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Doubling by movement within and from PP in Lustenau Alemannic: On the structure of prepositional phrases and the realization of copies

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We analyze a morpho-syntactic puzzle from an Austrian variety of Alemannic German, which we term Lustenau Alemannic. We focus on certain pronouns, termed *R-pronouns* in Germanic linguistics, and their behavior in PPs. Unlike typical nominals in German, R-pronouns precede prepositions. Across German varieties, many speakers can extract R-pronouns from PP. This process is also present in Lustenau Alemannic, except that use of an R-pronoun in PP or extraction of it from PP requires the inclusion of another morpheme, which normally would mean 'it'. In the context of Distributed Morphology and a Copy Theory of movement, we explain this doubling as phonologically-motivated lower copy pronunciation in a movement chain through a multi-layered PP.

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1 Introduction

We examine the morpho-syntax of certain pronouns in a variety of German, spoken in Lustenau (Vorarlberg, Western Austria). This is part of a dialect group termed ‘Alemannic’, spoken in and around Switzerland, which Lustenau directly borders. We refer to the dialect we examine as Lustenau Alemannic (LA).¹ We focus on a type of pronoun, first termed *R-pronoun* in the examination of Dutch in van Riemsdijk (1978), which also exists in German (Fleischer 2002a; Abels 2012, a.o.). Unlike typical nominals in German, R-pronouns precede prepositions (1a), and in colloquial ‘standard’ German, they can also be extracted from PPs (1b):

(1) *R-pronouns in non-Alemannic (‘standard’) German*

a. *Unextracted*

Ich ess [_{PP} **da**-von]

I eat RPRN-of

‘I eat (some) of this’

b. *Extracted*

Da₁ ess ich [_{PP} t₁ von]

RPRN eat I of

‘This, I eat (some) of’

Extraction from PP occurs in the northern and central parts of the German-speaking area. Further south we find that such extraction, and use of R-pronouns in PP generally, involves a type of “doubling”. See Fleischer (2002a) for discussion about these geographic patterns. LA is a dialect of the southern type, and indeed requires doubling, as (2) shows. Use of an R-pronoun in PP (2a) or extraction of it (2b) requires the inclusion of another morpheme, *de*. Many of our LA examples such as (2) use the preposition *vo*, ‘of’. This is pronounced *vo* ([foə]) when stressed, but *ve* ([fə]) when unstressed, which will be important later.

(2) *R-pronouns in LA*

a. *Unextracted*

I iess [_{PP} do*(**de**)-vo]

I eat RPRN-DBL-of

‘I eat (some) of this’

b. *Extracted*

Do₁ iess i [_{PP} t₁ *(**de**)-vo]

RPRN eat I DBL-of

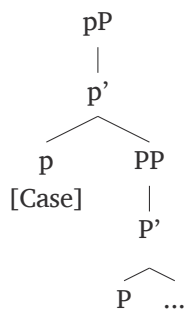
‘This, I eat (some) of’

¹ LA has no official written form, so we approximate its pronunciation in standard German orthography.

Normally this *de* (phonetically [də]) is an R-pronoun meaning ‘it’. However, it does not have any semantic contribution in examples like (2). The goal of this paper is to provide a morpho-syntactic analysis of this redundant element, which we gloss as DBL (for ‘doublet’).

We argue that this “doubling” of the R-pronoun is essentially resumption, created by the realization of a trace of its movement. We argue that these facts fit a theory in which PPs are multi-layered (van Riemsdijk 1990; Rooryck 1996; Svenonius 2003; Cinque & Rizzi 2010, a.o.). Specifically, we follow Svenonius in hypothesizing that PP is dominated by a ‘little p’, which is responsible for case assignment to PP-internal nominals:

- (3) *PP dominated by case-assigning pP*



We propose that case-assignment by p triggers movement of R-pronouns from within PP, leaving behind a resumptive *de*. We will discuss the properties of this construction and offer an explicit morphological analysis of it, using Distributed Morphology (Halle & Marantz 1993) along with the Copy Theory of movement (Chomsky 1995; Nunes 2004). Additionally, we will argue that this doubling is motivated by a phonological factor in LA.

1.1 Previous literature on R-pronoun doubling

Such doubling has been observed in many German varieties, though with much micro-variation (see Fleischer 2002a;b; Brandner 2008; Hein & Barnickel 2018). As Brandner discusses, there are many open questions about this phenomenon. Hein & Barnickel overview previous work on this topic, and judge there to be a lack of theoretical work on it. Here we offer a theoretic analysis of one particular dialect, which we argue supports certain proposals that are relevant to morpho-syntactic theory.

