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

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Abstract: 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 the Germanic linguistics literature, and the way they behave 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.

Keywords: Alemannic German, PPs, doubling, Copy Theory, syntax, morphology

1 Introduction

We examine the morpho-syntax of certain pronouns, and their behavior in prepositional phrases, in a variety of German. Specifically, we focus on data from the dialect of Lustenau (Vorarlberg, Western Austria), which is part of a larger dialect group commonly termed "Alemannic". Alemannic varieties are spoken in and around Switzerland, which Lustenau directly borders. We henceforth refer to the dialect we examine as Lustenau Alemannic (LA).[1] Our analysis focuses on a type of pronoun, first termed *R-pronoun* in van Riemsdijk (1978)'s study of Dutch, which also exists in German (Fleischer 2002a; Abels 2012, a.o.). Unlike typical nominal elements in German, R-pronouns precede prepositions (1a), and for many speakers, in colloquial "standard" German they can also be fronted out of PP (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*

Da$_1$ ess ich [$_{PP}$ t_1 von]
RPRN eat I of

'This, I eat (some) of'

In contrast, in LA, use of an R-pronoun in PP (2a) or extraction of it from PP (2b) requires the inclusion of another morpheme, *de*. Many of our LA examples such as (2) use the preposition *vo*, "of". Note that this preposition is pronounced *vo* (=[fɔ]) when stressed, but *ve* ([fə]) when unstressed, which will be important later on.

[1]Since this dialect has no official written form, we use standard German orthography to approximate its pronunciation. The patterns reported here were corroborated by a survey of 32 native speakers of LA, in which speakers were presented with examples in written format and instructed to rate them from 1-5 (where 5 = best). The patterns are generally consistent but there is some variation, in particular see footnote 4 below.

(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*

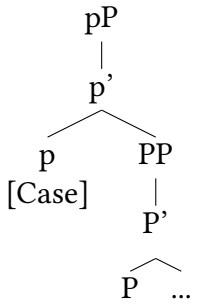
Do$_1$ iess i [$_{PP}$ t_1 ***(de)**-vo]
RPRN eat I DBL-of

'This, I eat (some) of'

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

We argue that this redundant *de* can be understood as "doubling" of the R-pronoun, via the realization of a trace of its movement within PP. Specifically, we argue that these facts fit a theory in which PPs are multi-layered (van Riemsdijk 1990; Rooryck 1996; Koopman 2000; Svenonius 2003, and citations therein). In particular, we follow Svenonius in hypothesizing that the PP is dominated by a "little p", analogous to the well-known little v, which assigns case to PP-internal nominals (rather than the P head itself as usually assumed).

(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*. While we will discuss several syntactic properties of this construction, we will also offer an explicit morphological analysis of it, using Distributed Morphology (Halle and Marantz 1993) along with the Copy Theory of movement (Chomsky 1995; Nunes 2004).

1.1 Previous literature on R-pronoun doubling in German

Patterns resembling this "doubling" have been observed in many German varieties, especially of the Alemannic sort, though with a great degree of syntactic and morphological micro-variation (see Fleischer 2002a,b; Brandner 2008; Hein and Barnickel 2018, and references therein). Some varieties lack this phenomenon, while some have it in a subset of the environments we show for LA. As Brander points out, there are many open questions about this phenomenon. Hein & Barnickel overview previous observations about such patterns, and judge there to be a lack of theoretical work on the topic. We hope to contribute usefully to this research area by providing a theoretic analysis of one particular dialect, which we argue

supports proposals that are relevant to theories of morpho-syntax. While similar patterns likely occur in adjacent German varieties, we believe that focusing on just one of them here sets a helpful foundation for future research.

As far as we know, the theoretical work closest to this paper in empirical scope is Hein and Barnickel (2018). The Swabian German data that these authors discuss, which they also take to involve a sort of doubling, is quite similar to the LA data that we analyze. Their analysis involves applying Optimality Theory (Prince and Smolensky 2004, a.o.) to syntax, and thus hypothesizing that syntactic principles are violable constraints, whose respective rankings determine the result of syntactic derivations. While Optimality Theory has gained significant traction in phonological research, this is not so for syntax. A great deal of research in linguistic theory since works like Chomsky (1995), for instance, has argued that syntactic principles are relatively constrained and static (in contrast to the Optimality-Theoretic view), with morpho-phonological factors being responsible for the greater part of cross-lingusitic variation. This view is evident in much work using the Distributed Morphology theory (Halle and Marantz 1993, a.o.), which we argue facilitates an informative analysis of the morphology of doubling in LA, when combined with our syntactic proposals. While Optimality-Theoretic syntax should not be dismissed simply due to being a minority view, debating the correctness of such a theory is beyond the scope of this short paper. Nevertheless, we believe there is a justified opportunity to explore what a non-Optimality-Theoretic account of such facts could look like. We argue that an analysis in this vein for the LA patterns interestingly connects to independent proposals in syntactic and morphological theory, in unnoticed ways.

