), it is necessary to apply several steps of Local Dislocation in a bottom-up fashion: First, the preposition cliticized to its complement and only in a second step *que* can then skip them both as they then form a single unit. It should be noted, however, that approaches that make use of Local Dislocation have so far not embraced a fully cyclic model that extends up to the level of the prosodic phrase. Embick & Noyer (2001), for example, allow for the cyclic formation of Local Dislocation in order to form constituents that are equivalent to phonological words but explicitly reject the notion of forming prosodic phrases in this manner. As a consequence, Local Dislocation cannot skip a prosodic phrase (see also Shwayder 2015 for discussion of this issue). However, given the results of my pilot study about the shifting coordinators *aber* and *zaś* in German and Polish (see below and Weisser (2020)), this is an undesirable result. The results of this study suggest that cyclicity seems to be required throughout the model, starting from morphemes and words up to prosodic phrases and intonation phrases.

As for the concept of optimization, operation-based accounts typically assume that PDD is triggered by some sort of lexical specification feature but very few accounts are particularly explicit about the nature of these specifications. One of the few approaches which discuss the issue from an operation-

based perspective is Arregi & Nevins (2012), who use a cyclic framework couched in the general Distributed Morphology architecture and assume that Local Dislocation is triggered by configurational considerations (e.g., that a given element not be the first one in a prosodic word). As such, they introduce the notion of Local Dislocation as a morphophonological repair operation. And while they do not (explicitly) implement this notion against the background of Optimality Theory, it certainly instantiates the concept of optimization as defined in the main proposal. However, it is clear that a more formal modelling is required for more complex cases. In particular, cases where different repairs appear in slightly different configurations pose problems for simple notions of optimization.

As for the configuration-based view of PDD, the concept of cyclicity is subject of an ongoing debate. Since configuration-based accounts view PDD as a side-effect of an unfaithful mapping from syntax to prosody, the question of whether PDD applies cyclically ultimately comes down to whether the algorithms that map syntactic structures to prosodified strings apply cyclically or not. Algorithms based on ALIGN/WRAPXP-constraints (Selkirk 1986, 1995, Truckenbrodt 1995, 1999) or those based on MATCH-constraints (Selkirk 2011 et seq.) typically apply in a non-cyclic fashion. The syntax-prosody mapping in these accounts typically applies in parallel Optimality Theory and maps the whole syntactic configuration to a prosodic string in one fell swoop. However, recent literature has demonstrated that many apparent mismatches between syntax and prosody can be explained if one adopts a cyclic approach to syntax prosody mapping (see amongst many others Seidl 2001, Dobashi 2003, Wagner 2005, Ishihara 2007, Kratzer & Selkirk 2007, Pak 2008, Newell 2008, Wagner 2010, Féry 2011, Newell & Piggott 2014, Wierzba 2017). In addition, the cited works discuss the questions of how big the actual cyclic domains are and how closely the prosodic cycles correspond to syntactic spell-out cycles.

The concept of optimization is an integral part of the vast majority of configuration-based approaches. The trigger for a given instance of PDD lies in the prosodic deficiency of a faithfully mapped prosodic configuration and PDD emerges simply as a repair that is less costly than others. Accordingly, these approaches typically emphasized the need for optimization and evaluation of possible outcomes of the syntax-prosody mapping and various possible ways of repairing potential prosodic deficiencies are weighed against each other. Bennett et al. (2016), for example, show that different repairs are applied when a clitic-like weak pronoun appears at a prosodically unfavorable position. In some configurations, the structure is repaired by having the pronoun cliticize to some preceding element and in some configurations, it is repaired by enhancing the pronoun with prosodic strength, as it then no longer violates the constraint against prosodically weak elements in a given position. Finally, in some configurations, PDD is the least costly repair and thus the weak pronoun is dislocated to a different position. Crucially, the different repairs are compared in every configuration and thus optimization plays a crucial role in these accounts. A coherent unified model that seeks to explain all of the observed variation will inevitably require in-depth investigation as to whether the two views can be reconciled at least in part and which properties of the two lines of approaches should be maintained and which should be discarded.

Coordination and shifted coordinators:

Empirically, this project will be concerned with instances of PDD of clausal and phrasal coordinators. Clausal and phrasal coordinators, a concept under which I subsume conjunctions, adversative conjunctions as well as disjunctions, are typically located in the position in between the two coordinates they connect (as in 'X *and/or* Y') but as the Latin examples in (1) show, there are exceptions to this rule. As noted above, the conjunction *que* follows the first phonological word of the second conjunct (i.e., Y).

The pattern of the Latin shifted coordinator *-que* often serves as the classic poster child for instances of PDD because it cannot plausibly be reanalyzed as either base-generation or syntactic movement: Syntactically and semantically speaking, the coordinator belongs in position in between the two conjuncts, which means that we can pinpoint the underlying syntactic position quite easily and thus straightforwardly establish the properties of the dislocation process itself. And unlike other clitics such as the above-mentioned second position clitics in Slavic, we can also rule out syntactic movement as the source of this dislocation. Coordination structures are known to be opaque to syntactic movement due to the Coordinate Structure Constraint (CSC, Ross 1967), which is well-known to be one of the strongest syntactic islands attested. In addition, we can even note that the few attested cases of CSC-

violations all involve elements moving out of the first conjunct. The cases of shifted coordinators that I have come across so far all involve shifting of the coordinator into the second conjunct, which makes a movement analysis even less plausible. Finally, given that we can pinpoint the base position of the dislocation process quite straightforwardly, we can determine much more easily whether the dislocation process in question ignores syntactic islands. Similarly, we can test whether the position the clitic is dislocated to is defined in terms of prosodic phrasing or in terms of syntactic constituency. In other words, shifting coordinators allow us to (a) identify instances of cliticization with a very high certainty compared to other phenomena and (b) among those cases of cliticization, they allow us to identify instances of prosodically determined cliticization more easily. A study of shifted coordinators thus promises to yield clearer patterns of cliticization movement compared to, for example, weak cliticizing pronouns since we know the syntactic base position of the coordinator with high certainty whereas pronouns are known to be syntactically mobile. Any study of the cliticization of pronouns is thus always confronted with the confound that we can never be entirely sure whether the clitic has undergone syntactic movement or not. With coordinators, we can be reasonably sure because no case of syntactic movement of a coordinator has been observed so far. Overall, I am convinced that shifting coordinators are an ideal testing ground for the typology of cliticization in general and for the typology of PDD in particular.

Despite the immediate advantages of this empirical domain and the notability of the Latin example, no investigation of this pattern beyond Latin has been undertaken. The only exceptions are Agbayani & Golston (2010) who show that the same pattern also holds in Ancient Greek and Hittite as well as Mitrović (2014) who notes a few more examples in Indo-European languages of that time period. But crucially, a study of this pattern beyond these languages is crucially missing. This is not because patterns of shifted coordinators are not attested. Sadock (2003) notes that the coordinator *lu* in Kalaallisut/West Greenlandic can occur inside the second conjunct. Kornfilt (1997) notes that a coordinator in Turkish can occur inside the second conjunct. Other cases have been reported e.g. for Mandarin (Sino-Tibetan, Zhang (2006)); Hungarian (Finno-Ugric, Bánreti 1994); Rangi (Bantu, Stegen 2011); Yavapai (Yuman, Kendall 1976); Urarina (isolated (Peru), Olawsky (2006)); Evenki (Tungusic, Bultova & Grenoble (1999)); Iron Ossetic (Indo-Iranian, Erschler 2013); Sinhala (Indo-Iranian, Chandralal 2010); Lezgian (Northeast Caucasian, Haspelmath 1993). The phenomenon is, however, often found in related and/or neighboring languages as well and I expect many more cases to be uncovered in the course of this project. This project will conduct a number of case studies about these and other languages to determine whether these reported cases are indeed instances of shifted coordinators and if so, what properties they have.