Hein & Barnickel (2018) is the theoretical work closest to ours in empirical scope. The Swabian German data that these authors discuss is quite similar to the LA patterns. Hein & Barnickel’s analysis applies Optimality Theory (Prince & Smolensky 2004, a.o.) to syntax, and thus hypothesizes that syntactic principles are violable constraints, whose competition determines the result of derivations. Optimality-Theoretic syntax is indeed an active research area, especially in German linguistics (Grimshaw 1997; Schallert 2014; Weber 2017; Moser 2021). However, there is also much research in syntax that does not adopt Optimality Theory. In this paper, we will

first provide our non-Optimality-Theoretic analysis of LA, and compare it with Hein & Barnickel (2018) in section 6 below.

2 The data

We first demonstrate the patterns using only the pronoun *do* ('this/here') and the P *vo* ('of'). The LA *do* has a proximal interpretation, unlike its cognate *da* in standard German, which is commonly translated as distal ('that/there').² Below we see an R-pronoun that is not inside of a PP, which does not double:³

- (4) *No doubling when not in PP*
 Min huus isch **do**
 my house is here
 'My house is here'

However, above we showed that an R-pronoun in PP can remain there, or be extracted from it, but the doublet *de* is required either way:

- (5) *R-pronouns in PP in LA*
- a. *Unextracted*
 I iess [_{PP} do*(**de**)-vo]
 I eat RPRN-DBL-of
 'I eat (some) of this'
- b. *Extracted*
Do₁ iess i [_{PP} t₁ *(**de**)-vo]
 RPRN eat I DBL-of
 'This, I eat (some) of'

PP examples with doubling like (5a) above can be further manipulated. One possibility is to extract the pronoun from PP, as we have already seen in (5b). Alternatively, it is also possible to move the R-pronoun and pied-pipe the PP along with it (6):

- (6) *Pied-piping of PP*
 [**Do** *(**de**)-vo]₁ iess i t₁
 RPRN DBL-of eat I
 'Of this, I eat (some)'

² The standard German proximal locative *hier* ('here') is mostly absent in LA. This is true in many southern varieties of German: <https://www.atlas-alltagssprache.de/runde-2/f17a/>.

³ The term "R-pronoun" is often reserved for contexts where these elements are in PPs, but for simplicity, we will refer to all occurrences of them as 'R-pronouns'.

Similar examples have been observed in previous work on German dialects. Fleischer (2002a), for instance, has documented similar patterns and their cross-dialectic geographic distribution, reported in the SyHD dataset.⁴ For documentation of such patterns in Alemannic specifically, see also the SynAlm dataset.⁵ For a recent overview of the broader literature on this topic, see Hein & Barnickel (2018).

All the patterns shown above apply to the other R-pronouns *döüt* ('that/there') and *wo* ('what/where') and other prepositions. The generality of the patterns is demonstrated in (7):

(7) *The generality of the patterns*

- a. I iess [do/döüt₁-**de**-vo/mit/för]
I eat RPRN-DBL-of/with/for
'(Some) of/with/for this/that, I ate'
- b. Do/döüt₁ iess i [t₁ -**de**-vo/mit/för]
RPRN eat I DBL-of/with/for
'This/that, I ate (some) of/with/for'
- c. [Do/döüt-**de**-vo/mit/för]₂ iess i t₂
RPRN-DBL-of/with/for eat I
'(Some) of/with/for this/that, I ate'
- d. Wo₁ iesst si [t₁ -**de**-vo/mit/för] ?
RPRN eats she DBL-of/with/for
'What does she eat (some) of/with/for?'
- e. [Wo-**de**-vo/mit/för]₂ iesst si t₂ ?
RPRN-DBL-of/with/for eats she
'(Some) of/with/for what does she eat?'

Notice that all R-pronouns are doubled by *de*.⁶ This is a fact that will be important for the morphological analysis in section 4.

⁴ <https://www.syhd.info/apps/atlas/index.html#pronominaladverbien>.

⁵ <https://www.ling.uni-stuttgart.de/institut/ilg/forschung/projekte/synalm/html/datasheets/A17-B1.html>.

⁶ Also note that *de* has the form *dr* when preceding a vowel, as in situations where the following preposition is vowel-initial. This is true for both genuine *de* meaning 'it', as well as *de* that is a product of doubling:

- (i) a. Min Telefon lit **dr**-uf/undert
my phone lies RPRN-on/under
'My phone is on/under it'
- b. Min Telefon lit **do-dr**-uf/undert
my phone lies RPRN-DBL-on/under
'My phone is on/under this'

We regard this as phonologically-motivated allomorphy. See Hein & Barnickel (2018) for related discussion.

We have seen that the patterns are quite general, but there is one exception. As mentioned above, normally *de* is an R-pronoun meaning ‘it’. When this R-pronoun is used in a PP, it is not doubled:

- (8) *No doubling of ‘it’*
 I iess **de**-(**de*)-vo
 I eat RPRN-DBL-of
 ‘I eat (some) of it’

We return to this fact in section 7, but for the meantime, this example makes clear that *de* is normally meaningful, outside of doubling constructions.

