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# Doubling by movement within and from PP in **Alemannic German**

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#### 1. Introduction

We examine the morpho-syntax of certain pronouns in Alemannic German, spoken in and around Switzerland. Specifically we discuss a type of pronoun, termed R-pronoun in van Riemsdijk (1978)'s study of Dutch, which also exists in German (see Abels (2012) and references therein). Unlike typical nominal elements in German, R-pronouns precede prepositions (1a), and for many speakers, in colloquial 'standard' (non-Alemannic) German they can also be extracted from PP (1b):

(1) R-pronouns in standard German

a. Ich ess [PP da-von/mit/...] b.  $\mathbf{Da}_1$  ess ich [ $PP t_1$  von] RPRN-of/with/... RPRN eat I of 'I eat with / (some) of this' 'This, I eat (some) of'

In contrast, in Alemannic use of an R-pronoun in PP (2a) or extraction of it from PP (2b) requires the use of another morpheme, de. As we will show, in isolation de is an R-pronoun meaning 'it', though it does not have any semantic contribution in examples like (2). Our goal is to argue that this redundant de can be understood as 'doubling', via the spell-out of a trace of movement within the prepositional phrase.

(2) R-pronouns in Alemannic<sup>1</sup> a. I iass [ $_{PP}$  do\*(**de**)-vo] b. **Do**<sub>1</sub> iass i [ $_{PP} t_1 * (de) - vo$ ] RPRN-DBL-of RPRN eat I

> 'I eat (some) of this' 'This, I eat (some) of'

Similar 'doubling' is likely possible in non-standard German more generally (Fleischer (2002)), though here we focus on Alemannic, where this doubling is obligatory in several contexts.

DBL-of

To analyze this doubling, we hypothesize that PPs are dominated by a 'little p', which assigns case to nominals in PP (van Riemsdijk (1990), Rooryck (1996), Koopman (2000), and Svenonius (2003)):

(3) PP dominated by pP  $[p_P p_{[Case]} [p_P P \dots]]$ 

We will propose that case-assignment by p triggers movement of R-pronouns from PP, leaving behind a 'resumptive' de in spec-PP, prior to any further syntactic operations involving the R-pronoun. We make our analysis explicit using Distributed Morphology (Halle & Marantz (1993)) and the copy theory of movement (Chomsky (1995) and Nunes (2004)). We also analyze related facts about focus-sensitive doubling in other environments. We go on to examine the constraints on such doubling in Alemannic. We will suggest that doubling in PP is motivated by a phonological EPP requirement (Richards (2016) and van Urk (2018)) in Alemannic and related dialects, and is constrained by haplology.

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<sup>&</sup>lt;sup>1</sup> Many of our Alemannic examples use the preposition vo, 'of', which often yields a partitive interpretation for objects, as indicated in the translations.

## 2. The basic patterns

We first describe the basic patterns using the pronoun do ('this/here') and the P vo ('of').<sup>2</sup> See section 4 for demonstration of these facts for other R-pronouns and prepositions. Unless otherwise indicated all data shown in this paper is from Alemannic German. An Alemannic R-pronoun need not be in PP, and can thus stand alone (4), in which case doubling by de can be used to encode focus (5):<sup>3</sup>

```
(4) Min hus isch do
my house is here

'My house is here' (Basic R-pronoun)

(5) Min hus isch do-de
my house is here-DBL

'My house is HERE' (With focus)
```

However, even without focus, Alemannic R-pronouns must be accompanied by de when in a PP (6):

```
    (6) I iass [PP do-*(de)-vo]
        I eat RPRN-DBL-of
        'Of this, I eat (some)' (R-pronoun in PP must have 'de')
```

As mentioned, normally *de* is an R-pronoun meaning 'it', as (7) shows. (Notice that *de* is not doubled when in PP. This is an exception which we explain in section 3.2 below.)