The present project is made possible only because recent years have seen a heightened interest in both descriptive crosslinguistic typological work on the morphosyntax of coordination (see e.g. Haspelmath 2004 and contributions therein, Haspelmath 2007) as well as the theoretical modelling of the attested variation (see e.g. Zoerner 1995, Johannessen 1998, den Dikken 2006, Zhang 2010, Mitrović 2014, Mitrović & Sauerland 2014, Weisser 2015, Nevins & Weisser 2019). For so-called monosyndetic coordinators (i.e., coordinators of the English/German type where there is only one coordinator signalling the relation between the coordinands), the literature has largely agreed on an asymmetric syntactic structure of the type [X [& Y]] which can be observed in various contexts such as with binding asymmetries (Munn 1993, Aoun et al. 1994), movement asymmetries or agreement asymmetries. Starting with Munn (1987, 1993), there has been a debate as to whether the first coordinand is to be analyzed as an argument of or as an adjunct to the coordination head but in recent years, the large majority of diagnostics (and approaches) seem to favor the argument-analysis (see Zoerner 1995, Johannessen 1998, Mitrović 2014, Weisser 2015). Especially, the existence of First Conjunct Agreement strongly suggests that the first conjunct cannot be an adjunct (see e.g. Marušič et al. 2007, 2015, Bhatt & Walkow 2013, Willer-Gold et al. 2016, Murphy & Puškar 2018, Nevins & Weisser 2019). Relatively few works investigate the role of coordination structures in phase theory but it has been argued by Reich (2007) and Weisser (2015) that the coordinands of a monosyndetic coordinator each form a phasal spell-out domain. It will be an interesting research question whether the syntactic cycles (i.e., phases) and the cycles of prosodic optimization necessary to derive the shifting patterns coincide.

Coordination structures have been studied quite extensively from a prosodic point of view (see e.g.

Ladd (1986), Langendoen (1987), Taglicht (1998), Wagner (2005), Werle (2009), Wagner (2010), Féry & Kentner (2013)), presumably because they pose ideal testing grounds for how recursive syntactic structures are mapped onto prosodic ones. As such they are one of the main arguments for the existence of recursivity in prosodic structures. The phonology of cliticizing coordinators has occasionally been discussed with respect to questions of phonological cycles and strata (see e.g., Halle & Kenstowicz (1991) about Latin and Manam).

The polysyndetic coordination pattern is less well-known. Here, every coordinand bears a designated coordination marker (e.g., [X-& Y-&]) as illustrated in the example from Udmurt in (3-a) below. However, the relevant literature about the general morphosyntactic as well as prosodic properties of polysyndetic coordinators is much more scarce. Some of the papers in Haspelmath (2004) provide some case studies about coordination constructions of this type. Mitrović & Sauerland (2014) is, to my knowledge, the only study which discusses the pattern from a more crosslinguistic, typological perspective. However, they are mainly concerned with the semantic of polysyndetic coordinators as well as observation that polysyndetic coordinators are syncretic with focus markers in many languages. Thus, they do not discuss the syntactic, morphological and prosodic properties of this kind of coordinators in more detail. Mitrović & Sauerland (2014) adopt an underlying syntactic structure originally proposed by den Dikken (2006) for emphatic *either-or*-coordination, according to which, in addition to the coordination head, each coordinand is embedded into an additional layer of structure. And while this structure may serve as a starting point for future research, it is clear that the overall morphosyntactic and prosodic properties of polysyndetic coordinators require more research.

This project will conduct case studies about both types of coordination constructions and one of the most important research questions is in what respects PDD of monosyndetic and polysyndetic coordinators differ. Do they differ only in their morphosyntactic properties or do they also differ in their prosodic properties? The project at hand will also make an important contribution in investigating polysyndetic coordination patterns in general, an area which, as mentioned above, is very understudied.

One area that deserves mentioning is the relation between monosyndetic coordinators and polysyndetic ones which can cooccur in some but not all languages. In the Finno-Ugric language Udmurt, noun phrases can either be coordinated as in (3-a), (3-b) or (3-c) (examples from Weisser (2017)):

- | | | | | | | |
|-----|----|---------------------|----|-----------------|----|-------------------------|
| (3) | a. | Petyr-en Maša-jen | b. | Petyr no Maša | c. | Petyr-en no Maša-jen |
| | | Peter-INS Masha-INS | | Peter and Masha | | Peter-INS and Masha-INS |

The relation between these two types of coordinators is in fact very similar to the situation identified with the two types of morphosyntactic number investigated in the project Syn²Mor. Thus, the concepts of overexponence and underexponence as well as the theoretic machinery to capture these relations will prove very helpful. Overall, I believe that the project at hand will also have something to contribute to the understanding of polysyndetic coordination constructions in general.

As for the concrete focus of this project, the shifting coordinators, quite a number of patterns have actually been noted in the literature but only very few works have actually investigated these patterns in more detail. Bánreti (1994) discusses the case of the Hungarian coordinator *meg* which occurs inside the second conjunct but this description is interested more in the semantic and pragmatic uses of *meg*. Bodányi (2013), however, argues that *meg* is not a coordinator but rather a modal particle. Zhang (2006, 2010) analyzes the behavior of the Mandarin coordinator *keshi* and gives a number of arguments for its analysis as a real coordinator. Büring & Hartmann (2015) briefly discuss the behavior of the German adversative coordinator *aber* (already mentioned in Ross (1967)) and try to account for its unusual surface position by analyzing it as a modal particle.

In recent work, I have conducted a pilot study about German *aber* and Polish *zaś* (see Weisser 2020 for the German pattern). I provide several arguments to the effect that an analysis as a modal/discourse particle is untenable and both elements should be analyzed as proper coordinators despite their surface position inside the second conjunct. It is shown that *aber* and *zaś* do not have the same distributional properties as modal/discourse particles. Unlike modal particles, German *aber* can appear in the pre-field (6). Nor does it have the same scopal properties as a modal particle as it can appear inside adjuncts but still takes scope over the matrix clause (5). Finally, we can show that both elements li-

cense coordination-specific properties such as ATB-movement or Right-Node Raising, something which modal/discourse particles cannot possibly do. The example in (4), which involves ATB-movement, becomes ungrammatical without *aber*.

- (4) Was [hat Maria gekauft], [leider *(**aber**) in der Bahn liegen lassen?]
 What has Maria bought unfortunately but in the train lay let
 'What did Maria buy but unfortunately forget on the train?'

As for the distribution of German *aber* and Polish *zaś*, we find that *aber* can and Polish *zaś* has to dislocate to a position after the first prosodic phrase. Similarly to the Latin case, this dislocation process is sensitive to prosodic phrasing, ignores syntactic islands and ignores morphosyntactic processes. In (5), *aber* shifts into a syntactic island, namely the causal adjunct clause located in the German prefield and it attaches to the prosodic phrase consisting of a complementizer and the weak pronoun that cliticizes onto it. In example (6), we see that *aber* ignores the syntactic verb-second requirement of German. The verb is, linearly speaking, in third position as it is preceded both by the adverb and the shifted coordinator *aber*. The Polish example in (7) illustrates that the coordinator *zaś* also floats into relative clause islands.

- (5) [Peter will noch bleiben], [weil sie **aber** morgen früh raus muss, will Pia nach
 Peter wants still stay because she but tomorrow early out must, wants Pia to
 Hause.]
 home
 'Peter wants to stay but because she has to get up early tomorrow, Pia wants to go home.'
- (6) [Peter will noch bleiben], [leider **aber** will Pia nach Hause]
 Peter wants still stay unfortunately but wants Pia to home
 'Peter still wants to stay but unfortunately Pia wants to go home.'
- (7) [Julia rozmawia z Kati], [Piotr który **zaś** robi najlepsze pierogi, jest w kuchni].
 Julia talks to Kati, Piotr who but does best pierogi is in kitchen
 'Julia talks to Kati but Peter, who makes the best pierogi, is in the kitchen.'