These facts about R-pronouns contrast with the behavior of more typical DPs, which always follow P (9a) and cannot be extracted from PP (9b), though pied-piping of PP along with movement of DP is permitted (9c):

- (9) a. *Typical DP in PP*
 I iess [_{PP} ve **deim Brot**]
 I eat of that bread
 ‘I eat (some) of that bread’
- b. *Extraction impossible*
 * [**Deim Brot**]₁ iess i [_{PP} ve t₁]
 That bread eat I of
 ‘That bread, I eat (some) of’
- c. *DP movement with pied-piping permitted*
 [_{PP} Ve **deim Brot**]₁ iess i t₁
 Of that bread eat I
 ‘(Some) of that bread, I eat’

The patterns reported here were revealed by a survey conducted in July 2024. Thirty-two LA speakers who grew up in Lustenau participated, whose year of birth was, on average, 1988 (standard deviation: 10.8). The participants were presented with eighteen examples in written format, consisting of six representative examples for each construction type: no extraction (7a), extracted (7b), and with pied-piping (7c). The participants were instructed to rate the examples from 1–5 (where 5 = best). The judgments we received support the general patterns we report, but have significant variation. The standard deviation of the scores is 1.68, and the overall average judgment score is 2.9. Examples in which the R-pronoun stays local to the preposition, like (7a/7c), were rated 2.3 on average. However, examples where the R-pronoun is extracted

were rated 4.2 on average.⁷ Importantly, however, all examples received both very low and very high ratings, from different participants. Furthermore, there is no pattern in the variation that would allow us to conclude that some speakers simply don't accept such examples. Out of the thirty-two participants, twenty-six had an average acceptance score between 4.4 and 2.5, while the remaining six had an average score between 2.5 and 1.9. Therefore, for twenty-six speakers, we can safely state that the constructions studied here were judged as marginal or better. Importantly, all speakers, including those in the stricter subset, rated at least some examples as perfectly acceptable.

Overall, we argue that the doubling data examined here is fundamentally grammatical, since otherwise we would not expect to find any highly rated instances of it. Nevertheless, there is variation in how sensitive individual speakers are to it. This is a puzzle we must leave for future work. The existence of the patterns is nevertheless clear, and supported more generally by work on southern German varieties cited above.

3 Syntactic analysis

The fact that R-pronouns can be extracted from PP, but typical DPs cannot, is true across German varieties. Abels (2003; 2012) argues that the inability of usual DPs to exit PP (in German and various other languages) emerges from the interaction of two factors. First, PP is a *phase* (Chomsky 2000; 2001), so movement from PP must pass through its specifier:

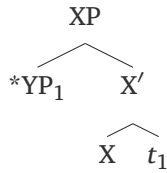
- (10) *Movement through spec-PP*
- $$\text{XP}_1 \dots [_{\text{PP}_{[\text{Phase}]}} \text{t}_1 [_{\text{P}'} \text{P} \text{t}_1]]$$
-

Second, there is a ban on movements that are too short—*anti-locality*—which prevents movement from complement to specifier of the same phrase:

⁷ We suggest that this effect stems from the fact that examples with doubled R-pronouns that remain in PP can be paraphrased by ones using typical pronouns. No doubling occurs in these (ia), so their relative simplicity may make them preferable. Importantly, extraction of the pronoun in such examples is ungrammatical (ib). Thus constructions with normal pronouns cannot paraphrase examples with extracted R-pronouns, which as mentioned above had a higher average score of 4.2.

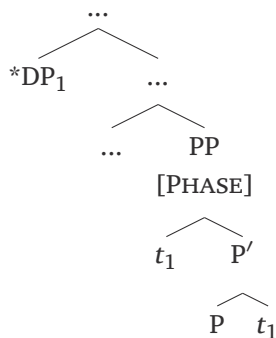
- (i) *Non-R pronouns in PP*
- a. I iess [ve deim]
I eat of that
'I eat (some) of that'
 - b. *Deim₁ iess i ve t₁
that eat I of
'Of that, I eat (some)'

(11) *Anti-locality*



With these hypotheses in mind, note that typical German DPs originate in the complement of PP, since they directly follow P as we saw in (9). Given PP-phasehood and anti-locality, we predict such DPs to be trapped in PP. This is because any movement from PP must pass through spec-PP, since PP is a phase, but this position is inaccessible for such DPs because anti-locality bans movement from complement to specifier of PP:

(12) *PP phasehood + anti-locality = no P-stranding*



This is Abels' account of the ban on preposition stranding in German and other languages. This analysis is equally applicable to LA. Next, we build from this analysis in order to account for the LA R-pronoun facts.