1.2 Paper contents

In section 2, we show the facts in more detail. In section 3, we provide the syntactic analysis, which accounts for the extractability and doubling of R-pronouns via movement within a multi-layered PP. In section 4, we show that Distributed Morphology, along with a Copy Theory of movement and considerations of haplology, facilitates an analysis of the fact that doubling results in a redundant "it". Section 5 argues that this doubling is motivated by a need for phonological uniformity in PPs in LA. Section 6 concludes.

2 The data

Here we describe the facts in more detail. For simplicity, we first demonstrate the patterns using only the pronoun *do* ('this/here') and the P *vo* ('of'). We discuss other pronouns and prepositions later, but the same patterns apply to all. The LA *do* has a proximal interpretation, unlike its cognate *da* in standard German, which is commonly translated as distal ('that/there').[2] In LA, a distal interpretation is conveyed by another R-pronoun, *döüt*, which is a cognate of standard German *dort*. There is also an interrogative R-pronoun *wo*. These are illustrated further in section 4.

Below we see an R-pronoun that is not inside of a PP, in which case doubling is not needed:[3]

[2]The standard German proximal locative *hier* ("here") is absent in LA.

[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" regardless of the prescence of PP.

(4) *R-pronoun not doubled 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 doubling element *de* is required either way, as (5) shows again:

(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*

Do$_1$ iess i [$_{PP}$ t_1 ***(de)**-vo]
RPRN eat I DBL-of

'This, I eat (some) of'

As we will discuss in section 4, where we analyze the morphology of this construction, this pattern applies to all R-pronouns, with one exception. As mentioned above, normally *de* is an R-pronoun meaning "it", and when this R-pronoun is used in a PP, it is not and cannot be doubled (6). We will explain this exception in section 4.

(6) *No doubling of "it"*

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

'I eat (some) of it'

Importantly, since *de* normally does have an interpretation, we take examples like those in (5) above to involve doubling: These contain two pronouns, one of which is *de*, though this has no semantic contribution.

PP examples with doubling like (5a) above can be subjected to further syntactic modification. 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 (7):

(7) *Pied-piping of PP*

[**Do** ***(de)**-vo]$_1$ iess i t_1
RPRN DBL-of eat I

'Of this, I eat (some)'

We will see a few other ways such examples can be manipulated in the next section.[4]

These facts about R-pronouns contrast with the behavior of more typical DPs, which always follow P (8a) and cannot be extracted from PP (8b), though pied-piping of PP along with movement of DP is permitted (8c):

(8) a. *Typical DP in PP*

I iess [$_{PP}$ ve **diem Brot**]
I eat of this bread

'I eat (some) of this bread'

b. *Extraction impossible*

* [**Diem Brot**]$_1$ iess i [$_{PP}$ ve t_1]
This bread eat I of

'This bread, I eat (some) of'

c. *DP movement with pied-piping permitted*

[$_{PP}$ ve **diem Brot**]$_1$ iess i t_1
Of this bread eat I

'(Some) of this bread, I eat' (*Pied-piping*)

In the remainder of this paper we provide an analysis of these and more facts about LA.

3 Syntactic analysis

Here we will discuss why typical nominals in German cannot exit PP, following the analysis in Abels (2003, 2012), which sets the stage for our analysis of the extractability of R-pronouns in LA, and the fact that they double in PP.

3.1 Why typical DPs cannot exit PP

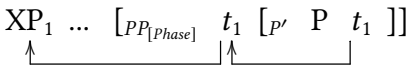
The fact that R-pronouns can be extracted from PP, but typical DPs cannot, is true across German varieties. Abels argues that the inability of usual DPs to exit PP (in German and various other languages) emerges from the interaction of two factors. First, PP is a *phase* (Chomsky 2000, 2001), so attempted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

[4]In our survey, examples in which the R-pronoun stays local to the preposition such as (5a) and (7) were rated, on average, at 2-3 out of 5 points. Importantly, there is significant variability in these judgments: Any given example is rated acceptable by some speakers, but ungramamtical by others, and vice versa. There is no pattern in the judgments that would allow us to conclude that some speakers simply don't accept such examples. We therefore argue that they are fundamentally grammatical, since otherwise we would not expect to find any highly rated instances. However, the variation presents a puzzle for future work. We suggest that one interfering factor is that examples with R-pronouns like (5a) and (7) can be paraphrased by ones using non-R pronouns, where no doubling occurs (ia), making them simpler and thus preferable. Note that extraction of the pronoun in such examples is ungrammatical (ib), so this construction cannot paraphrase examples with R-pronoun extraction like (5b), which are quite consistently accepted unlike examples like (5a) and (7).