Shifting coordinators are a rarely studied topic and this project will also make a significant empirical contribution by investigating their properties and crosslinguistic parameters in detail. Furthermore, coordinator shifting provides an ideal testing ground for theories of cliticization in general and of PDD in particular. More generally, the present study will be the first one, where the clitic properties of a single grammatical element (i.e., coordinators) are studied from a crosslinguistic perspective. While many studies have investigated the morphosyntactic or the morphophonological properties of clitics in a given language or even compared different clitic systems within a language family such as Slavic, a comprehensive crosslinguistic comparison of the clitic behavior of a single grammatical element has so far not been undertaken.

1.1 Project-related publications

1.1.1 Articles published by outlets with scientific quality assurance, book publications, and works accepted for publication but not yet published

1. Georgieva, E., M. Salzmann & P. Weisser. 2020. Negative verb clusters in Mari and Udmurt and why they require postsyntactic top-down word formation. *NLLT* (online).
2. Weisser, P. 2020. On the symmetry of case in conjunction. In *Syntax* 23(1). 42–77.
3. Kalin, L. & P. Weisser. 2019. Asymmetric DOM in coordination and its implications: A problem for movement-based approaches. *LI* 50(3). 662-676.
4. Nevins, A. & Weisser, P. 2019. Closest conjunct agreement. *Annual Review of Linguistics* 5(1). 219–241.
5. Weisser, P. 2019. Implicational complement coordination and beyond: Towards a coherent theory of asymmetric coordination in German. *Zeitschrift für Sprachwissenschaft* 38(1).

6. Weisser, P. 2019. Telling allomorphy from agreement. *Glossa: A journal of general linguistics* 4(86). 1–23.
7. Guseva, E. & P. Weisser. 2018. Postsyntactic reordering in the Mari nominal domain – Evidence from suspended affixation. *NLLT* 36(4). 1089-1127.
8. Weisser, P. 2015. Derived coordination: A minimalist perspective on clause chaining, converbs and asymmetric coordination. *Linguistische Arbeiten* 561. Berlin: de Gruyter.

1.1.2 Other publications, both peer-reviewed and non-peer-reviewed

9. Weisser, P. 2020. How Germans move their ‘buts’: A case of prosodic inversion across phrases. In M. Asatryan, Y. Song & A. Whitmal: *Proceedings of NELS 50*. GLSA, Amherst.

1.1.3 Patents

not applicable

2 Objectives and work programme

2.1 Anticipated total duration of the project

48 months

2.2 Objectives

The first and foremost objective of this project is to make progress in our understanding of the algorithms responsible for the mapping from syntactic structures to prosodic strings. I approach this objective by looking at instances of prosodically determined dislocation of clitics and clitic-like elements. The empirical topic that I investigate in order to achieve this goal is the one I called shifting coordinators, i.e., coordinators that do not appear in the position in between the coordinands they connect. As discussed in Section 1.1, shifting coordinators provide an ideal testing ground for patterns of cliticization in general and as the few existing works on this topic as well as my pilot study have shown, they are a particularly fruitful area of investigation for instances of prosodically determined clitic placement. In order to achieve the overall objective above, I have divided the project into several smaller goals, each of which builds on the previous ones:

- G1** The first central goal of the project is to broaden the empirical basis of instances PDD in general in order to study its overall properties more clearly. In order to do this, I will conduct a broad empirical search for cases of coordinator shifting in languages from all over the world. Potential cases of coordinator shifting will be included in a database and classified by means of crosslinguistic as well as language-specific diagnostics. The result of this undertaking will be a typology of coordinator shifting, which will include both cases of morphosyntactically determined coordinator shifting as well as prosodically determined cases.
- G2** The second goal of this project is to focus specifically on the most interesting cases of prosodically determined coordinator shifting and investigate their properties in detail. In order to do this, I will conduct a number of qualitative case studies about these patterns that include detailed investigations which take into account language-specific factors about the morphosyntax as well as the prosody of these languages.
- G3** Based on this empirical collection of qualitative case studies, the third central aim of the project is to develop a coherent model of PDD that is able to derive the range of the observed patterns of prosodically determined coordinator shifting. The development of the model will proceed via the constant evaluation of concrete empirical hypotheses against the gathered data (see Section 2.3 for examples). An integral part of the investigation will be the evaluation of whether the model will need to employ the concepts of cyclicity and optimization.

G4 The final goal of the project is to maximize the empirical coverage of the developed model and to guarantee maximal compatibility with the general models of morphology, syntax and prosody. In order to do that, I will determine how the model at hand relates to the current assumptions in these areas and whether there are fundamental incompatibilities with some of their assumptions. Also, I will apply the model to other instances of PDD apart from coordinator shifting which have been used to argue for a specific implementation.

2.3 Work programme incl. proposed research methods

2.3.1 Research Method

Empirical part:

The first goal of this project is to develop a typology of shifting coordinators. In order to do this, we need a coherent set of crosslinguistically applicable diagnostics that allow us to determine what a coordinator is as opposed to adverbs or discourse/modal particles. The literature notes a number of diagnostics to this end (see e.g., Dik (1968), Zhang (2006), Bodányi (2013), Weisser (2020)). Coordinators often differ from adverbs or discourse particles with respect to word order and scope as well as in their ability to cooccur with other coordinators. Also, overt coordinators are often required to license coordination-specific properties such as ATB-movement or various types of coordination ellipsis. It must be noted however, that many of the diagnostics in the literature have only been applied to relatively few (often mainly European) languages and thus every case study will require an in-depth investigation as to whether the element in question is really a coordinator or of some other type. An important side effect of this is that the project will also help to improve the crosslinguistic applicability of our diagnostics.

For each case of an identified instance of a shifting coordinator, I will develop a set of crosslinguistically as well as language-specific diagnostics to determine the properties of the dislocation. In particular, it will be determined whether the dislocation is sensitive to morphosyntactic properties or whether it constitutes an instance of PDD according to the diagnostics listed in Section 1. The literature provides us with a number of potential constructions and diagnostics to identify PDD and to distinguish it from morphosyntactic clitic dislocation (see e.g., the diagnostics to distinguish 1W-clitics from 1D-clitics in Halpern (1995) and subsequent literature on Slavic). While some of these diagnostics will certainly prove helpful, the coordination configuration studied in this project allows for a much broader range of possible constructions to test. While second position clitics, for example, are typically confined to appearing in the domain of (finite) clauses, coordinators appear in a much broader range of constructions since languages typically allow for coordination of various syntactic categories. Thus, we expect a broader range of potential tests to identify cases of PDD.

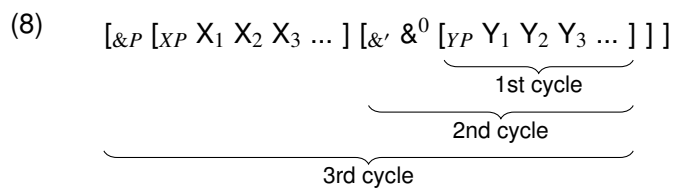
All that said, it becomes clear that a purely quantitative method cannot do justice to the phenomenon of shifting coordinators. Several language-specific factors have to be taken into account to properly identify, classify and analyze cases of shifting coordinators. For this reason, this project pursues a qualitative approach as such an approach can strike a balance between case studies where patterns in a given language can be investigated in enough depth to identify potential confounds or obscuring factors. At the same time, the number of case studies allows us to compare patterns of shifted coordinators across languages and language families. Due to all of these factors, I am convinced that 8–12 detailed language-specific case studies will be a realistic goal for this project.