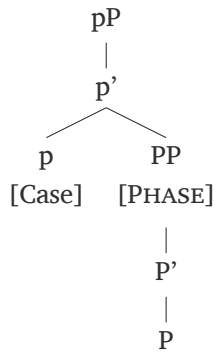
3.1 PP structure and R-pronoun doubling

To explain that R-pronouns can be extracted, Abels argues that they are merged inside the complement of PP, along with an additional phrase between P and the R-pronoun. This hypothesized phrase is crossed over by movement of the R-pronoun to spec-PP, which brings the R-pronoun in front of P without violating anti-locality.⁸ For our analysis of LA, we simplify this proposal by hypothesizing that R-pronouns originate in the specifier of PP. For concreteness we adopt the X-bar theory of phrase structure, which allows us to straightforwardly encode the origination position of the R-pronoun as the specifier of a complement-less PP.

⁸ Abels (2012) posits that similar structure allows extraction from PP in languages like English.

Additionally, we make central use of the hypothesis that PPs involve an additional structural layer. Specifically, we hypothesize that PPs are dominated by a pP, which is responsible for the assignment of case to PP-internal elements:⁹

(13) *PP dominated by pP*



The hypothesis that PPs are multi-layered has precedent in work on Alemannic (Brandner 2008).¹⁰ Under the pP proposal, external merger of the R-pronoun in spec-PP creates the structure in (14a) below. We propose that after this, little p assigns case to the R-pronoun and attracts it to spec-pP, as in (14b). This is analogous to the attraction of subjects to spec-TP upon receiving nominative case from T, presumably due to an EPP feature (Chomsky 1981, a.o.). In German, the case assigned in prepositional environments is accusative or dative, which is not expressed on R-pronouns, but is on other nominals.¹¹ Importantly, we argue that in LA the trace left behind by this movement of the R-pronoun to spec-pP is spelled-out by the morpheme *de*, giving rise to doubling:

⁹ A reviewer observes that vP and pP are analogous in being case assigners, but differ in that vP is a phase, while for us pP is not. We note that there is not a perfect correspondence between case assigners and phases, since TP assigns nominative case but is not phasal. Ultimately, we use the label “pP” as a placeholder for whatever functional structure dominates the PP, which may in fact involve several phrases (Cinque & Rizzi 2010), though the precise identity of these is not essential for our analysis.

¹⁰ In Alemannic, certain locational/directional constructions involve the seeming replication of a preposition. See Brandner (2008) for an overview. An LA example of this is the following:

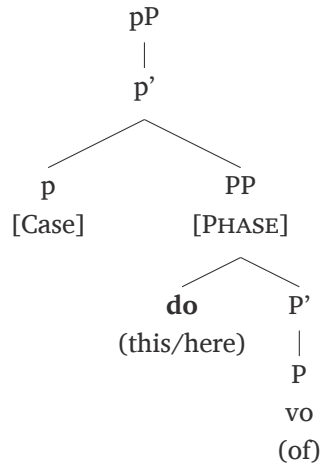
- (i) I fahr **uf** Fealkirch **ufi**
 I drive on Feldkirch on
 ‘I drive to Feldkirch’

Brandner argues that such constructions contain multiple PP layers. Similar preposition doubling can also occur in standard German. See Noonan (2017) for further discussion.

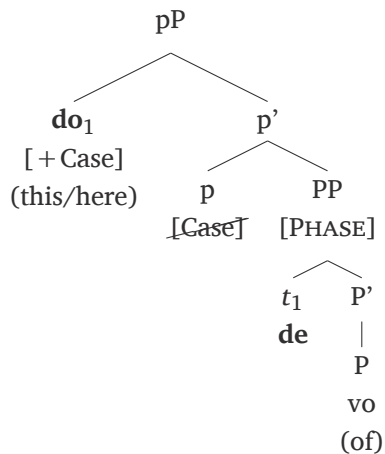
¹¹ Basic pronouns in LA, for instance, show these case distinctions clearly:

- (i) a. för me = for me(ACC)
 b. mit mr = with me(DAT)

