

Approaching Body Part Reflexives

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Outline

1. Background
2. Theoretical issues
 - the syntax of reflexivization
 - the semantics of reflexivization
3. Body Part Reflexives in Niger-Congo Languages
 - What do we know?
 - Some open issues
4. A comparative perspective
5. Conclusion

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1. Background: General

- General questions of interest:
 - Why does reflexivity of predicates require special licensing, and how does licensing work?
 - Why do particular (licensing) expressions have to be bound (roughly: are "anaphors")?
 - Why do certain anaphors have to be locally bound?
- Theoretical issue: Demise of indices as elements of grammar (see Chomsky 1995, Reuland 2001, Safir 2004a,b, Reuland 2011, in press):
 - both binding requirements and locality have to follow from properties available within (minimalist) syntax
 - the notion "bound" has to be properly semantically interpreted

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1. Background: Body Part Reflexives (BPRs)

- Common across languages (Schladt 2000)
- Generative literature primarily deals with SELF-reflexives
- SELF-reflexives and BPRs are both 'complex reflexives' → Question: What are the commonalities (and differences) between SELF-reflexives and BPRs?
- Discussion based on information about Niger-Congo languages in Afranaph database:
 - morphosyntactic make-up of the reflexive
 - syntactic environments
 - different readings
 - What additional information is necessary?

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2. The syntax of reflexive-marking

- Why Locality of SELF-anaphors?

Hypothesis:

- Locality follows since the SELF-morpheme covertly head-moves onto the predicate head/verb (Reinhart and Reuland 1991, Reuland 2001, 2008, 2011)
- The resulting SELF-V is semantically interpreted as reflexive

(1) a. John hates himself


→ John (self)-hates himself

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2. The syntax of reflexive-marking

- What enforces SELF-movement?

Hypothesis: General economy principle preferring an interpretive dependency to be encoded in the syntax if possible will suffice as a trigger (Reuland 2008, 2011)

- Local binding versus exemption

Hypothesis: SELF can only reflexive-mark the predicate and hence enforce binding if it is in a position from which movement is possible.

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2.1 SELF movement and exemption

- In positions where syntactic constraints such as the coordinate structure constraint, or the condition on extraction domains block movement, the SELF-anaphor cannot move and enforce reflexivity
- Hence the SELF-anaphor is exempt from a binding requirement (Reuland 2008, 2011):

(1) b. *Max was happy that the queen invited himself for a drink


 (invite → REFL → *)

c. Max was happy that the queen invited [Mary and himself] for a drink


 (no REFL)

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2.2 Morphosyntax of SELF-reflexive

- Leading hypothesis: The binding behavior of an expression is determined by its morphosyntactic make-up in relation to its syntactic environment.
- Specific assumption: the internal structure of English SELF reflexives is as in (2), where *him* is in the specifier of a functional projection in the left periphery of the extended projection of the SELF-noun:

(2) [_{FP} him [_{NP} SELF]]

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2.3 Towards a semantics of reflexive marking

Jackendoff 1992: English *himself* allows a proxy-interpretation:

- (3) a. (Upon a visit in a wax museum:) All of a sudden *Ringo* started undressing *himself* (= Ringo or his statue)

Safir 2004a,b: Not special to reflexives:

- (3) b. Ringo is made of stone, whereas Yoko is made of wax
c. Suddenly, every pop icon started taking off the shirt he was wearing

Task: Develop a semantics capturing proxy-readings
Should capture both bound and exempt interpretation

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2.4 What makes SELF a reflexivizer?

- SELF is inherently relational: A SELF is intrinsically some individual's SELF
→ Logical syntax representation of *The girls admire themselves*:

(4) The girls (λx (admire (x, [x SELF])))

- SELF maps an x onto x's SELF, which, in turn, is such that it can stand proxy for x.
- Generalizing (4): an inherently relational Noun is in principle suited as a reflexivizer if it can be interpreted as a functor f such that $||f(x)||$ can stand proxy for $||x||$:

- (5) a. DP (λx (V (x, [x N])))
b. DP (λx (V (x, f(x))))

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2.5 What does *self* do?

First approximation:

Keenan 1988: Pron-self is an operator that applies to a two-place predicate R (= a relation between atomic entities) and generates a one-place predicate over sets A of atomic entities.

Thus the interpretation of (6a) is formalized as in (6b).

- (6) a. The girls admire themselves.
b. REFL := $\lambda R. \lambda A. \forall x \in A [R(x, x)]$

- Questions: i. How to accommodate proxy-readings?
ii. How to generalize over further types of anaphors (specifically BPRs)?
iii. What does each of the components contribute?