Theoretical part:

The research method employed for the theoretical part of the project is the systematic evaluation of the research hypotheses. In what follows, I will lay out a simplified model that already allows us to derive a number of hypotheses to understand how the development of the theoretical model will proceed: The discussion above as well as the already existing case studies about German, Polish and Latin, strongly suggest that both cyclicity and an optimization will be required. As noted above, patterns of coordinator shift seem to instantiate the general pattern that prosodically light elements at the left edge of a given domain are less preferred and repaired in various ways including prosodically determined dislocation. But of course, this requirement is not universal and thus lends itself to an optimizing algorithm in which

various, interacting factors must be weighed and compared. Similarly, there is at least *prima facie* a necessity for the concept of cyclicity in both the Latin example in (1-b) and in the German example in (5). We saw that the prosody of the second conjunct is computed independently before the coordinator then shifts into its surface position. In the Latin example in (1-b), *de* first cliticizes to *provincia* before *que* shifts across both. In German (5), the weak pronoun *sie* is first integrated into the prosodic phrase of *weil* before *aber* shifts across both.

A simplified model that makes use of cyclicity and optimization could look as follows: Building on the standard asymmetric coordination structure sketched above, I assume for now that the optimization cycles coincide with the phasal domains identified for coordination structures in Weisser (2015) (see also Reich 2007). Under this assumption, a potential model for patterns of coordinator shift would in a first (relevant) cycle calculate the optimal prosodic structure for the syntactic structure of the second conjunct on its own. Subsequently, it will then enter a second cycle which includes the coordinator and the second conjunct to the exclusion of the first one. The first conjunct will then be integrated in a third cycle. This is illustrated in (8):



The integration of the coordinator during the second cycle into the previously generated prosodic structure of the second conjunct will proceed by weighing (a) lexical considerations of the coordinator in question, (b) general considerations that prefer a direct mapping from syntax to prosody (i.e. considerations that disprefer prosodic reordering) and (c) general prosodic requirements. Using an OT calculus, we can formalize the optimization by means of (at least) three constraints: FAITH(LEX), a constraint that requires lexical features of a given head X to be obeyed (such as: X does not want to be the first element in a given domain (see e.g., Anderson 2005, Yu 2007, Paster 2006, 2009, Erschler 2010, Franks 2017)), FAITH(C-COMMAND), a constraint which requires the syntactic c-command relations to be translated directly into linear precedence relations and ATTACH, a prosodic constraint that requires every element to be attached to the prosodic structure. Depending on the relative ranking of constraints, we predict that shifting of a coordinator with an above-mentioned lexical requirement applies when both FAITH(LEX) and ATTACH outrank FAITH(C-COMMAND) as in (9-c) and (9-f). When only FAITH(LEX) outranks FAITH(C-COMMAND) on the first cycle, then the coordinator will remain unattached and simply prosodify on the next cycle as part of the first conjunct as in (9-d). The point is that FAITH(LEX) may be satisfied either by shifting to a position inside or after the second conjunct (9-c,f) or by waiting for the next cycle and attach it to the first conjunct (9-b,d). Crucially, this predicts that a coordinator can prosodically attach to the first or the second conjunct but never *shift* into the first conjunct:

- (9) a. FAITH(C-COMMAND) > ATTACH > FAITH(LEX) → [X &-Y]
 b. FAITH(C-COMMAND) > FAITH(LEX) > ATTACH → [X-& Y]
 c. FAITH(LEX) > ATTACH > FAITH(C-COMMAND) → [X Y-&]
 d. FAITH(LEX) > FAITH(C-COMMAND) > ATTACH → [X-& Y]
 e. ATTACH > FAITH(C-COMMAND) > FAITH(LEX) → [X &-Y]
 f. ATTACH > FAITH(LEX) > FAITH(C-COMMAND) → [X Y-&]

The optimization steps of the second and third cycle for the crucial rankings are illustrated below. The first two tableaux illustrate the ranking in (9-b) and the ones below illustrate the optimization for (9-c):

(9bii)	& + { Y }	C-COMM	FAITH(LEX)	ATTACH
⊩	{ & Y }			*
	{ &-Y }		*!	
	{ Y-& }	*!		

→

(9biii)	X + { & Y }	C-COMM	FAITH(LEX)	ATTACH
⊩	{ X-& Y }			
	{ X & Y }			*!
	{ & Y X }	*!	*	

(9cii)	& + { Y }	FAITH(LEX)	ATTACH	C-COMM
	{ & Y }		*!	
	{ &-Y }	*!		
☞	{ Y-& }			*

→

(9ciii)	X + { Y-& }	FAITH(LEX)	ATTACH	C-COMM
☞	{ X Y-& }			
	{ Y-& X }			*!

Note that the abbreviation [X Y-&] does not necessarily imply that the coordinator shifts all the way across Y as a whole. The exact landing position of the coordinator will depend on the prosodic size of Y. If it contains more than one prosodic unit, the coordinator may also shift to a position inside of Y.

Based on the review of the literature on coordination patterns in general as well as the existing case studies of PDD in Latin, German and Polish and on the predictions of the simplified algorithm above, we can postulate the following concrete hypotheses which can be evaluated immediately against the empirical data once we collect more shifting patterns. I will introduce them in turn with a short paragraph that lays out the hypothesis in a bit more detail.

H1 Cases of shifting coordinators pattern into two classes based on the diagnostics (i-iii) above. There are instances of morphosyntactic shifting and instances of prosodically determined shifting.

Hypothesis H1 is based on the general architectural consensus shared by the vast majority of frameworks that syntactic processes are sensitive to syntactic properties and phonological/prosodic processes are sensitive to phonological/prosodic properties. As such, it would be extremely unexpected to find that a coordinator shifts to a prosodically defined position but is sensitive to certain syntactic processes or constrained by syntactic islands. In other words, H1 is stating that the diagnostics in (i-iii) above always yield coherent results and classify instances of coordinator shifting into one of the two possible classes.

H2 Prosodically Determined Coordinator Shifting is triggered by lexical requirements:

- H2.1** Since the requirement is a lexical property, we expect it to vary from coordinator to coordinator (and across languages).
- H2.2** These lexical requirements may make reference to prosodic and phonological properties of their context (e.g., being a prefix/suffix or being (non-)initial in their relative domain) but not to the syntactic context.

As noted in Section 1.1, operation-based approaches have emphasized that cases of PDD are often sensitive to lexical properties of a given exponent while configuration-based approaches have emphasized the relevance of the surrounding configuration. In order to do justice to both observations, works like Arregi & Nevins (2012), Franks (2017) have proposed that exponents may come with lexical specifications that require them to appear in a certain prosodic positions. Following this assumption allows us derive cases where either lexical or configurational factors (or a combination of both) have an impact on instances of PDD. H2.2 constrains the possible scope of these lexical requirements based on the above-mentioned architectural considerations. Nonetheless, I expect that the project at hand will allow us to formulate more hypotheses of this type. As such, a broader look at various instances of PDD will allow us to gain further insights about which lexical specifications of this type are possible are which are not.

H3 Coordinators always shift into their syntactic complement:

- H3.1** Monosyndetic coordinators always shift into the second coordinand.
- H3.2** Polysyndetic coordinators always shift into the coordinand they syntactically attach to.

The algorithm for mapping coordination configurations from syntactic to prosodic structures that was set up above predicts that instances of prosodically determined coordinator shifting arise precisely when the constraints requiring prosodic integration of the coordinator in the first cycle (ATTACH) and the constraint requiring that the lexical specification of elements be obeyed (FAITH(LEX)) are ranked above the constraint that prohibits reordering (FAITH(C-COMMAND)). This predicts that the syntactic

asymmetry of coordination structure translates into an asymmetry of shifting as well. Prosodically determined shifting of the coordinator is only ever possible for the conjunct it attaches to in the earlier cycle. We can see that for monosyndetic coordinators, a hypothetical lexical specification requiring that the coordinator not be the last element in a given domain could be trivially fulfilled by integrating it in situ in the second cycle. Thus the necessity to shift it into the first conjunct could never arise (H3.1). The same holds essentially for polysyndetic coordinators, which are syntactically base-generated as a sister of the respective conjunct. The algorithm predicts that the coordinator only be shifted into that very conjunct (H3.2).