- (14) a.
- Step 1: Merge R-pronoun in spec-PP*



- b.
- Step 2: Movement and doubling*



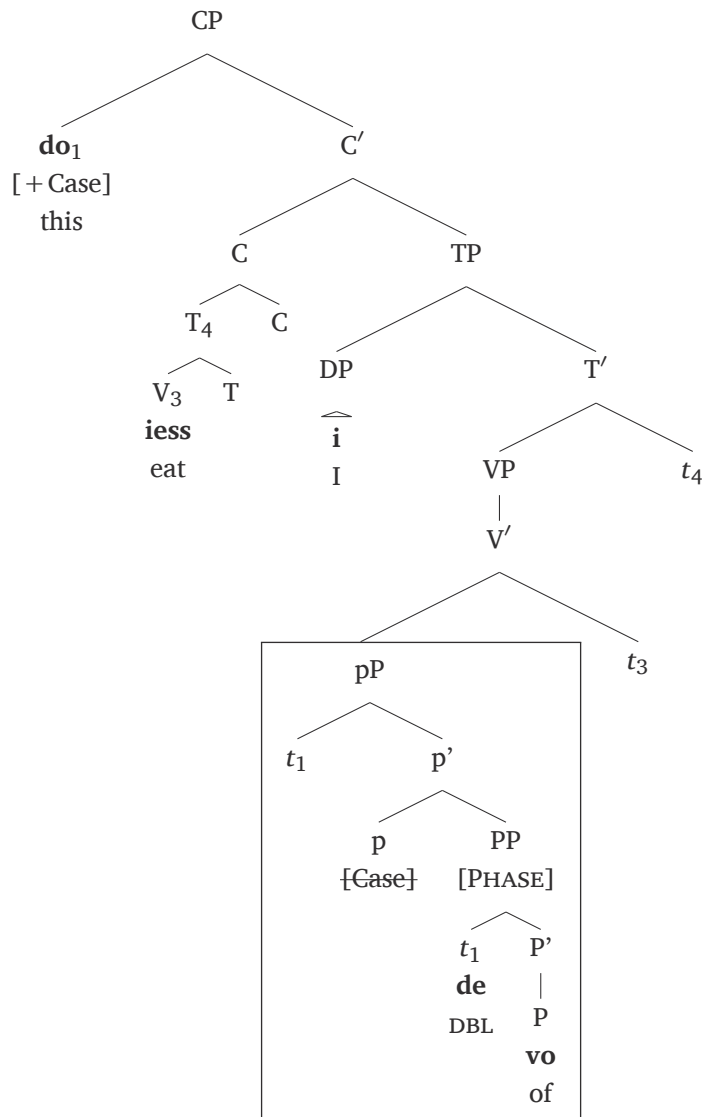
In contrast, typical DPs originate in the complement of PP and so are frozen by the anti-locality versus phase conflict. Therefore p cannot attract them, and they do not move or double.¹²

After movement to spec-pP and doubling, the R-pronoun can move further. As shown in section 2, stranding pP below (15) or pied-piping it along (16) are both possible. In these examples movement targets spec-CP, and involves V to C movement, given the V2 syntax of (Alemannic) German (Holmberg 2015, a.o.). We also assume that heads in the clause below C are head-final, as is typical in German linguistics.

¹² If a DP in the complement of PP cannot be attracted by p, we might also expect p to fail to assign it case. However, if case assignment is mediated by Agree (Chomsky 2000; 2001) and Agree is unlike movement in ignoring the Phase Impenetrability Condition (Bošković 2007), then p can assign case to that DP. In this situation, the Agreeing probe on p is satisfied, but the EPP feature on p that would normally trigger movement of the target of Agree is presumably not. See Preminger (2014, chapter 10) for independent evidence that some instances of movement in syntax can fail without crashing a derivation.

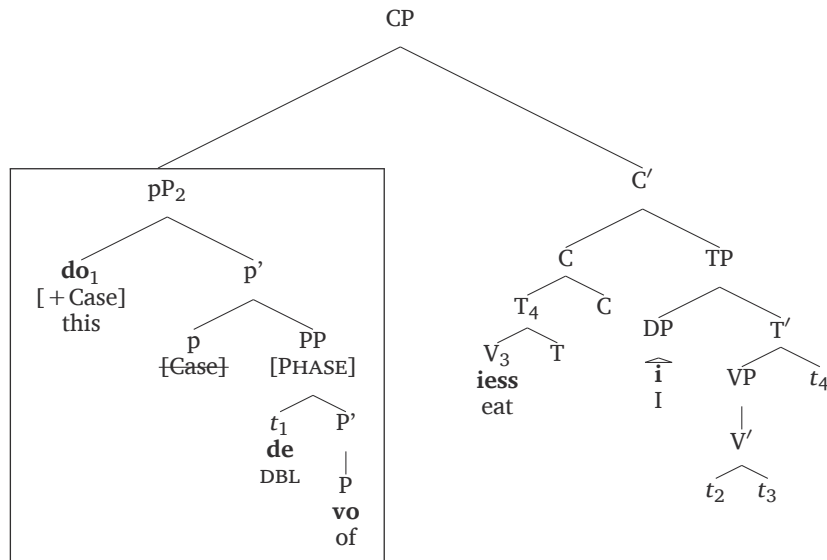
(15) *R-pronoun extraction from pP*

- a. **Do**₁ iess i [_{pP} t₁ [_{PP} t₁=**de** vo]]
 RPRN eat I DBL of
 'Of this, I eat (some)'
- b. *In tree format*

(16) *Pied-piping of pP*

- a. [_{pP} **Do**₁ [_{PP} t₁=**de** vo]]₂ iess i t₂
 RPRN DBL of eat I
 '(Some) of this, I eat'

b. *In tree format*



We thus account for the basic syntactic patterns shown above. Next, we address how the morphology of these constructions is determined.