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(7) I iass [PP de-vo]
I eat RPRN-of
'I eat (some) of it' (Normal use of R-pronoun 'de')
```

Since de normally does have an interpretation, we take examples like (5) and (6) above to involve doubling: These contain two pronouns, one of which is de, though this has no semantic contribution in these contexts.

PP examples with doubling like (6) above can be subjected to further syntactic modification. One possibility is to extract the pronoun from PP, as we have already seen (8). Alternatively, it is also possible to move the R-pronoun and pied-pipe the PP along with it (9):

```
(8) \mathbf{Do}_1 iass i [PP \ t_1 \ *(\mathbf{de}) - vo] (9) [\mathbf{Do} \ *(\mathbf{de}) - vo]_1 iass i t_1 RPRN eat I DBL-of RPRN DBL-of eat I 'This, I eat (some) of' (Extraction from PP) 'Of this, I eat (some)' (Pied-piping of PP)
```

These patterns contrast with the behavior of more typical DPs, which follow P (10a) and cannot be extracted from it (10b), though pied-piping of PP along with movement of DP is permitted (10c):

```
(10) a. I iass [PP vo deam Brot] c. [PP Vo deam Brot] iass i t1
I eat of this bread Of this bread eat I
'I eat (some) of this bread' (DP in PP)