H4 Prosodically determined clitic dislocation behaves differently compared to simple prosodically determined cliticization (a.k.a. *leaning*).

H4.1 Coordinators can shift only into their syntactic complement.

H4.2 They can, however, lean onto their complement or onto their specifier.

We have seen that the factorial typology predicted by the three constraints predicts that a monosyndetic coordinator can lean to the left or to the right regardless of structural relations but, as noted above in H3, coordinator shifting is more restricted as a coordinator can only shift into its complement. This prediction is so far borne out. We find many instances of a monosyndetic coordinator which leans onto the first conjunct, as can be seen in the Korean example in (10):

- (10) [swuni-uy kulim]-**kwa** [chelswu-uy sacin]-ul po-ass-ta
 Sooni-GEN picture-AND Chelsoo-GEN photo-ACC see-PAST-DECL
 'I saw a picture of Soonu and a photograph of Chelsoo.' (Cho & Sells 1995, 159)

So far, I have not come across a coordinator that *shifts* into the first conjunct.

H5 In cases of prosodically determined coordinator shifting, we find that the phonological size of the coordinator correlates with the size of the prosodic constituent that the coordinator shifts across

H5.1 Coordinators that are smaller than an independent prosodic word (such as Latin *que*) will shift across a prosodic word and be prosodically integrated into that word (i.e. undergo word-phonological processes).

H5.2 Coordinators that are phonological words (such as German *aber*) will shift across a prosodic phrase and be prosodically intergrated into the prosodic phrase but not the prosodic word (i.e. they will not undergo word-phonological processes).

Both types of approaches have noted that the size of the element undergoing PDD seems to correlate with the locality of the dislocation operation itself. Embick & Noyer (2001) note that Local Dislocation inverts words with words and, in their terminology, subwords with subwords. In configurational approaches, the prosodic constituent that undergoes PDD and the constituent that it shifts across are also correlated albeit in a slightly different manner. Given these largely parallel observations, it seems reasonable to adopt H5 as a null hypothesis for further investigations. Note however, that, unlike the hypotheses H2, H3 and H4, H5 does not follow out of the adopted algorithm at this point. Nonetheless, the literature has provided various ways of integrating this property if it proves empirically adequate including potential exceptions (see especially Elfner (2015) for discussion).

Finally, I want to mention two less obvious predictions that the system makes - at least under certain assumptions. The first set of hypotheses concerns configurations in which both a monosyndetic coordinator and a polysyndetic coordinator cooccur (see (3)). As Mitrović & Sauerland (2014) observe, these two types of coordinators are usually not in complementary distribution, which they take as an argument that they instantiate different syntactic heads. Assuming that this is correct, it certainly proves useful to look at cases where one of them has a lexical requirement that might trigger shifting. The concrete interaction patterns depend on the exact size of the actual cycles illustrated in (8). The question that is particularly of interest is whether a polysyndetic coordinator is prosodified in the first cycle together with the second conjunct or whether it is prosodified in the second cycle together with the monosyndetic coordinator. Assuming the latter for now, we make the following predictions:

H6 If monosyndetic and polysyndetic coordinators cooccur, they exhibit the following interactions:

- H6.1** The presence of a monosyndetic coordinator may bleed shifting of a polysyndetic coordinator.
- H6.2** The presence of a polysyndetic coordinator may not bleed shifting of a monosyndetic coordinator

A polysyndetic coordinator is not the first element in its prosodic cycle if it is preceded by a monosyndetic one, which is why shifting of a polysyndetic coordinator is potentially bled. Vice versa, however, a monosyndetic coordinator is still initial in its domain even if a polysyndetic coordinator is present. Thus, the monosyndetic coordinator is still likely to shift under the right conditions.

The second additional prediction that I want to highlight concerns what we might call less local patterns. As Bennett et al. (2016) have observed, cases of PDD across phonological phrases sometimes exhibit patterns where it is not always one immediately adjacent phonological phrase that is skipped but more than one. The pilot study in Weisser (2020) found a similar picture for the German shifted coordinator *aber* and the Polish shifted coordinator *zaś*. In the example in (11), the coordinator *aber* follows the second phonological phrase (marked as { }_φ) of the second conjunct:

- (11) Peter will noch bleiben, {leider}_φ {will Pia}_φ **aber** nach hause
Peter wants still stay unfortunately wants Pia but to home
'Peter still wants to stay but unfortunately Pia wants to go home.'

Bennett et al. (2016) derive this finding by assuming that phonological phrases can be recursive. Applied to the case at hand, this would mean that the first two phonological phrases can potentially combine to form another (complex) phonological phrase. This assumption allows them to derive the apparent non-locality of PDD across phonological phrases as a one-step dislocation. The only difference is that PDD can apply to variable levels of phonological phrases. Crucially, Bennett et al. (2016) assume that the possibility of recursivity only holds for phonological phrases, not for any other constituent (which, it should be noted, is not uncontroversial assumption). This makes some immediate predictions:

H7 PDD across phonological words and PDD across phonological phrases behave differently in terms of locality:

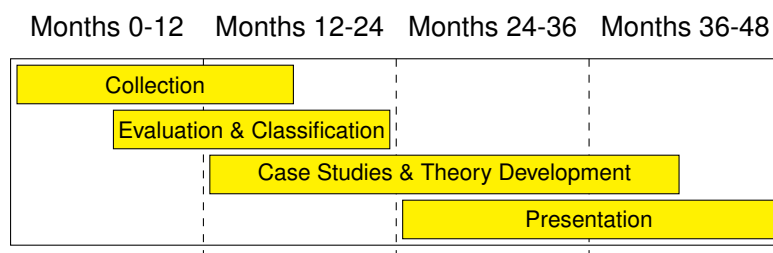
- H7.1** PDD across phonological words always targets the immediately adjacent phonological word.
- H7.2** PDD across phonological phrases can target phonological phrases that are not immediately adjacent.

An alternative way of approaching less local patterns would be to view these as multiple sequential applications of single dislocation steps, an approach which lends itself to a Harmonic Serialist implementation. In such a system, dislocation may reapply if it leads to an improved constraint profile (see the discussion of morphological movement in the Mor[↻]Mor project). However, this assumption can also lead to additional problems since, in examples like (11), it is not entirely clear why the second step of dislocation should have an additional benefit. And even if such an additional benefit of a second step of dislocation could be identified, we would always expect it to be obligatory, contrary to the empirical observations. In fact, it seems that Harmonic Serialism faces grave problems with the optionality of iterative dislocation patterns, an issue that will be discussed in close collaboration with the (Mor[↻]Mor) project. The discussion about iterative dislocation patterns is reminiscent of discussions about hypothetical patterns of hyperinfixation where phonologically triggered theories of infixation can potentially predict less local patterns of infixation if they lead to an improved constraint profile (see discussion in Yu 2003, 2007, Horwood 2004). The question of whether PDD can apply cyclically on the phrase-level and/or on the word-level highlights a close connection of this project with the (Mor[↻]Phon) project, where the same issues are discussed for tonal processes.

2.3.2 Data

The data for these case studies will be obtained with a combination of both a review of the descriptive, empirical literature as well as speaker elicitations. During the first phase (see timeline below), where instances of coordinator shift will be collected and identified, published sources will suffice for the most part as the study of individual patterns remains fairly superficial at this point. However, during later phases, as the actual case studies to be conducted are selected, the speaker elicitations will be necessary. Since many of the diagnostics used to (a) unambiguously identify shifted coordinators and to (b) conclusively classify the pattern of dislocation can be quite subtle, native speaker judgments will certainly be required for a more in-depth investigation. Building on a network of collaborations with language experts, I will compose a sample of languages which are still maximally diverse but relatively accessible so that it will be possible to elicit native speaker judgments.