→ Intermezzo: The semantics of pronominals and SELF-anaphors

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2.5.1 A semantics for pronouns

Starting point: Jacobson (1999)'s variable free semantics

- Jacobson: Pronominals denote the identity function (not individual variables)
→ pronominals are of type <ee> rather than type <e>.

Reuland & Winter 2009:

- Pronouns are interpreted as functions mapping individuals to their proxies, where the proxy-set is contextually determined.

Technically: Pronominals denote Skolem functions:

Functions from entities to entities that take a relation as a parameter. This parameter determines the range for each possible entity argument.

- (7) A function f of type (ee) with a relational parameter R is a **Skolem function** if for every entity x: $R(x, f_R(x))$ holds.

For pronominals this parameter is the *proxy relation (PR)*, describing the possible proxies $\lambda y. PR(x, y)$ of any entity x referred to.

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2.5.2 Binding in a variable free system

Binding is expressed by the “Z-function” in Jacobson’s system:

The bound reading of *John loves his mother* is represented as:

$$(8) \text{ John Z-loves } F_{\text{mother}} = \text{John loves } F_{\text{mother}} (\text{John})$$

Binding of *himself*: Intuitive version:

$$(9) \text{ John loves himself} = \text{John Z-loves } F_{\text{self}} = \text{John loves } F_{\text{self}} (\text{John})$$

A “proxied” version of the Z function: the value of F_{self} (John) may be one of John’s proxies, formally represented in (10):

$$(10) Z^{PR} = \lambda R. \lambda f. \lambda x. R(x, f_{PR}(x))$$

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The interpretation of SELF-anaphors: Option 1

The unmarked option – self composes with the Skolem function denoted by the pronoun through the binding mechanism. Self covertly incorporates into the transitive predicate (as happens overtly in *self-hater*) and contributes a proxy relation to the non-reflexive pronoun through the proxied version of the Z function:

$$(11) Z^{PR} = \lambda R. \lambda f. \lambda x. R(x, f_{PR}(x))$$

The Z function provides the Skolem function *f with its parameter*. The denotation of a VP like *undress himself* is obtained using the structure *self-undress him*:

$$(12) Z^{\text{self}} (\text{undress})(\text{him}) = Z^{\text{self}} (\text{undress})(f) \\ = \lambda x. \text{undress}(x, f_{\text{self}}(x)) = \lambda x. x \text{ undressed one of } x\text{'s self proxies} \\ \text{(by definition of } f \text{ as a Skolem function)}$$

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The interpretation of SELF-anaphors: Option 2

A marked option – self composes with the Skolem function directly. This option is only available in exempt positions, when the incorporation with the predicate is syntactically blocked (e.g. by the Coordinate Structure Constraint)

Direct composition with the Skolem function leads to (13):

$$(13) \text{ himself} = f_{\text{self}} = \text{a function mapping every entity } x \text{ to one of its proxies in } \text{self}(x)$$

→ exempt reading of *himself* allows it to be interpreted as either bound or free, similarly to the non-reflexive pronoun *him*.

Recall: The obligatoriness of the bound interpretation where possible is due to economy.

Conclusion: No intrinsic difference between *self* in bound and exempt positions.

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3. Understanding BPRs

- Body part expressions are inherently relational (like *self*)
- BPRs usually consist of a (possessive) pronoun and the respective body part noun and are the most frequent reflexive markers (85%) in African language families (Schladt 2000).
- Data from the African Anaphora database shows that BPRs in our selection pattern with SELF reflexives in their distribution over different syntactic environments.

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3.1 Binding and Interpretation of BPNs

Body part nouns are intrinsically relational, just like SELF

- they have the same combinatory options as SELF
- BPN-movement

• Specifically: They can combine with a predicate just like *self*.

(14) his body = f_{body} = a function mapping every entity x to one of its proxies in $body(x)$

Technically: Binding of the BP follows the model of SELF:

(15) $Z^{BP}(V)(Pron) = Z^{BP}(V)(f) = \lambda x. V(x, f_{BP}(x))$
 = $\lambda x.x$ V-ed one of x 's body's proxies (by definition of f as a Skolem function)

Expectations:

- Exempt interpretation if syntax blocks BPN-movement
- Proxy-interpretations just as with SELF-anaphors

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3.2 Local binding

(16) a. Ijoni mre oma-re-oyen **[Urhobo]**
 John see.PST body-AM-him
 'John saw himself'

b. Olú wẹ ara rẹ **[Yoruba]**
 Olu like body his
 'Olu likes himself'

c. Okon á-má ídém ọmọ **[Ibibio]**
 Okon Agrs-love body his
 'Okon loves himself'