b. * [Deam Brot] iass i [PP vo t1]
This bread eat I of
'This bread, I eat (some) of' (No extraction)
```

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

<sup>&</sup>lt;sup>2</sup> The Alemannic *do* has a proximal interpretation, unlike its cognate *da* in standard German, which is distal. In Alemannic a distal interpretation is conveyed by another R-pronoun,  $d\ddot{o}t$ , which is a cognate of standard German *dort*.

<sup>3</sup> If de is present the R-pronoun is necessarily focused (5), but the R-pronoun can also be focused without de. We will argue that this de is derived by movement (though in (5) a very short one, see section 3.3). If our analysis is correct, then evidently focus on the R-pronoun can, but does not have to, involve movement. This is analogous to the fact that a focused element in English can remain in situ (with prosodic emphasis), or overtly move:

<sup>(</sup>i) a. I really like THESE COOKIES!

b. Now THESE COOKIES, I really like!

## 3. Main analysis: R-pronoun doubling and the structure of PP

Here we will first discuss why movement from PP is banned for typical DPs in German, following Abels (2012). We will then introduce pP, show how this facilitates an analysis of the doubling pattern in PPs, and then extend this analysis to the facts about focus shown above.

#### 3.1. Why extraction from PP is usually banned: Phases versus anti-locality

Above we saw that in Alemannic, R-pronouns can be extracted from PP, but typical DPs cannot. The same contrast is is true of German more generally, as well as Dutch (see van Riemsdijk (1997) and Abels (2012)). 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 movement from PP must pass through its specifier:

(11) 
$$XP_1 \dots [P_{P|Phase}] t_1 [P_P t_1]$$
 (Movement from PP must pass 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:

(12) \* 
$$[_{XP} \quad YP_1 \quad [_{X^{\cdot}} \quad X^0 \quad t_1 \ ]]$$
 (Anti-locality: No comp-to-spec movement in same phrase)

Assume that typical DPs originate in the complement of PP. This fits the fact that these follow P, as we saw in (10) above. Given the requirements just mentioned, we indeed 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:

(13) \* DP<sub>1</sub> ... [
$$_{PP_{[Phase]}}$$
  $t_1$  [ $_{P^{\circ}}$   $_{P^0}$   $t_1$  ]] (No movement from complement to specifier of PP)

Thus Abels derives a ban on P-stranding in German. This analysis applies equally to standard German and Alemannic. Next, we build from this analysis in order to account for the R-pronoun doubling facts.

## 3.2. Doubling of R-pronouns by raising to pP

Unlike usual DPs, we have seen in (1) above that R-pronouns in German can be extracted from PP, and also uniquely precede the P that they merge with. To account for this, Abels argues that R-pronouns are merged below PP but involve the inclusion of an additional phrase that intervenes between the two, in a way that allows the R-pronoun to move to spec-PP and then potentially onward without violating anti-locality. For our doubling analysis of Alemannic, it is sufficient to adopt a simpler proposal: that R-pronouns are externally merged in the specifier of the PP phase, rather than its complement. Importantly, we must also posit that PPs involve an additional 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. We will also maintain Abels proposal that PP is a phase.

(14) 
$$PP$$
 dominated by  $pP$ 

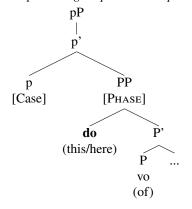
$$[pP p[Case] [PP P ...]]$$

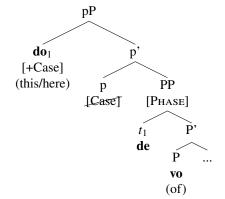
<sup>&</sup>lt;sup>4</sup> Specifically, Abels posits a phrase between the R-pronoun and PP that he terms DRP, named thus due to facts about the realization of R-pronouns in Dutch and German. He also posits that similar structure, though always silent, facilitates extraction from PP in P-stranding languages like English and Norwegian. One might alternatively propose that PP is not a phase in such languages, as Abels (2003) and Davis (2020) do. Note that R-pronouns cannot be left-leaning complements of an exceptionally head-final PP. This hypothesis wrongly predicts that R-pronouns should be frozen in PP, regardless of what linear order they happen to have.

<sup>&</sup>lt;sup>5</sup> In principle, another possibility is that R-pronouns are adjuncts of PP. As long as they are not complements, their extractability will be correctly predicted by the analysis in this section.

As mentioned, we assume that R-pronouns are externally merged in the specifier of PP, as in (15a) below. We propose that after this, little p attracts the R-pronoun to its specifier upon assigning it case. This case is usually overtly visible as either accusative or dative in German, though R-pronouns do not morphologically show this.<sup>6</sup> Importantly, we argue that in Alemannic, the trace left behind by this movement of the R-pronoun is spelled-out by the morpheme *de*, giving rise to doubling as in (15b). This is essentially resumption, since outside of doubling constructions, *de* is an R-pronoun meaning 'it'.