2.3.3 Timeline



Phase 1 (18 months) is intended for collection of data from a wide variety of languages which potentially exhibit instances of shifting coordinators. The collection of data will remain relatively superficial at this point and will be largely restricted to applying the crosslinguistic diagnostics of coordinators and coordination structures in order to identify instances of the phenomenon in question with a relatively high certainty. During this period, the student assistant will also be involved in the broad review of the descriptive literature in order to identify potential cases to investigate. The resulting collection of languages will be organized in an accessible data base which will be adapted and updated throughout later phases and made public in the course of this project. The set up and the updating of the database will be done both by the student assistant and by myself. As the project progresses (i.e., during phases 2–4), the updating of the database will be done by the student assistant. In Phase 2 (18 months), I will evaluate the existing data collection and come up with a classification of shifting patterns. In order to do that, a more detailed look at a number of case studies is required and I will develop and apply concrete diagnostics which allow the identification of instances of PDD. Phase 3 will continue to research the established cases of PDD and collect data from a smaller set of (8–12) languages in order to describe and analyze the language-specific patterns of PDD in detail. During this phase, I will also develop a coherent model that is applicable to all of the languages in question and flexible enough to take the language-specific constraints and processes into account. Phase 4 will be devoted mainly to organize and present the relevant findings of the case studies to make them accessible to a wide audience. The project at hand is of interest to theoretically oriented linguists who are concerned with modelling the different types of prosodically (and morphosyntactically) determined cliticization and shifting but also to more descriptively oriented linguists who mainly care about the typology of coordinator shift and the diagnostics used to identify the different types. During the presentation phase, I will write publications that address for both descriptive typological as well as more theoretically oriented audiences.

2.4 Data handling

During the second and third phase of the project, where specific case studies on a smaller set of languages will be conducted, new data will be elicited since the available descriptions typically only contain a few examples of the relevant patterns. The data will be organized by language sections, tagged with general as well as project-specific labels and glossed in accordance to the Leipzig Glossing Rules. For further information concerning the storage of the obtained data, see coordination project.

2.5 Other information: Interaction with other projects in the RU

The project will immensely benefit from the interaction with other subprojects within the research group:

Since one of the main empirical foci of the project at hand are structures involving (matrix and embedded) clause coordinations, it bears a close empirical connection to the project **Optimal matches between clause-embedding predicates and their clausal complements** (Syn[🚲]Sem) since both of these project investigate clause-level structures that are embedded in a bigger syntactic domain. One of the core questions shared by both projects, for example, is the question whether the embedded domain constitutes a cycle on its own (for interpretational purposes in Prof Stiebels' project or for intonational purposes in mine). Thus, it will be very interesting to see whether these cycles are fully or partly identical. One of the core hypotheses of Prof Stiebels project is, for example, that certain morphosyntactic cues in the embedded domain (e.g., infinitival or mood marking, non-canonical word order, etc.) can indicate that a bigger domain is required for the interpretation and it remains to be seen whether (a subset of) these cues also trigger the inclusion into a bigger intonational cycle.

With the project **Layers of morphosyntactic number in Eastern Sudanic** (Syn[🚲]Mor) my project shares the assumption of a postsyntactic component which can manipulate syntactically generated structures or strings. As a result, the fundamental machinery to model any issues concerning exponence (i.e., zero-exponence, allomorphy, etc.) are the same (or at least very similar). As already noted above, this proves particularly helpful when it comes to the actual morphological realization of syntactic heads. The division of coordinate structures into two different syntactic heads proposed by den Dikken (2006) that was adopted by Mitrović & Sauerland (2014) to account for both polysyndetic and monosyndetic coordination structures raises questions about the morphological realization of these heads. Many languages have a choice which of the two heads is exponed but one of these heads must be, which leads to a situation that relates to the concepts of overexponence and underexponence identified in that project. And since the theoretical assumptions in both projects are similar, solutions tailored for these issues should be readily transferrable from one project to another. It will thus be interesting to see whether the differences in empirical domains (with a focus on the morphosyntax in this project as opposed to a focus on morphophonology or prosody in mine) can be accommodated in one model.

The notion of PDD as a repair (in the sense of Halpern (1995), Bennett et al. (2016)) is closely related to the project **Syntactic repairs and cyclic optimization** (Syn[🚲]Syn). As discussed above, the PDD is generally approached by means of the stratification approach as it is typically argued that the dislocation process makes explicit reference to phonological or prosodic features. It might nonetheless prove interesting to see whether PDD could in principle be modelled by alternative ways to implement the notion of repair investigated in this project.

Similarly, the project promises to show synergy effects with the project **Semantic and Phonological Correlates of Affix Order** (Sem[🚲]Phon) as coordinators can, in some languages, show seemingly non-cyclic affix orders and occasionally participate in 'template'-effects. Especially polysyndetic coordinators tend to interact with word-level affixes and in many cases they do not necessarily show up at the outermost edge of their respective conjunct. An example comes from Udmurt, where the above-mentioned coordination marker (ieni/eni) shows up on every conjunct but despite it taking scope over the other affixes, it can precede person marking as well as structural case markers.

- (12) Mon Maša-les' nil-ieni-z-e pij-eni-m-e ad'z'-is'ko.
1SG Masha-ABL daughter-COORD-3SG-ACC son-COORD-1SG-ACC see-PRES.1SG
'I see Masha's daughter and my son.' Udmurt, Weisser (2017)

It will be interesting to see whether such template effects can be accommodated in the system developed in this project and whether any additional hypotheses about the phonology or about the semantics of polysyndetic coordinators derive from the combination of both theories.

Related to point above, the main area of overlap of this project with the project **Morphological Strata of Tone** (Mor[🚲]Phon) is, as already mentioned in Section 2.2, the differences between word-level and phrase-level phonological processes. It seems that coordinator shift applying to elements on the word-level and coordinator shift on the phrase-level show, to a certain extent, a different behavior concerning cyclicity. If the toy model of coordinator shift sketched above is on the right track, then the

non-local patterns could be viewed as a potential case of a postlexical process that can apply cyclically. These processes are, as noted in the application for the (Mor^{Phon}) project, relatively uncommon and therefore require further attention. It will be interesting to see whether there could be a coherent solution for instances of cyclic phrase-level tones as well as for cyclic application of PDD.

Finally, the project **Prospects of Inflectional Morphology in Harmonic Serialism** (Mor^{Mor}) develops a radically presyntactic model of a wide range morphological phenomena. This is in stark contrast to virtually all accounts of PDD (including the one pursued in this project). The reason is that many instances of PDD make reference to features of phrasal phonology, which are, by standard assumption, crucially available only after the syntactic structure is complete. Instances of PDD thus pose one of the most severe challenges to presyntactic theories of morphology and it will be interesting to see how a presyntactic model can deal with these phenomena (if at all).