4 Morphological analysis

We saw in section 2 that all R-pronouns, *do*, *döüt*, and *wo*, are consistently doubled by *de*. It is no coincidence that doubling is achieved by the morpheme for the semantically weakest R-pronoun, 'it'. Cross-linguistically, doubling phenomena often involve reduced/un-marked elements. For instance, van Urk (2018) analyzes various instances of DPs doubled by pronouns, and Landau (2006) shows that verb doubling in Hebrew results in an infinitive. The use of the least specific R-pronoun in LA doubling aligns with this generalization. We provide a concrete analysis of this using Distributed Morphology (Halle & Marantz 1993; Harley & Noyer 1999), which argues that morpho-phonological form is assigned to a syntactic structure after it is built, based on a list of language-specific Vocabulary Insertion (VI) rules. The VI rules in (17) describe R-pronouns in LA. For concreteness, following van Riemsdijk (1978), we posit a feature [R] that distinguishes R-pronouns from usual nominals:

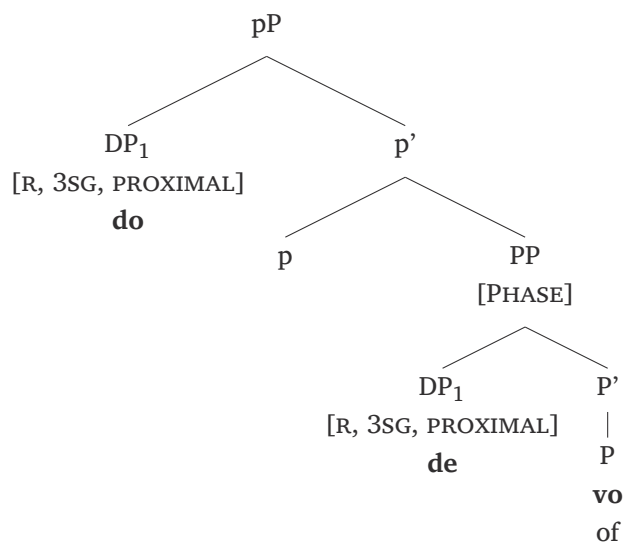
(17) *VI rules for R-pronouns and doubling in LA*

- a. [R, 3SG, PROXIMAL] ↔ *do* ('this/here')
- b. [R, 3SG, DISTAL] ↔ *döüt* ('that/there')
- c. [R, 3SG, WH] ↔ *wo* ('what/where')
- d. [R, 3SG] ↔ *de* ('it')

Here all R-pronoun forms are specified as [R, 3SG], though *do*, *döüt*, and *wo* each have additional features, while *de* importantly does not (17d). The *Subset Principle* of Distributed Morphology requires a syntactic node to be realized by the VI rule that matches the largest subset of its features. Since *de* matches a subset of the features of all R-pronouns, it could in principle be used to express any of them, except that normally the more specific VI rules for the forms *do*, *döüt*, and *wo* must be used when applicable. However, we propose that the usual VI rules are circumvented in the case of doubling, where the additional pronounced copy is realized with least-marked morphology instead.

Specifically, to analyze doubling with *de* we adopt the Copy Theory of movement (Chomsky 1995; Nunes 2004; van Urk 2018, a.o.). This theory argues that movement leaves behind not traces, but full-fledged syntactic copies, which are typically but not always phonologically silent. We propose that when an R-pronoun moves, its lower copy is realized as *de* via the VI rule in (17d), which fits a subset of the features that all R-pronouns bear:

(18) *Doubling via pronunciation of lower copy of R-pronoun*



VI is often argued to apply bottom-up (Bobaljik 2000; Embick 2010), meaning that VI at the lower copy of the R-pronoun should occur before VI at the higher copy. This presents an order of operations problem: Here PF needs to “know” that it is dealing with a lower copy, and thus use a less-specific VI rule for it, even though PF has not yet encountered the higher copy at this point.