- (15) a. Step 1: Merge R-pronoun in spec-PP
- b. Step 2: Movement to spec-pP, doubling





Typical DPs, which are born in the complement of PP, cannot be attracted by pP and thus are not doubled, since they are frozen in place by the phase versus anti-locality conflict described above. If p cannot access a DP in the complement of the PP phase in order to attract it, we might also expect p to be unable to assign it case. However, if case assignment is mediated by Agree (Chomsky (2000, 2001)) and Agree is unlike Move in not being subject to the Phase Impenetrability Condition (Bošković (2007)), then p can in fact assign case to a DP in the complement of PP despite being unable to move it.

After movement to spec-pP and doubling occur as in (15) above, it is possible to move the R-pronoun further, either stranding pP below (16) or pied-piping it (17). In these examples movement targets spec-CP, and involves V to C movement, given the V2 syntax of (Alemannic) German (Holmberg (2015)):

- (16) R-pronoun extraction from pP
  - a.  $\mathbf{Do}_1$  iass i [ $_{PP}$   $t_1$  \*( $\mathbf{de}$ )-vo] RPRN eat I DBL-of 'Of this, I eat (some)'
  - b. RPRN<sub>1</sub> C<sup>0</sup>-V<sup>0</sup> SUBJ  $\begin{bmatrix} pP & t_1 & p^0 & p$
- (17) *Pied-piping of pP* 
  - a. [pP] **Do** \*(**de**)-vo]<sub>1</sub> iass i  $t_1$ RPRN DBL-of eat I '(Some) of this, I eat'

b. 
$$[_{PP} \text{ RPRN}_1 \ [_{P^{\cdot}} \text{ p}^0 \ [_{PP} \ t_1(=de) \ [_{P^{\cdot}} \text{ P}^0 \ ]]]]_2 \ C^0\text{-V}^0 \text{ SUBJ} \ t_2$$

This analysis also makes correct predictions about contexts with R-pronouns in 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 spec-PP will be realized as doubling. After this, it is possible to either extract the R-pronoun from pP (18), or pied-pipe the entire pP structure containing the R-pronoun to a higher position (19):<sup>7</sup>

(1) a.  $f\ddot{o}r mi = for me(ACC)$ 

b. mit mr = with me(DAT)

<sup>&</sup>lt;sup>6</sup> Alemannic pronouns, for instance, show these case distinctions clearly:

We would also predict the correct results by analyzing these examples as coordination of two full pPs.

- (18) 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'

b. RPRN<sub>1</sub> C<sup>0</sup>-V<sup>0</sup> SUBJ [
$$_{pP}$$
  $_{t_1}$  [ $_{p^{\circ}}$  p<sup>0</sup> [ $_{PP}$   $_{t_1}$ (=**de**) [ $_{P^{\circ}}$  P<sup>0</sup> ]] & [ $_{PP}$   $_{t_1}$ (=**de**) [ $_{P^{\circ}}$  P<sup>0</sup> ]]]]

- (19) 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. 
$$[p_P \text{ RPRN}_1 \ [p \cdot p^0 \ [p_P \ t_1(=de) \ [p \cdot P^0 \ ]] \& [p_P \ t_1(=de) \ [p \cdot P^0 \ ]]]] C^0$$
-V $^0$  Subj  $t$ 

Notice that in diagram (16b) 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*. Having a *de* in both spec-PP and spec-pP would create an example like (20), which is unacceptable:

(20) \* **Do** iass i **de-de**-vo
RPRN eat I DBL-DBL-of
'This, I eat (some) of' (*No double doubling*)

We argue that such examples are ruled out by *haplology*—the cross-linguistic tendency to avoid sequences of identical morphemes/syllables. (Though see also section 5 below, in which we will show that doubling in intermediate traces is independently ruled out.) This hypothesis leads us to a correct prediction about a situation where R-pronoun doubling in PP fails. Specifically, while doubling occurs with almost all R-pronouns (as we will see in section 4), the R-pronoun *de* ('it') cannot be doubled even when in a PP:

(21) I iass **de**-(\*de)-vo I eat RPRN-DBL-of 'I eat (some) of it' (*No doubling of 'de'*)

Since this R-pronoun is itself de, adding a second de would create an undesirable sequence of identical syllables. The unacceptability of this is what we expect, if haplology constrains the distribution of doubling.

#### 3.3. Doubling without PP

We showed in (5) above that, when focused, an R-pronoun can be doubled even when not in a PP. To account for this, we will adopt the proposal of Syed (2015) that a nominal phrase can be immediately dominated by a focus projection (FocP), which triggers movement of focused material. Specifically, we argue that when FocP immediately dominates the R-pronoun, it moves to spec-FocP, and that the trace of this movement is realized as doubling (22):

(22) Doubling by focus movement



The FocP as a whole, containing the R-pronoun, can then undergo further movement:

(23) **Do-de**<sub>1</sub> isch min hus  $t_1$  here-DBL is my house 'My house is HERE' (*Movement of focused R-pronoun*)

In examples with PPs, we saw that an R-pronoun can be extracted, stranding the doubling morpheme *de* below. The same is not possible in PP-less doubling examples, however:

```
(24) * Do<sub>1</sub> isch min hus [t<sub>1</sub> de]
here is my house DBL

'My house is HERE' (Cannot strand doubling morpheme when there is no PP)
```

We suggest that this is because de is a bound morpheme, which is unable to stand alone, though this problem does not arise when de is next to a stranded P.

The FocP we posit here is analogous to the QP of Cable (2010), which dominates A'-moving phrases. We leave it to future work to determine whether this FocP can be reduced to something like QP. More importantly, notice that the movement in (22) above is from complement to specifier within the FocP, and so should be ruled out by anti-locality. This is a complication that we will leave unresolved, since the main goal of this paper is to examine doubling in PPs. It is possible that this focus doubling is in fact not the result of movement. This is difficult to determine, since unlike doubling in PPs, focus doubling does not allow enough syntactic manipulation to investigate its structural properties in detail.

# 4. The morphology of doubling

So far our examples have mainly used the R-pronoun do ('this/here') and the preposition vo ('of'). All the patterns shown above can be replicated with the other R-pronouns  $d\ddot{o}t$  ('that/there') and wo ('what/where'), as well as with other prepositions. We see this below in (25), which shows preposition pied-piping, (26), which demonstrates preposition stranding, and (27), which shows PP-less focus doubling:

- (25) Various pronouns and prepositions: Pied-piping movement
  - a. [Do/döt **de**-vo/mit/för]<sub>1</sub> iass i  $t_1$  RPRN DBL-of/with/for eat I '(Some) of/with/for this/that, I ate'
- b. [Wo de-vo/mit/för]<sub>1</sub> iasst si t<sub>1</sub>
   RPRN DBL-of/with/for eats she
   '(Some) of/with/for what does she eat?'
- (26) Various pronouns and prepositions: Pronoun extraction
  - a. Do/döt<sub>1</sub> iass i [t<sub>1</sub> **de**-vo/mit/för]

    RPRN eat I DBL-of/with/for

    'This/that, I ate (some) of/with/for '
- b. Wo<sub>1</sub> iasst si [ $t_1$  **de**-vo/mit/för] RPRN eats she DBL-of/with/for 'What does she eat (some) of/with/for?'

- (27) PP-less focus doubling<sup>8</sup>
  - a. Min hus isch [do/döt]-de my house is here/there-DBL 'My house is HERE/THERE'
- b. **[Do/döt]-de**<sub>1</sub> isch min hus  $t_1$  here/there-DBL is my house 'My house is HERE/THERE'

(i) \* Wo-(\*de)<sub>1</sub> isch min hus  $t_1$ ? where-DBL is my house 'Where is my house?'

If wh-phrases are inherently focused (see Rizzi (1997), for instance) then the problem in the above example may be the presence of redundant extra focus. Notice that wo does occur with doubling in PP examples like (25b) and (26b) above, where in our analysis doubling occurs for an independent reason: pP-internal movement, rather than focus.

<sup>&</sup>lt;sup>8</sup> It is not possible to double the *wh*-R-pronoun *wo* in examples like (27), however, as (i) shows:

Notice that all of these pronouns, *do*, *döt*, and *wo*, are doubled by the morpheme *de*. Recall that in isolation, *de* is interpreted as 'it'—likely the semantically weakest possible R-pronoun. Cross-linguistically, it is typical for doubling phenomena to involve reduced/un-marked elements. For instance, van Urk (2018) analyzes instances of full DPs doubled by pronouns, and Landau (2006) shows that verb doubling in Hebrew results in an infinitive. Thus it is not surprising that in Alemannic, different pronouns are doubled by a morpheme that normally represents a less-marked option.

We implement this analysis using Distributed Morphology (Halle & Marantz (1993)), which posits that syntactic nodes are assigned their morpho-phonological form post-syntactically, based on a list of language-specific Vocabulary Insertion (VI) rules. The VI rules in (28) below can describe R-pronouns and their doubling in Alemannic. For concreteness these VI rules make explicit reference to a feature that distinguishes R-pronouns ('RPRN'). This is stipulative, but it is necessary to distinguish R-pronouns and usual pronouns/DPs in some way.

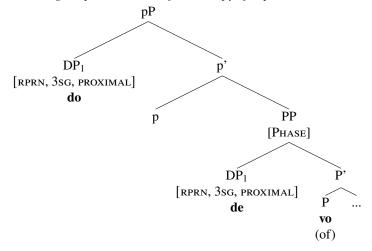
#### (28) VI rules for R-pronouns and doubling in Alemannic

- a. [RPRN, 3sg, PROXIMAL]  $\leftrightarrow$  do ('this/here') c. [RPRN, 3sg, wh]  $\leftrightarrow$  wo ('what/where')
- b. [RPRN, 3sg, distal]  $\leftrightarrow$  döt ('that/there') d. [RPRN, 3sg]  $\leftrightarrow$  de ('it')

In this set of rules, all R-pronoun forms are specified for the features [RPRN, 3sg], though *do*, *döt*, and *wo* have additional features as well, while *de* does not (28d). This makes concrete the intuition that the R-pronoun *de*, which means 'it', is relatively un-marked and under-specified.

The Subset Principle of Distributed Morphology requires a syntactic head to be realized by the VI rule that matches as many of its features as possible. Thus, while de matches a subset of the features of all R-pronouns, the more specific VI rules for the forms do, döt, and wo must usually be used when applicable. To analyze doubling by de, we adopt the copy theory of movement (Chomsky (1995), Nunes (2004), and van Urk (2018)), for which movement leaves behind not traces, but full-fledged syntactic copies, which are usually silent. We propose that when an R-pronoun moves, its lower copy can be realized as de via the VI rule in (28d), since this rule fits a subset of the features that all R-pronouns bear:

#### (29) Doubling via pronunciation of lower copy of R-pronoun



Since pronounced lower copies tend to be realized with less specific morphology (Landau (2006) and van Urk (2018)), pronunciation of an R-pronoun's lower copy in Alemannic is achieved by the most general VI rule available (28d), rather than any of the more specific rules used to realize the highest copy (28a-c.)

#### 5. The distribution of doubling: Spec-PP only

If movement must successive-cyclically pass through the edge of phases, and if CP is a phase as is widely argued, we would expect examples that move an R-pronoun from an embedded CP to allow pronunciation of the R-pronoun's intermediate trace in spec-CP. However, this is not possible, as (30)

below shows. In this example we see that cross-clausal extraction of an R-pronoun from PP is possible, as expected, but that leaving behind an instance of *de* in a position corresponding to spec-CP is ungrammatical:

```
(30) Do<sub>1</sub> heasch du gseit [t_1(*de) dass i [t_1 de-vo iass]] RPRN have you said DBL that I DBL-of eat 'You said that I eat (some) of this' (R-pronoun extraction, but no doubling in spec-CP)
```

We might suspect that this is due to a Doubly Filled Comp Filter violation (Chomsky & Lasnik (1977)), since (30) has an overt complementizer. However, Alemannic does not have the Doubly Filled Comp Filter (as noted by Bayer (2015)), so such an explanation is not feasible:

```
(31) Du heasch gfrogat [ wo dass i iass ]
You have asked where that I eat
'You asked where I eat' (No Doubly Filled Comp Filter in Alemannic)
```

Setting aside focus doubling (which may not be parallel to doubling in PPs), doubling only occurs in spec-PP. This observation is supported by the lack of doubling in spec-CP as well as spec-pP as discussed in section 3.2 above. Thus we suggest that in Alemannic, but not standard German, there is a requirement for spec-PP to be filled by overt material. This converges with the proposal in works such as Richards (2016) and van Urk (2018) that EPP effects, at least in some cases, arise due to Phonological Form requiring a given position to have phonological content. We hypothesize that such a requirement for spec-PP in Alemannic forces pronunciation of an R-pronoun's copy in spec-PP at the post-syntactic morpho-phonological stage of the derivation. Our analysis thus permits proposing that the syntax of R-pronouns and PPs is identical for Alemannic and standard German, but that a morpho-phonological difference yields R-pronoun doubling in only the former. We only find doubling in spec-PP because, for the moment, by assumption, this is the only phrase to which this phonological requirement applies. This analysis aligns with the proposal in works like Fanselow & Ćavar (2002), Landau (2006), and van Urk (2018) that lower copy pronunciation is only permitted when morpho-phonologically motivated. Only provided the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in works like Fanselow was considered to the proposal in work

#### 6. Conclusion

We have argued that doubling of R-pronouns in PP in Alemannic German arises due to movement of the R-pronoun from PP to spec-pP, with its lowest copy pronounced (using the least-specific applicable morpheme) to satisfy a phonological requirement that spec-PP be overtly filled. This analysis aligns with previous work on doubling as lower copy pronunciation as well as on the structure of prepositional phrases. However, at this time our proposal that spec-PP in Alemannic is subject to a 'phonological EPP' requirement is a hypothesis without independent evidence, which with luck future work may be able to justify. Additionally, we have proposed that focus doubling in Alemannic can also be analyzed as involving movement, though we must leave that topic aside for further study in other work. See Diem (2023) for the examination of an analogous doubling phenomenon elsewhere in Alemannic grammar.

<sup>&</sup>lt;sup>9</sup> This 'phonological EPP' would be violated in Alemannic examples like (10a) where there is a DP in the complement of PP, which cannot move through or cause doubling in spec-PP. Similarly, van Urk (2018) argues that a phonological EPP requirement in Dinka Bor motivates pronouncing lower copies of movement through spec-vP, but only ever for plural nominals, not singular ones. It thus appears that effects of this sort are not absolute in any case.

<sup>&</sup>lt;sup>10</sup>Though we assumed that R-pronouns are born in spec-PP, in section 3 (and footnote 4), we mentioned Abels' proposal that R-pronouns are merged below PP but that another phrase intervenes between the R-pronoun and PP, allowing the R-pronoun to reach spec-PP and move onward. What we have said in the present section would also allow us to adopt Abel's view: Whether or not R-pronouns originate below PP, we would only ever see doubling in spec-PP if this is motivated by a morpho-phonological requirement of PP in particular.

<sup>&</sup>lt;sup>11</sup>Hein & Barnickel (1990) analyze similar facts in Swabian German (a related variety) and also pursue what is essentially a doubling analysis. Their analysis applies Optimality Theory (Prince & Smolensky (2004)) to syntax, and thus hypothesizes that syntactic derivations are governed by a set of ranked violable constraints. Their analysis relies on six such constraints, which they rank differently for German dialects that do and do not have doubling. While it is beyond the scope of this paper to debate the desirability of an Optimality-Theoretic syntactic theory, we suggest that our analysis offers a potentially simpler alternative: All we must say to account for the dialectical variation is that in only some varieties of German, there is a PF requirement for spec-PP to be filled.

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