3 Bibliography

- Adger, D. 2006. Post-syntactic movement and the Old Irish verb. *NLLT* 24. 605–654.
- Agbayani, B. & C. Golston. 2010. Second-position is first-position. *Indogermanische Forschungen* 115. 1–21.
- Anderson, S. R. 2005. *Aspects of the theory of clitics* Oxford studies in theoretical linguistics. Oxford: Oxford University Press.
- Anttila, A., M. Adams & M. Speriosu. 2010. The role of prosody in the English dative alternation. *Language and Cognitive Processes* 25. 946–981.
- Aoun, J., E. Benmamoun & D. Sportiche. 1994. Agreement, word order and conjunction in some varieties of Arabic. *LI* 25(2). 195–220.
- Arregi, K. & A. Nevins. 2012. *Morphotactics: Basque auxiliaries and the structure of spellout*. Dordrecht: Springer.
- Bánreti, Z. 1994. Coordination. In F. Kiefer & K. E. Kiss (eds.), *The syntactic structure of Hungarian*, vol. 27 Syntax and Semantics, 355–414. New York: Academic Press.
- Bennett, R., E. Elfner & J. McCloskey. 2016. Lightest to the right: An apparently anomalous displacement in Irish. *LI* 47(2). 169–234.
- Bhatt, R. & M. Walkow. 2013. Locating agreement in grammar: An argument from agreement in conjunctions. *NLLT* 31(4). 951–1013.
- Bodányi, A. 2013. *Az úgynevezett jobbról csatolt kötőszók*. Szeged: Nyelvtudományi Doktori Iskola dissertation.
- Bošković, v. 2001. *On the nature of the syntax-phonology interface: Cliticization and related phenomena*. Amsterdam: Elsevier.
- Branan, K. 2018. *Relationship preservation*. Cambridge, MA: MIT dissertation.
- Bresnan, J., A. Cueni, T. Nikitina & H. Baayen. 2007. Predicting the dative alternation. In G. Bouma, I. Krämer & J. Zwarts (eds.), *Cognitive foundations of interpretation*, 69–94. Chicago: University of Chicago Press.
- Bulatova, N. & L. Grenoble. 1999. *Evenki*. LINCOM Europa.
- Büring, D. & K. Hartmann. 2015. Semantic coordination without syntactic coordinators. In I. Toivonen, P. Csúri & E. van der Zee (eds.), *Structures in the mind: Essays on language, music, and cognition in honor of Ray Jackendoff*, 41–61. Cambridge, MA: MIT Press.
- Chandralal, D. 2010. *Sinhala*. John Benjamins.
- Cho, Y.-m. Y. & P. Sells. 1995. A lexical account of inflectional suffixes in Korean. *Journal of East Asian Linguistics* 4(2). 119–174.
- Chung, S. 2003. The syntax and prosody of weak pronouns in Chamorro. *LI* 34(4). 547–599.
- Dik, S. 1968. *Coordination. Its implications for the theory of general linguistics*. Amsterdam.
- den Dikken, M. 2006. Either-float and the syntax of co-or-dination. *NLLT* 24. 689–749.
- Dobashi, Y. 2003. *Phonological phrasing and syntactic derivation*. Ithaca: Cornell University dissertation.
- Elfner, E. 2012. *Syntax-prosody interactions in Irish*. Amherst: University of Massachusetts dissertation.
- Elfner, E. 2015. Recursion in prosodic phrasing: Evidence from Connemara Irish. *NLLT* 33. 1169–1208.
- Embick, D. 2007. Linearization and local dislocations, derivational mechanics and interactions. *Linguistic Analysis* 33(303–336).
- Embick, D. & R. Izvorski. 1997. Participle-auxiliary word orders in Slavic. In W. Browne, E. Dornisch, N. Kondrashova & D. Zec (eds.), *Formal approaches to Slavic linguistics: The Cornell meeting*, Michigan Slavic Publications.
- Embick, D. & R. Noyer. 2001. Movement operations after syntax. *LI* 32. 555–595.

- Embick, D. & R. Noyer. 2007. Distributed Morphology and the syntax/morphology interface. In G. Ramchand & C. Reiss (eds.), *The Oxford handbook of linguistic interfaces*, Oxford: Oxford University Press.
- Erschler, D. 2010. Modularity and 2P-clitics: Arguments from Digor Ossetic. In Y. Falk (ed.), *Proceedings of IATL 25*, The Hebrew University of Jerusalem.
- Erschler, D. 2013. On negative indefinites and “negative conjunctions” in iron ossetic. In S. Tokhtasev & P. Luria (eds.), *Festschrift for Aaron Livshits: Commentationes Iranicae. Vladimiro f. Aaron Livschits nonagenario donum natalicium*, Nestor-Istorija. St. Petersburg.
- Erteschik-Shir, N. 2005. Sound patterns of syntax: object shift. *Theoretical Linguistics* 31. 47–93.
- Féry, C. 2011. German sentence accents and embedded prosodic phrases. *Lingua* 121(13). 1906–1922.
- Féry, C. & G. Kentner. 2013. A new approach to prosodic grouping. *The Linguistic Review* 30. 277–311.
- Franks, S. 2000. Clitics at the interface: An introduction. In F. Beukema & M. den Dikken (eds.), *Clitic phenomena in european languages*, 1–46. John Benjamins.
- Franks, S. 2017. *Syntax and spell-out in slavic*. Bloomington: Slavica Publishers.
- Grimshaw, J. 2005. *Words and structure*. Stanford: Center for the Study of Language and Information.
- Guseva, E. & P. Weisser. 2018. Postsyntactic reordering in the Mari nominal domain - evidence from suspended affixation. *NLLT* 36(4).
- Halle, M. & M. Kenstowicz. 1991. The free element condition and cyclic versus noncyclic stress. *Linguistic Inquiry* 22(3). 457–501.
- Halpern, A. 1995. *On the morphology and the placement of clitics*. Stanford: CSLI Publications.
- Harizanov, B. 2014. The role of prosody in the linearization of clitics: Evidence from Bulgarian and Macedonian. In C. Chapman, O. Kit & I. Kucerova (eds.), *Formal approaches to Slavic linguistics 22: The McMaster Meeting 2013*, Michigan Slavic Publications.
- Harris, A. C. 2002. *Endoclititics and the origins of Udi morphosyntax* Oxford linguistics. Oxford: Oxford University Press.
- Haspelmath, M. 1993. *A grammar of Lezgian*. Walter de Gruyter.
- Haspelmath, M. (ed.). 2004. *Coordinating constructions*. John Benjamins.
- Haspelmath, M. 2007. Coordination. In T. Shopen (ed.), *Language typology and syntactic description*, 1–51. Cambridge, Cambridge University Press.
- Hewson, J. & V. Bubenik. 2006. *From case to adposition*. John Benjamins.
- Holmberg, A. 1999. Remarks on Holmberg’s generalization. *Studia Linguistica* 53. 1–39.
- Horwood, G. 2004. *Order without chaos: Relational faithfulness and the position of exponence in Optimality Theory*. New-Brunswick: Rutgers dissertation.
- Huijsmans, M. 2015. *Linearization and prosodic phrasing: The case of Senčoten second-position clitics*. University of Victoria MA thesis. <https://dspace.library.uvic.ca/handle/1828/6638>.
- Inkelas, S. & D. Zec. 1990. *The phonology–syntax connection*. University of Chicago Press.
- Ishihara, S. 2007. Major phrase, focus intonation and multiple spellout. *The Linguistic Review* 24.
- Johannessen, J. B. 1998. *Coordination*. Oxford: Oxford University Press.
- Kahnemuyipour, A. & K. Megerdumian. 2011. Second-position clitics in the vP phase: The case of the Armenian auxiliary. *LI* 42(1). 152–162.
- Kaisse, E. 1981. Separating phonology from syntax: A reanalysis of Pashto cliticization. *Journal of Linguistics* 17. 197–208.
- Kendall, M. 1976. *Selected problems in Yavapai syntax: The Verde Valley dialect*. Garland Publishing.
- Klavans, J. 1985. The independence of syntax and phonology in cliticization. *Language* 61(1). 85–120.
- Klavans, J. 1995. *On clitics and cliticization: The interaction of morphology, phonology, and syntax*. New York Garland.
- Kornfilt, J. 1997. *Turkish*. Taylor & Francis Ltd.
- Kramer, R. 2010. The Amharic definite marker and the syntax-morphology interface. *Syntax* 13. 196–240.
- Kratzer, A. & E. Selkirk. 2007. Phase theory and prosodic spellout: The case of verbs. *The Linguistic Review* 24. 93–135.
- Ladd, R. 1986. Intonational phrasing: the case for recursive prosodic structure. *Phonology* 3. 311–340.
- Langendoen, T. 1987. On the phrasing of coordinate compound structures. In B. Joseph & A. Zwicky (eds.), *A festschrift for Ilse Lehiste*, 186–196. Ohio State University.
- Ledgeway, A. 2012. *From Latin to Romance: Morphosyntactic typology and change*. Oxford University Press.
- Legate, J. A. 2008. Warlpiri and the theory of second position clitics. *NLLT* 26(2).
- López, L. 2009. Ranking the linear correspondence axiom. *LI* 40. 239–276.

