

Backward Control without A-movement or ϕ -agreement

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This paper reports a case of obligatory Backward Control (BC) that resists analysis in terms of two major existing approaches: covert A-movement (Polinsky & Potsdam 2002) and ϕ -agreement (i.a. Tsakali et al. 2017). Building on Landau 2000, Ershova 2019, I propose that the reported cases of BC involve index agreement between the matrix and the embedded Voice.

1. Basic data. In Zimbabwean Ndebele (Bantu, S44), obligatory control predicates select infinitival complements. The controller DP may surface in the matrix (1) or in the embedded clause (2).

- (1) **UZodwa**_i u-zama [uku-ba e-pheka Δ_i]. (2) Ku-zama [uku-ba ku-pheka **uZodwa**].
1Zodwa 1-try INF-AUX 1-cook 15-try INF-AUX 15-cook 1Zodwa
'Zodwa tries to be cooking.' 'Zodwa tries to be cooking.'

The overt subject in (2) is in its base-generated position (Spec,vP) in the embedded clause (3). (Verbs in Ndebele move out of the vP and are linearized to the left of in-situ subjects.)

- (3) Structure of (2): [TP try_i [vP t_i [vP t_i [TP Aux [AspP cook_j [vP **Zodwa** t_j [vP t_j]]]]]]]]]

In-situ subjects are diagnosed by i) not controlling agreement (4)-(5) (class 15 is default agreement), ii) being obligatorily to the left of the object (6)-(7), and iii) hosting WH and NPI phrases (not shown here).

- (4) **Ku/*u**-pheka uZodwa isuphu. (5) **Ku/*u**-zama [uku-pheka uZodwa isuphu].
15/*1-cook 1Zodwa soup 15/*1-try INF-cook 1Zodwa soup
'Zodwa cooks soup' 'Zodwa tries to cook soup'
- (6) *Ku-pheka **isuphu** uZodwa. (7) *Ku-zama [uku-pheka **isuphu** uZodwa].
15-cook soup 1Zodwa 15-try INF-cook soup 1Zodwa

Evidence that we are truly dealing with control, rather than raising, comes e.g. from the absence of active-passive synonymy. In (8), the thematic subject of *try* is *soup* (the subject of the embedded passive sentence), which creates a meaning contrast with (5). Note that *try* cannot be analyzed as a restructuring verb. Its complement is at least as large as AspP as it may contain progressive aspect (1), perfect aspect, passive voice, and negation.

- (8) #Isuphu_i i-zama [uku-phekwa t_i]
9soup 9-try INF-cook.PSV
'The soup tries to be cooked' \approx (5)

2. BC in Ndebele does not show properties of A-movement. First, unlike BC, a **deleted copy in an A-chain obligatorily controls agreement**. This can be seen in hyperraising, where the embedded T obligatorily covaries with the matrix subject (9). Raising is generally optional in the language (with discourse effects), and its absence correlates with default agreement on the matrix verb (10).

- (9) **UZodwa**_i u-fanele [ukuthi t_i a/*ku-pheke.] (10) **Ku/*u**-fanele [ukuthi **uZodwa** a-pheke.]
1Zodwa 1-must COMP 1/*15-cook 15/*1-must COMP 1Zodwa 1-cook
'Zodwa must cook' 'Zodwa must cook'

Second, **BC differs from A-movement in that it doesn't create new binding relations**. An overtly moved DP can bind a matrix reflexive (11). Such binding is impossible in BC constructions (12).

- (11) **Umfana**_i u-a-**zi**_i-zamela uku-lala. (12) *Ku-a-**zi**_i-zamela uku-lala **umfana**_i.
1boy 1-PST-REFL-try.APPL INF-sleep 15-PST-REFL-try.APPL INF-sleep 1boy
'The boy was trying for himself to sleep.' 'The boy was trying for himself to sleep.'

These facts additionally rule out an analysis of BC where the matrix clause contains a *pro*/PRO. Third, **subjunctive CPs are permeable for A-movement but not for BC**. Many control verbs optionally select subjunctive CPs with no obviation effects (13). However, subjunctive clauses do not allow BC (14).