(i) a. I iess [ve deim]
I eat of that
'I eat (some) of that'

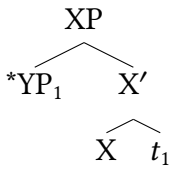
b. *Deim$_1$ iess i ve t$_1$
that eat I of
'Of that, I eat (some)'

(9) *Movement through spec-PP*



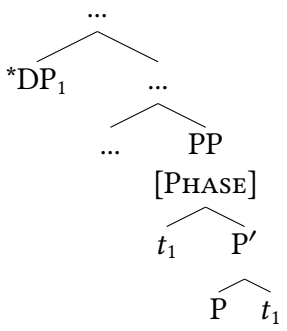
Second, there is a ban on movements that are too short—*anti-locality*—which prevents movement from complement to specifier of the same phrase:

(10) *Anti-locality*



With these hypotheses in mind, note that typical German DPs originate in the complement of PP, since they directly follow P in (8). 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:

(11) *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.

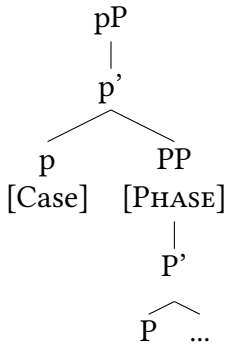
3.2 PP structure and R-pronoun doubling

To explain that R-pronouns can be extracted in German, Abels argues that R-pronouns 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 in a way that circumvents anti-locality.[5] For our doubling analysis of LA, to expedite the implementation we adopt a simpler proposal: that R-pronouns originate in the specifier of PP.[6] Additionally, we make central use of the hypothesis that PPs involve an additional structural layer. Specifically, as previewed above, we will hypothesize that PPs are dominated by a pP, which is responsible for the assignment of case to PP-internal elements:

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

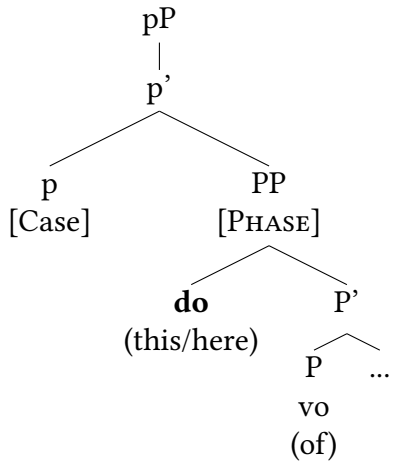
[6] Note that R-pronouns cannot be left-leaning complements of head-final PPs. This hypothesis wrongly predicts that R-pronouns should be frozen in PP by anti-locality. See footnote 16 for further discussion.

(12) *PP dominated by pP*

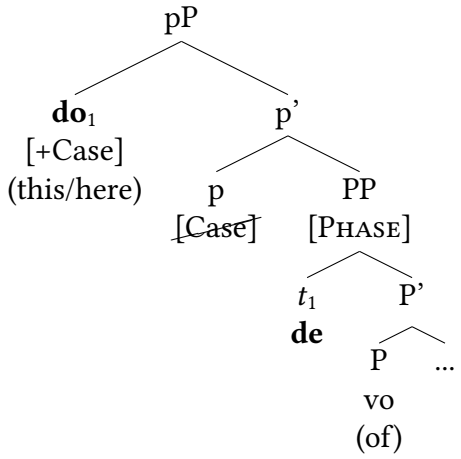


The hypothesis that PPs are multi-layered has precedent in work on Alemannic (Brandner 2008).[7] Under the pP proposal, if an R-pronoun is externally merged in the specifier of PP, this results in the structure in (13a) below. We propose that after this, little p assigns case to the R-pronoun and concomitantly attracts it to spec-pP, analogous to the typical attraction of subjects to spec-TP upon receiving nominative case from T, presumably due to the presence of 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 most other nominals.[8] 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 as in (13b). This is essentially resumption, since outside of doubling constructions, *de* is an R-pronoun meaning "it" as we have seen:

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



b. *Step 2: Movement and doubling*



[7] 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, which is consistent with the proposal that PPs are generally multi-phrasal (though not always morphologically realized as such.)

[8] Basic pronouns in LA, for instance, show these case distinctions clearly:

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

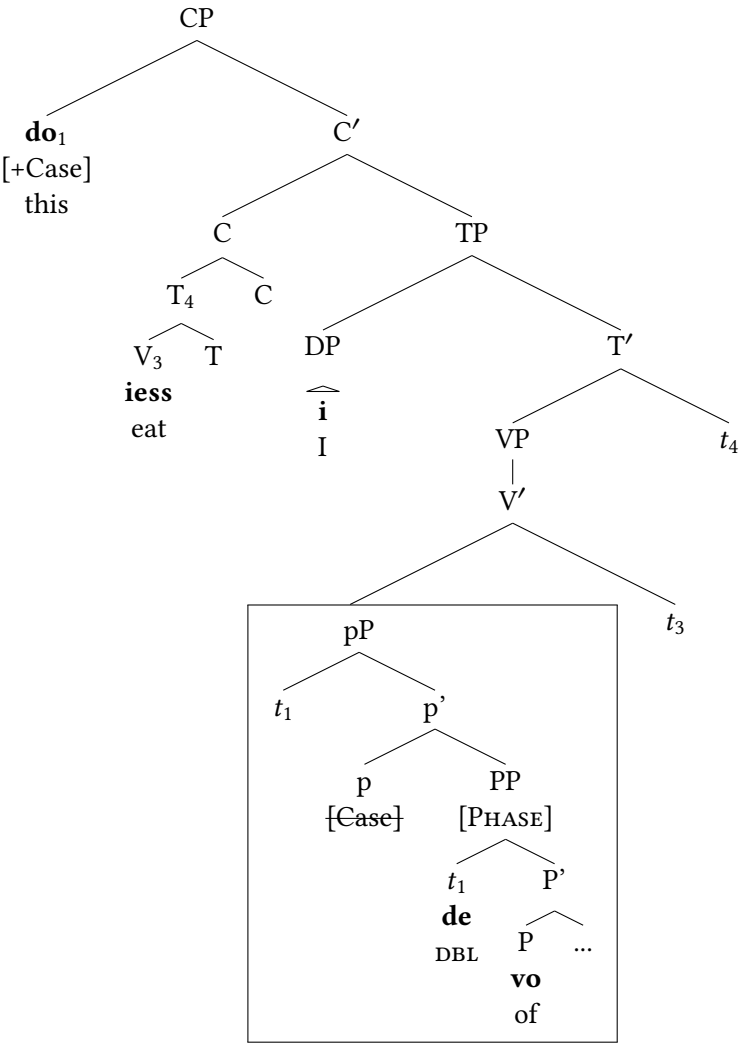
In contrast, typical DPs originate in the complement of PP and so are frozen by the anti-locality versus phase conflict. Therefore p cannot attract them, and they do not move or double.[9]

After movement to spec-pP and doubling as in (13), the R-pronoun can move even further. As previewed in section 2, stranding pP below (14) or pied-piping it along (15) 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.).[10] We also assume that heads in the clause below C are head-final, as is typical in German linguistics.

(14) *R-pronoun extraction from pP*

a. **Do**$_1$ iess i [$_{pP}$ t_1 [$_{PP}$ t_1=**de** vo]]
RPRN eat I DBL of
'Of this, I eat (some)'

b. *In tree format*



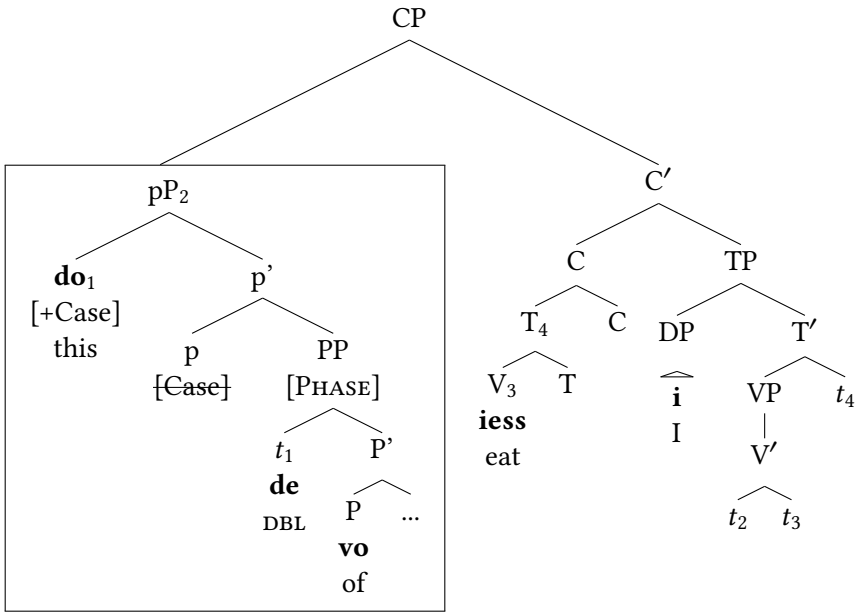
[9]If a DP in the complement of PP cannot be moved by p due to PP phasehood, we might also expect p to fail to assign that DP case. However, if case assignment is mediated by Agree (Chomsky 2000, 2001) and Agree is unlike movement in ignoring the Phase Impenetrability Condition (Bošković 2007), then p can in fact 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 concomitant movement of the target of Agree is presumably unsatisfied. See Preminger (2014, chapter 10) for independent evidence that some instances of movement in syntax can fail without crashing a derivation.

[10]In our diagrams, we assume that V to C movement passes through T, though the presence of TP is not vital.