- Marantz, A. 1988. Clitics, Morphological Merger, and the mapping to phonological structure. In M. Hammond & M. Noonan (eds.), *Theoretical morphology*, 253–270. San Diego: Brill Academic Press.
- Marušič, F., A. Nevins & A. Saksida. 2007. Last-conjunct agreement in Slovenian. In R. Compton, M. Goledzinowska & U. Savchenko (eds.), *Formal approaches to Slavic linguistics 15: The Toronto Meeting*, 210–227. Ann Arbor: Michigan Slavic Publications.
- Marušič, F., A. Nevins & W. Badecker. 2015. The grammars of conjunction agreement in Slovenian. *Syntax* 18(1). 39–77.
- Miller, P. 1992. *Clitics and constituents in Phrase Structure Grammar*. Utrecht: University of Utrecht dissertation.
- Miller, P., G. Pullum & A. Zwicky. 1997. The principle of phonology-free syntax: four apparent counterexamples in french. *Journal of Linguistics* 33. 67–90.
- Mitrović, M. 2014. *Morphosyntactic atoms of propositional logic*. Cambridge: University of Cambridge dissertation.
- Mitrović, M. & U. Sauerland. 2014. Decomposing coordination. In J. Iyer & L. Kusmer (eds.), *Proceedings of the North-East Linguistic Society 44*, 39–52. Amherst: GLSA.
- Munn, A. B. 1987. Coordinate Structure and X-bar theory. *McGill Working Papers in Linguistics* 4(1). 121–140.
- Munn, A. B. 1993. *Topics in the syntax and semantics of coordinate structures*. College Park: University of Maryland dissertation.
- Murphy, A. & Z. Puškar. 2018. Closest conjunct agreement is an illusion. *NLLT Online*.
- Nevins, A. & P. Weisser. 2019. Closest conjunct agreement. *Annual Review of Linguistics* 5. 219–241.
- Newell, H. 2008. *Aspects of the morphology and phonology of phases*. Montreal: McGill University dissertation.
- Newell, H. & G. Piggott. 2014. Interactions at the syntax-phonology interface: Evidence from Ojibwe. *Lingua* 150. 332–362.
- Olawsky, K. J. 2006. *A grammar of Urarina*. Mouton de Gruyter.
- Pak, M. 2008. *The postsyntactic derivation and its phonological reflexes*. Philadelphia: University of Pennsylvania dissertation.
- Paster, M. 2006. *Phonological conditions on affixation*. Berkeley: University of California, Berkeley dissertation.
- Paster, M. 2009. Explaining phonological conditions an affixation: Evidence from suppletive allomorphy and affix ordering. *Word Structure* 2(1).
- Peterson, D. 2001. Ingush ʔa: The elusive type 5 clitic? *Language* 77. 144–155.
- Reich, I. 2007. From phases to ATB-movement. *Proceedings from the Annual Meeting of the Chicago Linguistic Society* 43(2). 217–232.
- Rolle, N. & Z. O'Hagan. 2019. Different Kinds of Second-Position Clitics in Caquinte. In D. K. E. Reisinger & R. Yu-Hsiang Lo (eds.), *Proceedings of the workshop on the structure and constituency of languages of the americas 23*, UBC Working Papers in Linguistics.
- Ross, J. R. 1967. *Constraints on variables in syntax*. Cambridge, MA: MIT dissertation.
- Sadock, J. 2003. *A grammar of Kalaallisut*. Munich: LINCOM Europe.
- Salzmann, M. 2019. Displaced morphology in German verb clusters. An argument for post-syntactic morphology. *Journal of Comparative Germanic Linguistics* 22. 1–53.
- Schütze, C. 1994. Serbo-Croatian second position clitic placement and the phonology-syntax interface. In A. Carnie, H. Harley & T. Bures (eds.), *MIT Working Papers in Linguistics 21*, Department of Linguistics, MITWPL.
- Seidl, A. 2001. *Minimal indirect reference: A theory of the syntax-phonology interface*. London: Routledge.
- Selkirk, E. 1986. On derived domains in sentence phonology. *Phonology Yearbook* 3. 371–405.
- Selkirk, E. 1995. Sentence prosody: intonation, stress and phrasing. In J. Goldsmith (ed.), *Handbook of phonological theory*, 550–569. Oxford: Blackwell.
- Selkirk, E. 2011. The syntax-phonology interface. In J. Goldsmith, J. Riggle & A. Yu (eds.), *Handbook of phonological theory, 2nd edition*, Oxford: Blackwell.
- Shwayder, K. 2015. *Words and subwords: Phonology in a piece-based syntactic morphology*. Philadelphia: University of Pennsylvania dissertation.
- Stegen, O. 2011. *In quest of a vernacular writing style for the Rangi of Tanzania: Assumptions, processes, challenges*. University of Edinburgh dissertation.
- Taglicht, J. 1998. Constraints on intonational phrasing in English. *Journal of Linguistics* 34. 181–211.
- Truckenbrodt, H. 1995. *Phonological phrases: Their relation to syntax, focus, and prominence*. Cambridge, MA: MIT dissertation.
- Truckenbrodt, H. 1999. On the relation between syntactic phrases and phonological phrases. *L1* 30. 219–56.
- Vincent, N. 1999. The evolution of c-structure: prepositions and PPs from Indo-European to Romance. *Linguistics* 37(6). 1111–1153.

- Wagner, M. 2005. *Prosody and recursion*. Cambridge, MA: MIT dissertation.
- Wagner, M. 2010. Prosody and recursion in coordinate structures and beyond. *NLLT* 28. 183–237.
- Weisser, P. 2015. *Derived coordination - a minimalist perspective on clause chains, converbs and asymmetric coordination*. Boston & Berlin: de Gruyter.
- Weisser, P. 2017. Three types of coordination in Udmurt. In R. A. Kudryavtseva (ed.), *Problems in Mari and comparative philologies*, 1–8. Yoshkar-Ola.
- Weisser, P. 2020. How Germans move their 'but's: A case of prosodic inversion across phrases. In M. Asatryan, Y. Song & A. Whitmal (eds.), *Proceedings of NELS 50*, online. GLSA, Amherst.
- Werle, A. 2009. *Word, phrase, and clitic prosody in Bosnian, Serbian, and Croatian*. Amherst: University of Massachusetts dissertation.
- Wierzba, M. 2017. *Revisiting prosodic reconstruction: an interface-based approach to partial focus and topic fronting in German*. Potsdam: Universität Potsdam dissertation.
- Willer-Gold, J., B. Arsenijević, M. Batinić, N. Čordalija, M. Kresić, N. Leko, F. Marušić, T. Milićev, N. Milićević, I. Mitić, A. Nevinš, A. Peti-Stantić, B. Stanković, T. Šuligoj & J. Tušek. 2016. Conjunct agreement and gender in South Slavic: From theory to experiments to theory. *Journal of Slavic Linguistics* 24(1). 187–224.
- Yu, A. 2003. *The morphology and phonology of infixation*. Berkeley: University of California dissertation.
- Yu, A. 2007. *A natural history of infixation*. Oxford: Oxford University Press.
- Zhang, N. 2006. On the configuration issue of coordination. *Language and Linguistics* 7(1). 175–223.
- Zhang, N. 2010. *Coordination in syntax*. Cambridge: Cambridge University Press.
- Zoerner, E. 1995. *Coordination: The syntax of &P*. Irvine: University of California dissertation.
- Zwicky, A. 1977. *On clitics*. Columbus: Ohio State University dissertation.
- Zwicky, A. 1985. Clitics and particles. *Language* 61(2).
- Zwicky, A. 1986. The unaccented pronoun constraint in English. *Ohio State University Working Papers in Linguistics* 32. 100–113.
- Zwicky, A. & G. Pullum. 1986. The principle of phonology-free syntax: Introductory remarks. *Working Papers in Linguistics* 32.