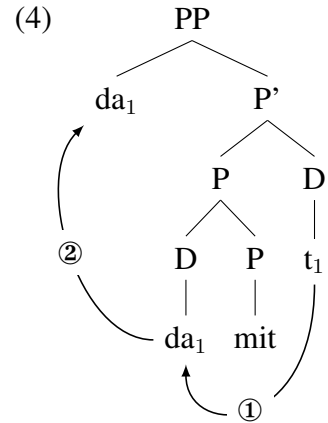# Replication of R-pronouns in German dialects

Claim: We claim that the doubling of R-pronouns (*da*, *wo*) found in several (mainly southern) German dialects (cf. Fleischer 2002) results from two consecutive movements: (i) incorporation into P^0 and (ii) subsequent movement to SpecPP, both triggered by an interaction of ranked violable constraints (in Optimality Theory) on possible properties and movement steps of R-pronouns. These movements are independent of further extraction out of PP. **Data:** German has two kinds of pronouns in prepositional phrases: regular NP pronouns (*ihn*, *sie*, *ihr*, etc.) and R-pronouns (*da*, *wo*). The latter usually combine with the preposition to create a pronominal adverb (*damit*, *wofür*, *hiervon*). While movement of regular NP pronouns out of PP is not possible (1a), R-pronouns may be extracted stranding the preposition (1b). In many dialects, however, a copy of the R-pronoun stays *in situ* inside PP (2a) (*Distanzverdopplung*, Fleischer 2002). This copy cannot be a repair of a stranded P, as it also occurs when the PP is left intact (*in situ* (2b) and with pied-piping (2c); *Kurze Verdopplung*, Fleischer 2002). Copies of the interrogative R-pronoun *wo* adjacent to the preposition take the form of the declarative R-pronoun *da* (3). **Issues:** The data raise three questions: (i) Why do regular NP pronouns and R-pronouns have different distributional and movement properties? (ii) Why is the R-pronoun doubled if not to avoid a stranded preposition? (iii) What accounts for the dialectal differences w.r.t. doubling of the R-pronoun? **Background:** Following Gallmann (1997); Müller (2000a); Fleischer (2002), we assume that R-pronouns (like regular NP pronouns) originate in the complement of P. According to Müller (2000a), certain regular pronouns are subject to the Wackernagel-Ross dilemma in this position: They must move into the Wackernagel position but cannot cross PP due to its islandhood. As a repair, R-pronouns are inserted because they do not receive case from P and are therefore not subject to the PP-island. The substitution is regulated by conflicting violable constraints ranked in an OT-grammar. This solves issue (i). **Proposal:** Issue (iii) can be accounted for by interaction of five constraints. CO-SEL, originating from Chomsky's (1981) *Projection Principle*, punishes non-selected elements (R-pronouns) in complement positions forcing the R-pronoun to move out of the complement position of P (independent of later extraction out of PP). There are two options (Gallmann 1997; Fleischer 2002): Either it moves directly into SpecPP violating a constraint against 'antilocal' movement (A-LOC, cf. Abels 2003; Grohmann 2003) or it incorporates into P. However, as we argue, incorporated elements cannot refer nor be referred to by other elements (cf. Krifka et al. 1995; Mithun 2010). Therefore, *PR-INC requires at least one token of a referring element (a pronoun) to not be incorporated. Copies result from interaction of a constraint against traces in complex heads *[$_{X^0}$ t] (cf. *Lexical Integrity*, Lapointe 1981; Spencer 2005) and *COPY punishing the creation of copies, rooted in the *Inclusiveness Condition* (Chomsky 1995). Crucially, we do not adopt the Copy Theory of Movement, where every movement leaves a copy by default, but rather follow Müller (2016) in assuming a dedicated operation Copy which is part of GEN that introduces copies under well-defined circumstances. Further, evaluation takes place at every phrase (see Müller 2000b; Heck and Müller 2000, 2013a,b; Fischer 2004; Heck 2008). Under the ranking in (5), an R-pronoun has to leave CompP to satisfy CO-SEL (5a). It cannot directly move to SpecPP due to A-LOC (5b) and it cannot incorporate into P and stay there because this violates *PR-INC (5c). In the winner (5e) the R-pronoun has incorporated into P followed by movement to SpecPP (4), while a defective copy has been left violating *COPY. Leaving no copy, on the other hand, fatally violates higher ranked *[$_{X^0}$ t] (5d). By assumption, the Copy operation does not copy formal features as [+wh] which accounts for the ungrammatical data in (3) if *wo* is just *da* with a [+wh] feature. Dialects that do not exhibit R-pronoun doubling have a ranking where *A-LOC and *[$_{X^0}$ t] are demoted below *COPY (6). The present analysis accounts for dialectal differences (issue iii) and not only models the replication, but explains why it occurs (issue ii), namely as a consequence of the interaction of independently established constraints on syntax, an issue that has not hitherto been properly addressed by previous analyses.