(15) *Pied-piping of pP*

a. [$_{pP}$ **Do**$_1$ [$_{PP}$ t_1=**de** vo]]$_2$ iess i t_2
RPRN DBL of eat I
'(Some) of this, I eat'

b. *In tree format*



3.3 Predictions for coordinations

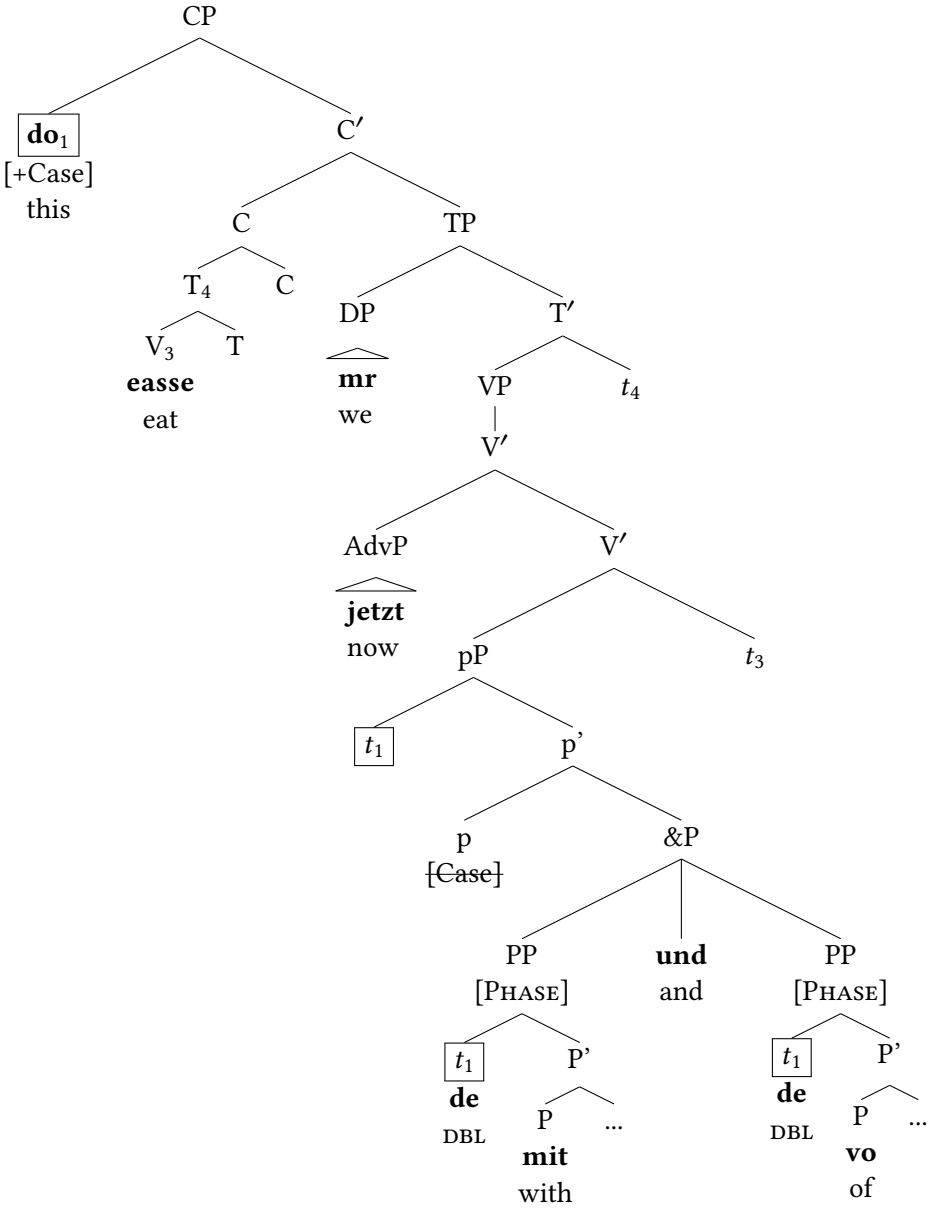
This analysis also makes correct predictions about coordinated PPs. If we coordinate two PPs below pP, the R-pronoun in each will move and be united in spec-pP via Across-The-Board movement (Ross 1967, a.o.). Both traces of such movement in the separate specifiers of PP will be realized as doubling. After this, it is possible to either extract the R-pronoun from pP (16)[11], or pied-pipe the entire pP structure containing the R-pronoun to a higher position (17). Here we diagram coordinations as triple-branching structures for convenience:

(16) *R-pronoun movement in coordination followed by extraction*

a. Luag, an riesiga Löffl us Schoggi! **Do** easse-mr jetz [**de-mit** und **de-vo**].
Look, a giant spoon from chocolate RPRN eat-we now DBL-with and DBL-of
'Look, a giant spoon made out of chocolate! We will eat with and of this'

[11] We could also analyze (16) as involving coordination of two pPs, in which case Across-The-Board movement would only unite the two R-pronouns after they both exit their respective pPs.