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3.3 No long distance binding

(17) a. * Ijini ta ne Imeri oma-re-oyen vwo ẹguṇọ kẹ **[Urhobo]**
 Jean said that Mary body-AM-him has love for
 'Jean said that Mary loves him'

b. * Olú fura pé Màrà fẹràn ara rẹ **[Yoruba]**
 Olu suspect that Mary likes body his
 'Olu suspected that Mary likes him'

c. * Okon á-diṅṅọ ké edem á-ma ídém ọmọ **[Ibibio]**
 Okon Agrs-know that edem Agrs-like body his
 'Okon knows that edem like himself'

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3.4 Bound by quantifier

To be sure that binding is possible (and it's not only coreference):

(18) a. Emeshare na ọvuṇvo ni oma-re-oyen **[Urhobo]**
 boys the each.one looked body-AM-him
 'Every/each boy looked at himself'

b. Ọmọkùnrin kọ̀ọ̀kan wo ara rẹ **[Yoruba]**
 boy each-one look body his
 'Every boy looked at himself'

c. àfitówò é-mà-é-sé ídém ọmmọ **[Ibibio]**
 all.person/everybody SM-TM-SM-look body their
 'Everybody looked at himself'

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3.5 Distribution: *Finite subject

Certain languages (e.g. Modern Greek - Anagnostopoulou & Everaert 1999 - and Georgian - Amiridze 2006) allow anaphors as subjects of finite clauses → has to be assessed for the languages under investigation:

(19) a. *Ara rẹ lo sí ojà ní ànà **[Yoruba]**
 body his go to market at yesterday
 'Himself went to the market yesterday'

b. *Òpò èniyàn kò fẹràn Alóńgẹ, şùgbón ara rẹ fẹràn wọn **[Yoruba]**
 many people NEG like Alonge but body his like them
 'Many people do not like anchovies, but he likes them'

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3.6 Distribution: ^{OK}In non-co-argument position (locative PPs)

(20) a. Isali mřẹ ọrodeko kere oma-re-ọyen / re-ọyen **[Urhobo]**
 Sally see.PST snake near body-AM-her / AM-her
 'Sally saw a snake near her'

b. Òjó rí ejò ní ègbé ara rẹ / rẹ **[Yoruba]**
 Ojo see snake at side body his / his
 'Olu saw a snake besides him'

c. Mary á-má-kít wèd ké èdém ómò **[Ibibio]**
 Mary SM-TM-see book LOC body her
 'Mary saw a book behind her'

Urhobo and Yoruba also allow a bound pronominal in this position. The Ibibio data leave this open so far.

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3.7 Proxy readings

(21) a. Olú rọra wẹ ara rẹ kí amò nà má ba **[Yoruba]**
 Olu carefully wash body his COMP clay the NEG damage
 'Olu washed himself carefully, so as not to damage the clay.'

b. ọ mre oma-rẹ-ọyen kasa-kasa **[Urhobo]**
 3SG saw body-AM-3SG everywhere
 'He saw himself everywhere'
 (no 'his statue' interpretation possible)

c. Me mre oma-mẹ vwẹ oma-wen **[Urhobo]**
 1SG see myself LOC body-2SG.POSS
 'I see myself in you'

- Proxy-readings available in Yoruba and Ibibio.
- Urhobo doesn't allow a statue reading.

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3.7 Proxy readings

To interpret this difference, the following questions are of interest:

- What is the range of proxy-interpretations in Urhobo in general?
- Does Urhobo allow proxy readings at all?
- Are there restrictions on proxy-readings specific to reflexive predicates?
 - pragmatically conditioned limitations on the range of admissible proxies ('proxies must be sufficiently similar', as suggested by (21c))
 - E.g. *body* is still really one's body in Urhobo → restricts available proxies.
 - syntactic restriction, due to chain formation as with Dutch *zich*

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3.8 Exemption and BPRs

- Question: Are the equivalents of (1c), where SELF movement is blocked in a coordinated structure, wellformed in the languages under investigation?

(1) c. Max was happy that the queen invited [Mary and himself]

- So far, we don't know whether this is the case, and further research is needed.
- Note, that whether exemption is expected or not does not only depend on the nature and position of the head, but also on the nature of the specifier/POSS element.
 - For instance, in Dutch *zich*, carries its own dependency requirement. So, where *pron-zelf* is exempt in the relevant contexts in Dutch, for independent reasons *zich-zelf* never is (see Reuland 2011 for discussion).