We avoid this problem by adopting the partial copy deletion mechanism from van Urk (2018), which deletes some syntactic features in a copy before VI applies. This can be understood as an instance of the feature deletion (“impoverishment”) mechanism in Distributed Morphology (Harley & Noyer 1999). Van Urk argues that languages make different decisions about whether such partial deletion targets lower or higher copies. For LA, such deletion must apply to the lower

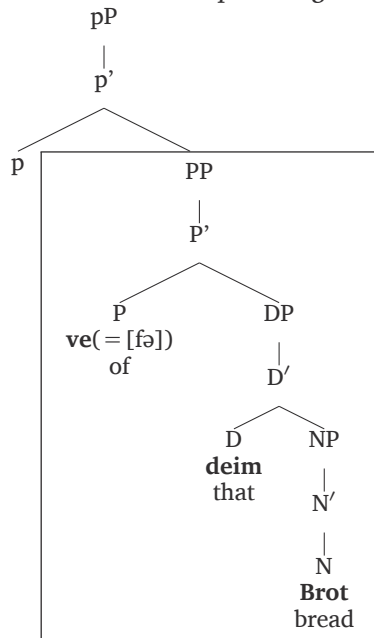
copy of an R-pronoun. Given the VI rules in (17) above, we hypothesize that partial deletion removes all features in the lower copy of an R-pronoun except [R, 3SG]. The persistence of those features allows VI of *de*, via the rule in (17d) above, as a means of realizing the lower copy of any moved R-pronoun.¹³ We will argue that LA ensures that there remains some pronounceable content in the lower copy of the R-pronoun for a reason that is fundamentally phonological, which we discuss next.

5 A phonological motivation for doubling

R-pronoun doubling in LA is found only in spec-PP. Under our analysis, spec-PP is the origination position of the R-pronoun. Therefore what we have proposed here aligns with the fact that resumptive pronouns are typically found in the lowest position of a movement chain. Nevertheless, we must ask why this particular instance of resumption is required in LA.

Landau (2006) and van Urk (2018) both hypothesize that lower copy realization occurs when it satisfies a morpho-phonological need. For LA, we hypothesize that doubling satisfies a requirement that PPs begin with an unstressed syllable. In LA, when P is followed by a typical DP, the P is unstressed. We see this clearly in examples like (9a) and (9c) above, where the preposition ‘of’ takes on its unstressed form *ve* when followed by a DP. Consequently, here the PP begins with an unstressed syllable:

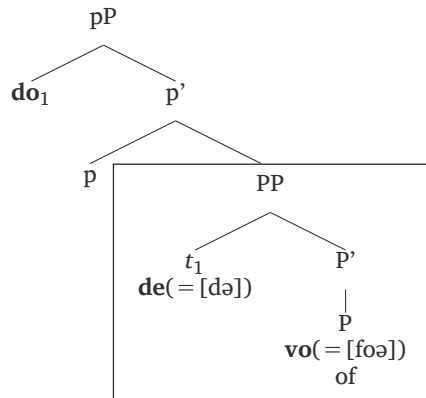
- (19) *P unstressed when preceding a normal DP*



¹³ A reviewer suggests that the suspension of the more specific VI rule in favor of a vaguer one could be achieved in Optimality Theory, given the intuition that different VI rules are in competition. There is indeed precedent for the hypothesis that VI choice is subject to Optimality-Theoretic competition (Wolf 2009).

In contrast, in examples with R-pronouns like (2a), the preposition has its stressed form *vo* (= [foə]). Here it is preceded by the unstressed doublet *de* (= [də]) in spec-PP:

(20) *P stressed with R-pronoun*



Similar stress-sensitivity holds for the preposition *bi*, which becomes *bin* when stressed:

(21) a. *Unstressed P with DP*

I bien **bi** deim Verein

I am in that club

‘I am in that club’

b. *Stressed P with R-pronoun*

I bien do-de-**bin**

I am this-DBL-in

‘I am in this (club)’

The configurations exemplified in (19) and (20) above both have an unstressed element initial in PP. This would not be so if doubling did not occur. Thus we hypothesize that a requirement of prosodic uniformity in PPs motivates doubling in LA. We consider this an instance of phonological uniformity between two surface outputs at PF, which Benua (1997) terms *transderivational faithfulness*. See Kager (1999) for further discussion.

In LA, as in German more generally, it is possible for any word to receive exceptional stress when being focused without movement:

(22) *Exceptional stress on focused verb*

Heascht din Rad vrkouft? Nei, i han s VRSCHÄNKT

Have.2SG your bike sold? No, I have it given.away

‘Did you sell your bike? No, I gave it away!’

Similarly, a preposition that would normally be unstressed can receive stress when focused:

(23) *Stress on focused preposition*

Heascht du mit iena gschaffat? Nei, i han FÜR si gschaffat
 Have.2SG you with them worked? No, I have for them worked
 ‘Did you work with them? No, I worked FOR them.’