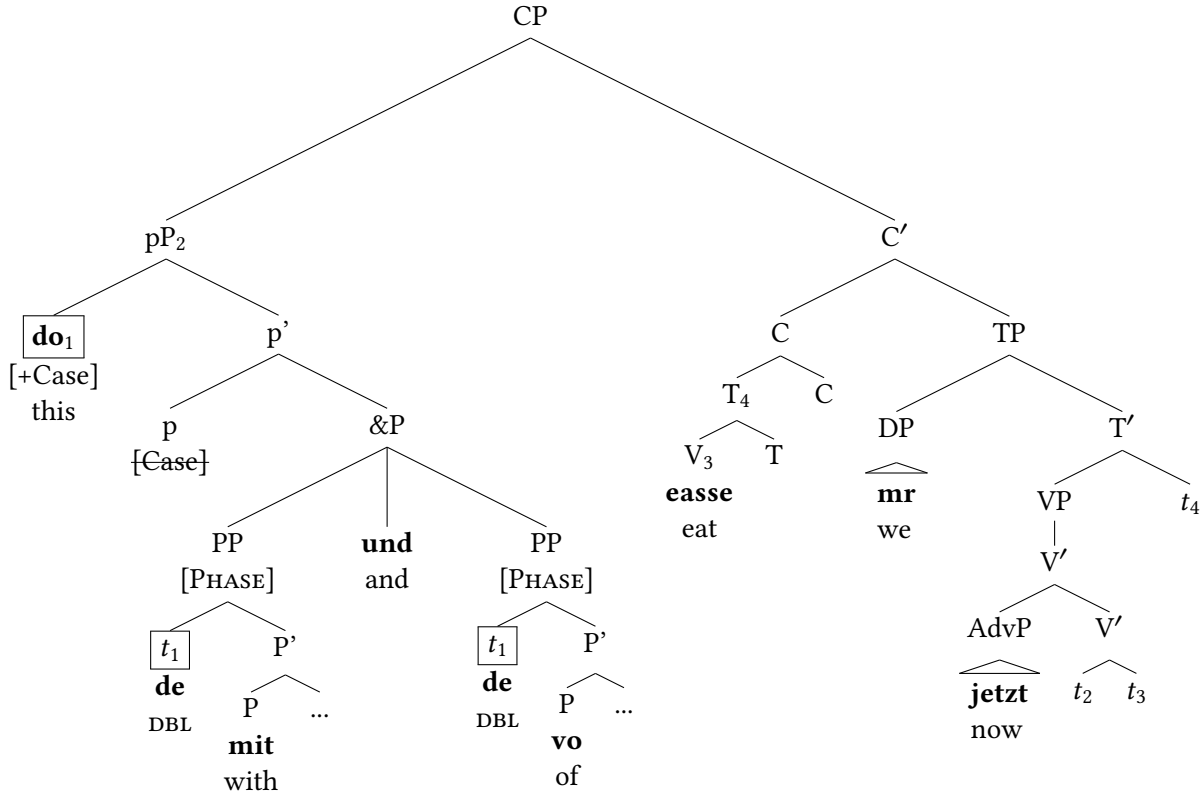
b. *In tree format*



(17) *R-pronoun movement in coordination followed by pied-piping of pP*

a. Luag, an riesiga Löffl us Schoggi! [**Do de-mit** und **de-vo**] easse-mr jetz.
Look, a giant spoon from chocolate RPRN DBL-with and DBL-of eat-we now
'Look, a giant spoon made out of chocolate! With and of this, we will eat.'

b. *In tree format*



These interactions are directly predicted by our proposals, and make clear that this construction is syntactically productive. This concludes our syntactic analysis. In the next section, we go on to address the morphology of this phenomenon.

4 Morphological analysis

4.1 The role of haplology

Notice that in diagram (14b) above, which represents R-pronoun extraction from pP, there is both a trace in spec-PP and in spec-pP. The trace in spec-PP is the one we posit is realized as *de*. However, it is conceivable that the higher trace in spec-pP might also be pronounced as *de* simultaneously. This would create an example like (18) below, which is unacceptable:

(18) *No double doubling*

* **Do** iess i **de-de**-vo
RPRN eat I DBL-DBL-of

'This, I eat (some) of'

We argue that such examples are ruled out by *haplology*—the cross-linguistic tendency to avoid sequences of identical morphemes/syllables.[12] This hypothesis leads us to a correct prediction about a situation where R-pronoun doubling in PP fails. Specifically, as mentioned in section 2, while doubling occurs with almost all R-pronouns, the R-pronoun *de* ('it') cannot be doubled even when in a PP:

[12]Though see the discussion in section 5 below, where we show that such doubling in intermediate trace positions seems to be independently ruled out.