(1) a. *Ihn$_1$ hat Maria damals   [$_{PP}$ für t$_1$] gestimmt.
         him has Maria back.then   for   voted
         'For him Maria voted back then.'
     b. Da$_1$ hat Maria damals   [$_{PP}$ t$_1$ für] gestimmt.
         da has Maria back.then   for voted
         'Maria voted for it back then.'

(2) a. Da hat Maria damals   [$_{PP}$ da-für] gestimmt.
         da has Maria back.then   *da*-for voted
         'Maria voted for it back then.'
     b. [$_{PP}$ Da-da-für] hat Maria damals gestimmt.
     c. Maria hat damals [$_{PP}$ da-da-für] gestimmt.

(3) a. Wo ist Fritz allergisch [$_{PP}$ da-gegen   ] ?
         wo is Fritz allergic   *da*-against
         'What is Fritz allergic to?'
     b. *Wo ist Fritz allergisch [$_{PP}$ wo-gegen] ?
     c. [$_{PP}$ Wo-da-gegen] ist Fritz allergisch?
     d. *[$_{PP}$ Wo-wo-gegen] ist Fritz allergisch?

(4)

(5) *Optimization of the PP in doubling dialects*

Input: [$_{PP}$ mit da]	Co-Sel	*Pr-Inc	*[$_{X^0}$ t]	A-Loc	*Copy
a. [$_{PP}$ mit da]	*!				
b. [$_{PP}$ da$_1$ [$_{P'}$ mit t$_1$]				*!	
c. [$_{PP}$ [$_P$ da$_1$ mit] t$_1$]		*!			
d. [$_{PP}$ da$_1$ [$_{P'}$ [$_P$ t$_1$ mit] t$_1$]]			*!		
☞ e. [$_{PP}$ da$_1$ [$_{P'}$ [$_P$ da$_1$ mit] t$_1$]]					*

(6) *Optimization of the PP in non-doubling dialects*

Input: [$_{PP}$ mit da]	Co-Sel	*Pr-Inc	*Copy	A-Loc	*[$_{X^0}$ t]
a. [$_{PP}$ mit da]	*!				
☞ b. [$_{PP}$ da$_1$ [$_{P'}$ mit t$_1$]				*	
c. [$_{PP}$ [$_P$ da$_1$ mit] t$_1$]		*!			
☞ d. [$_{PP}$ da$_1$ [$_{P'}$ [$_P$ t$_1$ mit] t$_1$]]					*
e. [$_{PP}$ da$_1$ [$_{P'}$ [$_P$ da$_1$ mit] t$_1$]]			*!		

(7) Co(mplement)-Sel(ection)
     Assign a violation for every element in a complement position of a head that is not selected
     by that head.

(8) Antilocality (A-Loc)
     Assign a violation for every movement from complement position into specifier position
     of the same head.

(9) *[$_{X^0}$ t]
     Assign a violation for every trace inside a complex head.

(10) *Copy
      Assign a violation for every copy of an element.

(11) *Pr(onoun)-Inc(orporation)
      Assign a violation for every anaphorically or cataphorically referring element that is
      entirely included in a complex head.

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