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4. Comparative Perspective

- While the BPRs in the Afranaph data base all exhibit a local binding requirement (that is, they all obligatorily reflexivize the predicate they are construed with), this does not hold for all BPRs cross-linguistically.
- A language reported to have BPRs with no binding enforcement is Peranakan Javanese (PJ) (Cole et al. 2008).

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Excursion: Licensing reflexivity

Question: What makes reflexivity special?

Hypothesis (Reuland 2008, 2011):

The computational system cannot handle two identical variables on a verbal grid.

→ reflexive predicates must be licensed.

Licensing involves two main strategies:

- An operation on argument structure: the valence of the predicate is adapted (reduction, bundling of thematic roles, Reinhart & Siloni 2005).
- Protection: one variable is structurally embedded as PRON-SELF, POSS-BP
 - $(\lambda x (V (x, [x [N]])))$
 - $(\lambda x (V (x, f(x))))$ ($[x[N]]$ being interpreted as a proxy of x)

NB: Licensing by protection does not entail a local binding obligation

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4.1 Peranakan Javanese

- In PJ the reflexive *awake dheen* 'body his' can be used in local contexts to license reflexivity:
- It keeps the arguments distinct as in (22a), but does not enforce reflexivity, witness (22b):

(22) a. Tono_i ketok awake dheen_i nggon kac
Tono see body-3 3sg in mirror
'Tono saw himself in the mirror'

b. Ali_j ngomong nek aku pikir [Tonoi ketok awak-e dheen_{i/j/k}
Ali N-say COMP 1sg think Tono see body-3 3sg
nggon kaca]
in mirror
'Ali said that I thought that Tono saw himself/him in the mirror'

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4.1 Peranakan Javanese

- From the current perspective, to be able to license reflexivity it is sufficient that *awake dheen* is syntactically and semantically complex, which seems straightforward.
- But: Why doesn't it enforce reflexivity? Two options:
 - i. lexical (*awake* is not attracted);
 - ii. structural (*awake* cannot move onto the verb).
- Note, that there is another complex anaphor in PJ, *awake dheen dhewe* 'body his self'. As (22c) shows, this anaphor is obligatorily locally bound.

(22) c. Bowo_i ngomong nek aku pikir [Tono_i ketok awake dheen
 Bowo N-say COMP 1sg think Tono see body-3 3sg
 dhewe_{i/*j/*k} nggon kaca]
 self in mirror
 'Bowo said that I thought that Tono saw himself in the mirror' 29

4.1 Peranakan Javanese

- In (22c) SELF appears to be in a canonical head position of the NP. If so, SELF-movement is expected to be available.
- In the case of *awake dheen*, no overt element is in the canonical head position of the NP → *structural explanation*: if *awake* is merged in a specifier position in the left periphery, one may expect that left branch condition effects prevent movement onto the verb.
- A similar binding behavior cannot be found in African Anaphora resources. No standardly exempt uses of the PJ type are reported, see (17a) repeated:

(17) a. *ljini ta ne Imeri oma-re-oyen vwo eguonọ ke
 Jean said that Mary body-AM-him has love for
 'Jean said that Mary loves him'

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4.2 PJ vs Yoruba

- Given the analysis of PJ, the internal structure of anaphoric expressions in the African languages discussed merits attention.
- Consider Yoruba: the BPN is also in the left periphery. Choice among options depend on details of the structure that are as yet unclear.
- For instance, if in Yoruba *ara* ends up in its PF position by head-movement, further – covert – movement into the verbal domain would indeed be expected to be fine, yielding local binding as is found, and thus long-distance binding is ruled out, (23).

(23) *Olú fura pé Màrià fẹ̀ràn ara rẹ̀ [Yoruba]
 Olu suspect that Mary likes body his
 'Olu suspected that Mary loved him'

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4.3 Inclusive reference

Consider further "inclusive reference":

(24) Laadi_i taa soòki káàn-sù_{1+x} [Hausa]
 Ladi 3SG criticize head-3PL
 'Ladi criticized themselves'

- Protection by the BPR is necessary as one of the instantiations of the predicate is reflexive (assuming a distributive reading).
 - In terms of licensing we have the same case as in *John admired [Mary and him*(self)]*, where *self* is required since otherwise the reflexive instantiation of the predicate would not be licensed.
- Yet, the predicate in (24) is not reflexive (if it were forced to be reflexive, the sentence would be ill-formed, since subject and object don't match in number) → movement is not forced → how prevented?
- For firm conclusions it should be determined if the pronominal in cases like (24) is ruled out.

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