(19) *No doubling of 'it'*

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

'I eat (some) of it'

Since this R-pronoun is itself *de*, adding a second *de* would create an undesirable sequence of identical syllables. Thus haplology bans this and any other examples of double doubling.[13]

4.2 The form of doubling

So far, our examples have mainly used the proximal R-pronoun *do* and the preposition *vo* ('of'). All the patterns shown above can be replicated with the other R-pronouns *döüt* ('that/there') and *wo* ('what/where'), as well as with other prepositions. We see this below in (20), which shows preposition stranding, and (21), which shows preposition pied-piping:

(20) *Various pronouns and prepositions: Pronoun extraction*

a. Do/döüt$_1$ iess i [t_1=**de** vo/mit/för]
RPRN eat I DBL of/with/for
'This/that, I ate (some) of/with/for '

b. Wo$_1$ iesst si [t_1=**de** vo/mit/för] ?
RPRN eats she DBL of/with/for
'What does she eat (some) of/with/for?'

(21) *Various pronouns and prepositions: Pied-piping movement*

a. [Do/döüt$_1$ t_1=**de** vo/mit/för]$_2$ iess i t_2
RPRN DBL of/with/for eat I
'(Some) of/with/for this/that, I ate'

b. [Wo$_1$ t_1=**de** vo/mit/för]$_2$ iesst si t_2 ?
RPRN DBL of/with/for eats she
'(Some) of/with/for what does she eat?'

Importantly, all R-pronouns are doubled by *de*. We argue that 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 full DPs doubled by pronouns, and Landau (2006)

[13] 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 it-on/under
'My phone is on/under it'

b. Min Telefon lit **do-dr**-uf/undert
my phone lies this-DBL-on/under
'My phone is on/under this'

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

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 analyze this fact using Distributed Morphology (Halle and Marantz (1993) and many others), which argues that morpho-phonological form is assigned to a given syntactic structure after it is built, based on a list of language-specific Vocabulary Insertion (VI) rules. The VI rules in (22) describe R-pronouns and their doubling in LA. For concreteness, following van Riemsdijk (1978) we posit a feature [R] that distinguishes R-pronouns from usual nominals:

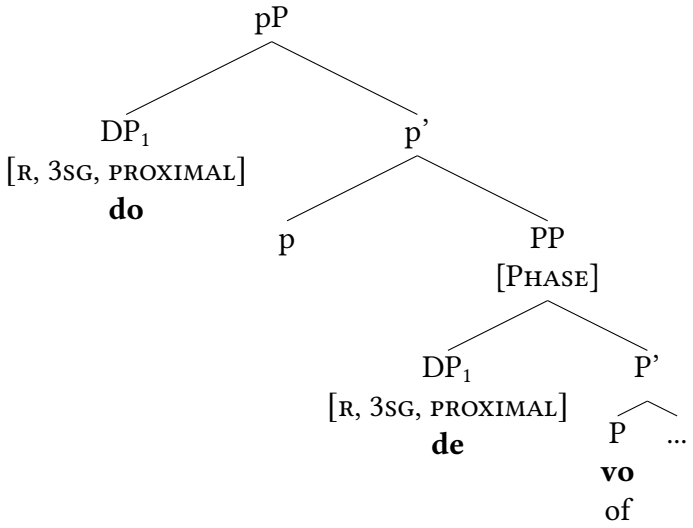
(22) *VI rules for R-pronouns and doubling in LA*

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 (22d). Given these VI rules, note that 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* in the trace of the R-pronoun, 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 usually 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 (22d), since this rule fits a subset of the features that all R-pronouns bear, as (23) demonstrates.

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



Here haplology is relevant again. If the grammar attempts to pronounce the lower copy with the same VI rule as the higher copy, this would create a situation with two adjacent instances of the same morpheme. Pressure to avoid this motivates selecting a distinct VI rule for the

lower copy. An applicable rule is available—the one normally reserved for the least-marked R-pronoun *de*.

These considerations explain why doubling by "it" is possible. However, nothing said so far addresses why this doubling must occur. We discuss this next.

5 A phonological motivation for doubling

If movement must pass through the edge of phases, and if CP is a phase as is widely argued, we expect examples that move an R-pronoun from an embedded CP to allow pronunciation of the R-pronoun's intermediate copy in spec-CP. However, this is not possible (24):

(24) *Cross-clausal R-pronoun extraction cannot feed doubling in spec-CP*

Do$_1$ heasch du gseit [$_{CP}$ t_1(***de**) dass i [t_1 de-vo iess]]
RPRN have you said DBL that I DBL-of eat

'You said that I eat (some) of this'

This could be due to a Doubly Filled Comp Filter violation (Chomsky and Lasnik 1977), since (24) has an overt complementizer. However, this cannot be right, since LA does not have such a constraint (25) (see also Brandner (2008) and references therein):

(25) *No Doubly Filled Comp Filter in LA*

Du heasch gfrogat [**wo**$_1$ **dass** i iess t_1]
You have asked where that I eat