- (13) **UZodwa**_i u-zama [ukuthi Δ_i a-pheke.] (14) ***Ku**-zama [ukuthi **uZodwa** a-pheke.]
 1Zodwa 1-try COMP 1-cook 15-try COMP 1Zodwa 1-cook
 ‘Zodwa is trying to cook’ (cf. (1)) ‘Zodwa is trying to cook’ (cf. (2))

Importantly, the subjunctive complement of *try* is permeable to A-movement, as seen by the possibility of raising the embedded object to matrix subject: (16) is truth conditionally equivalent to its

- (15) UZodwa u-azama [ukuthi a-pheke **inyama**].
 1Zodwa 1-tried COMP 1-cook 9meat
 ‘Zodwa tried to cook meat’
 (16) **Inyama**_i i-azanywa [ukuthi *t_i* i-pekwe *t_i* ng-uZodwa].
 9meat 9-tried.PSV COMP 9-cook.PSV by-1Zodwa
 ≈ (15)

active counterpart in (15). If BC were covert A-movement, we would expect it to be available in (14), contrary to fact. (As should be clear, (16) is not a long passive.)

3. Proposal Building on Landau 2000, Ershova 2019, I propose that obligatory control in Ndebele involves an agreement relation between matrix Voice and embedded Voice that results in sharing of an index. As demonstrated above, **BC in Ndebele never involves ϕ -agreement with the controller/controllee (2), (5)**. Given this, I implement the index sharing as *index agreement*: an Agree relation between index (ID) features (i.a. Rezac 2004, Hicks 2009, Kratzer 2009, Kennedy 2014, Hanink 2019). DPs are ID goals, with a valued ID. I propose that Voice in Ndebele is an ID probe that normally agrees with the closest DP it c-commands. **The core proposal is that (subject) control has the following syntax of the matrix clause: i) a transitive v without a specifier and ii) Voice whose ID probe is relativized to Voice** (i.e. whose ID goal must be of category Voice). In BC, the embedded Voice agrees with the index of highest DP in its c-command domain (deriving the fact that the controllee must be the thematically highest DP in the embedded clause). When matrix Voice is merged, it agrees with the embedded Voice’s ID-feature:

- (17) [TP T _{ϕ} [VoiceP Voice_{[ID_[Voi]:_1]] [VP v [VP V [TP T [VoiceP Voice_[ID:_1]] [VP DP_[ID:1] . . .]]]]]}

I propose that, unlike other types of Voice, the subject control Voice head has the semantics of a thematic argument: it is of semantic type *e* (or *et, t*), saturating the highest argument of the matrix predicate with the inherited index, resulting in obligatory coreference. This proposal is parallel to accounts of BC that treat the ϕ -features of matrix T as saturating the matrix argument (Tsakali et al. 2017). As the Ndebele facts make clear, the features responsible for such saturation, and resulting coreference, cannot be ϕ -features.

4. Deriving locality and lack of agreement. VoiceP in Ndebele is a phase, as evident by the fact that in situ subjects (Spec,vP) are invisible to the ϕ -probe in T. For this reason, the matrix T in (17) cannot agree with the embedded subject. The Voice-Voice ID-agreement is possible since the lower Voice is accessible by virtue of being a phase edge, and due to there being no other phase head between the two Voice heads. When the matrix verb selects a CP, as in (14), the ID probe of the matrix Voice cannot be valued due to locality. This causes a crash at LF as there is no way to saturate the highest argument of the matrix verb.

5. Implications for Obligatory Control. The proposed account eliminates the necessity of PRO in Obligatory Control (OC) in general. Forward OC amounts to the derivation in (17) followed by raising of the embedded subject. This conclusion is supported by the fact that traditional raising in Ndebele is always optional, as illustrated by the raising verb *jayela* ‘do usually’ below. Thus, the systematic alternation between Forward and Backward Control in this language reduces to the optionality of raising.

- (18) Ku-jayela [TP uku-pheka uZodwa] (19) UZodwa_i u-jayela [TP uku-pheka *t_i*]
 15-usually INF-cook Zodwa Zodwa 1-usually INF-cook
 Zodwa usually cooks Zodwa usually cooks

In this light, the connection between OC and A-movement appears to be spurious (cf. Hornstein 1999 *et seq*). Another connection that turns out to be spurious is between OC and ϕ -agreement (cf. Landau 2000,

2004, Tsakali et al. 2017). OC *may* cooccur with A-movement and ϕ -agreement, but it must be, at least in some languages, independent of them. Such a dissociation is consistent with there being languages in which OC is invariably associated with A-movement or with ϕ -agreement; but accounts where A-movement or ϕ -agreement are the underlying mechanism for Control do not extend to Ndebele.