This process can create stressed prepositions, though this occurs as an exception to the typical prosody of LA. We argue that the default prosody is what the faithfulness requirement proposed above makes reference to. This does not preclude other factors from sometimes obscuring the basic prosodic patterns.¹⁴

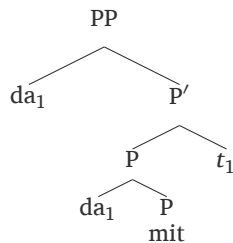
6 Comparison with Hein & Barnickel (2018)

The theoretical work closest to ours in scope is Hein & Barnickel (2018), who examine similar doubling patterns in Swabian German. The distribution of R-pronoun doubling in Swabian is quite close to LA. Hein & Barnickel (2018) propose an Optimality-Theoretic analysis, in which syntactic principles are violable constraints whose relative priority controls derivations. Following Müller (2000), Hein & Barnickel assume that an R-pronoun in a PP replaces what would otherwise be a typical pronoun in the complement of P. This satisfies a constraint about pronoun distribution in German, dubbed the “Wackernagel-Ross dilemma” (see Müller (2000) for details). Since an independent requirement motivates use of an R-pronoun in the complement of P, they hypothesize following Müller that the R-pronoun was not selected by P, and thus must evacuate the complement of PP.

Hein & Barnickel argue that the R-pronoun moves from the complement of P to the specifier of PP, even though this should violate anti-locality, because doubling allows anti-locality to be ignored. Building on earlier proposals from Gallmann (1997) and Fleischer (2002a), Hein & Barnickel argue that this movement to spec-PP is accompanied by what they term incorporation, of a second copy of the R-pronoun into the P head. This is illustrated in (24) below, adapted from Hein & Barnickel’s example (35), which shows the preposition *mit* (‘with’) and the R-pronoun *da*, which is typical in Swabian, and productively doubles:

¹⁴ A reviewer who speaks a closely related Vorarlberg dialect offers the example *nooch am Essa* (‘after lunch’) as an example where an initial preposition is stressed. While we would like to say that this involves focus on the preposition *nooch*, we cannot assert this about the reviewer’s own dialect. We acknowledge that there may be inter-dialect differences that challenge the generalizability of this analysis beyond LA.

(24) *R-pronoun movement to spec-PP with incorporation into P*



Essentially, Hein & Barnickel argue that the R-pronoun moves into P before reaching the specifier of PP. Since the second step of movement does not proceed from complement to specifier, it does not violate anti-locality. To satisfy a constraint regarding lexical integrity in complex head structures, they argue that a full copy of the R-pronoun must remain adjoined to P rather than a mere trace. Nevertheless, this intermediate instance of the R-pronoun circumvents the definition of anti-locality, and makes a representation like that in (24) optimal.

This analysis differs from ours in multiple aspects. Though our analysis also involves movement of the R-pronoun, we hypothesize that within a multi-layered PP, both the mobility of the R-pronoun and the position of doubling are predicted by positing external merge of R-pronouns in spec-PP. This allows us to treat the doublet as essentially a resumptive, which is cross-linguistically common. Furthermore, the expanded PP theory allows movement of the R-pronoun from one specifier to another in a theoretically unremarkable way. In contrast, Hein & Barnickel's analysis requires, essentially, phrasal movement through a head. This is at odds with the typical view that phrasal movement only targets specifier positions. While that view could turn out to be wrong, Hein & Barnickel's proposal leads us to expect that anti-locality should, in general, be avoided by successive-cyclic movement through the head of a phase. We are not aware of independent evidence that human language permits this.

7 Concluding remarks

We have argued that doubling of R-pronouns in PP in LA arises from movement of the R-pronoun from spec-PP to spec-pP, with its lowest copy resumed via reduced morphology in order to satisfy a phonological requirement about PPs. This analysis aligns with previous work on lower copy pronunciation, and on the structure of prepositional phrases.

We mention one remaining puzzle. We have shown that all R-pronouns double with *de*, with one exception mentioned in section 1: the R-pronoun *de* cannot double.

(25) *No doubling of de*

I iess **de**-(*de)-vo
 I eat RPRN-DBL-of
 'I eat (some) of it'

This could be ruled out by *haplology*—the cross-linguistic tendency to avoid sequences of identical syllables. However, there appear to be words in Alemannic that ignore haplology, such as the diminutive verb ‘doodle’ *möölala* (Schallert 2023). Alternatively, if *de* is immobile for an independent reason, then it would remain in spec-PP, rather than moving to spec-pP and leaving behind a copy to be resumed. A piece of evidence supporting this hypothesis is that, unlike other R-pronouns, *de* cannot be fronted:

- (26) *No fronting of de ‘it’*
 ***De**₁ iess i t₁ -(de)-vo
 RPRN eat I DBL-of
 ‘I eat (some) of it’

We also see here that moving *de* away from an attempted doublet yields no improvement, which we would have expected if haplology were the problem. Thus we suggest that *de* is independently immobile, for reasons which we leave to future research.

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Competing interests

The authors have no competing interests to declare.

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