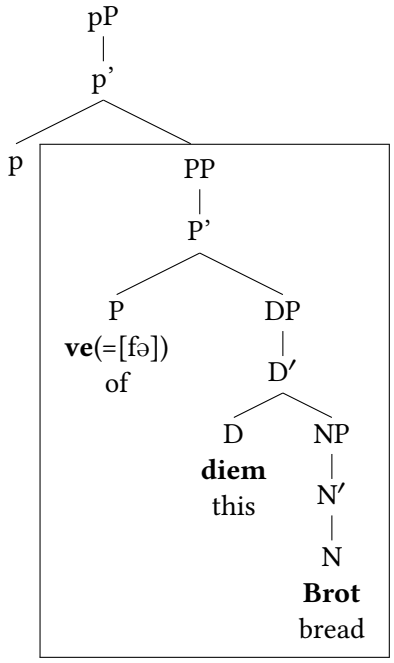
'You asked where I eat'

Overall, R-pronoun doubling in LA is found only in spec-PP. This observation is supported by the lack of doubling in spec-CP as well as in spec-pP, as discussed in section 4.1 above.

Landau (2006) argues that lower copy realization occurs in positions where it satisfies a morpho-phonological requirement. This idea is further used by van Urk (2018), in terms of the hypothesis that there are "phonological EPP" effects, requiring a given position to contain phonetic content (Boeckx 2003; Landau 2007; Richards 2001, 2016). In this vein, we suggest that there is a phonological factor motivating lower copy realization in spec-PP in LA. Specifically, we propose that this satisfies a phonological requirement that PPs in LA begin with an unstressed syllable.

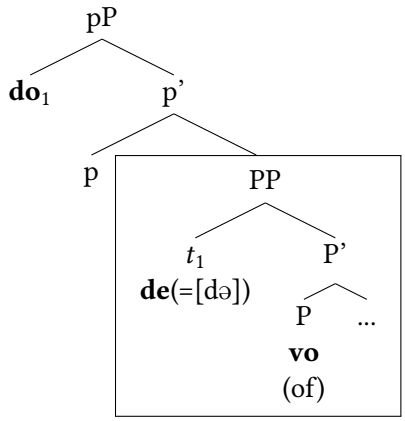
In LA, when P is followed by a typical DP, the P is by default phonologically unstressed. We see this clearly in examples like (8a) and (8c) above, where the preposition "of" takes on its unstressed form *ve* when followed by a DP. Consequently, here the PP begins with an unstressed syllable:

(26) *P unstressed when preceding a normal DP*



In contrast, in examples with R-pronouns like (2a), the preposition has its stressed form *vo* (=[fɔ]). Here it is preceded by the unstressed doubler *de* (=[də]), which sits in spec-PP:[14]

(27) *P stressed with R-pronoun*



Importantly, here the PP begins with an unstressed syllable, but this would not be so without doubling. Given that doubling does occur, typical DP examples like (26) and R-pronoun examples like (27) both ultimately begin with an unstressed syllable. We hypothesize that this prosodic uniformity is required in LA, which hence motivates doubling in the latter case. This aligns with the intuition in Brandner (2008) and Hein and Barnickel (2018) that doubling is

[14]Similar stress-sensitivity of form holds for the preposition *bi/bin*:

(i) a. *Unstressed P with DP*

I bien **bi** diem Verein
I am in this club

'I am in this club'

b. *Stressed P with R-pronoun*

I bien do-de-**bin**
I am this-DBL-in

'I am in this (club)'

some form of repair strategy. This effect can be considered an instance of phonological uniformity between one surface form and another—what Benua (1997) terms *transderivational faithfulness*. See Kager (1999) and references therein for further discussion.[15]

6 Conclusion

We have argued that doubling of R-pronouns in PP in LA arises from movement of the R-pronoun from PP to spec-pP, with its lowest copy pronounced using the least-specific applicable morpheme. This occurs to satisfy a phonological requirement about PPs in LA, and is constrained by haplology. This analysis aligns with previous work on doubling as lower copy pronunciation, and on the structure of prepositional phrases.[16]

Competing interests

There are no competing interests to declare.

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[15] We have assumed that R-pronouns are born in spec-PP. However, in section 3 we mentioned Abels' proposal that R-pronouns are merged below PP, with another prhase intervening that allows the R-pronoin to move to spec-PP and thus onward. What we have said in the present section would also allow us to adopt Abel's view: Whether or not R-pronouns originate in spec-PP or below PP, we would only ever see doubling in spec-PP, since this is where the phonological uniformity requirement applies.

[16] There is another R-pronoun doubling construction in LA that we have not discussed. Specifically, R-pronouns that are not in PPs can be doubled when focused:

(i) Min hus isch **[do/döüt]-de**
my house is here/there-DBL
'My house is HERE/THERE'

Doubling of R-pronouns in PP environments is completely obligatory with or without focus, unlike these PP-less examples. Moreover, focus doubling of *wo* is impossible (ii), but obligatory in PP environments (20-21).

(ii) **Wo$_1$-(*de)** isch min hus t_1?
where-DBL is my house
'Where is my house?'

We therefore assume data like (i) and (ii) to be unrelated to what have we discussed.

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