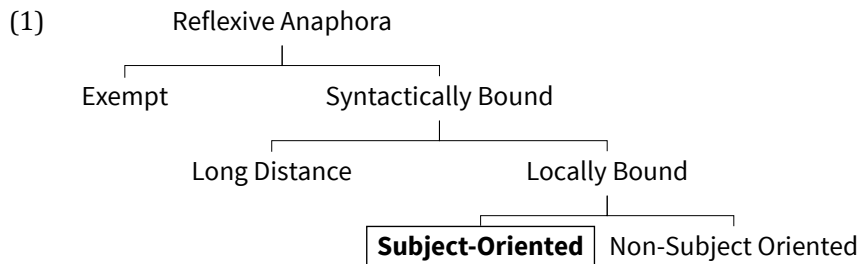# Giving Reflexivity a Voice[*]

Byron Ahn (byronahn-æt-bu-dat-edu)

MIT LingLunch

1. Introduction

Reflexive anaphors are not homogeneous; they can be subcategorized in many ways, e.g.:[1]

(1)   Reflexive Anaphora
    ┌──────────────┴──────────────┐
  Exempt   Syntactically Bound
                    ┌──────────────┴──────────────┐
              Long Distance   Locally Bound
                                       ┌──────────┴──────────┐
                                 Subject-Oriented │ Non-Subject Oriented

Despite this, binding-theories have generally been focused on accounting for as wide a range of empirical phenomena as possible.

- ◆ While it may be desirable in terms of formal simplicity, more complex solutions may be necessary.

This talk will focus on **Local Subject-Oriented Reflexivity** (**LSOR**)[2]

- ◆ In LSOR, the reflexive anaphor must be bound by the most local subject

- ◆ Focusing on this empirical domain, it will become clear that it is a mistake to try to apply the same licensing conditions to all types of reflexive anaphors

Consider the following example, from Shona (Bantu), which employs the *zvi* morpheme as an LSOR marker:

(2) Mufaro   a-   ka- zvi- bik -ir -a   mbudzi   [Storoshenko 2009:(23)]
     Mufaro.1 SUBJ.1-PST-**LSOR**-cook-APPL-FV goat.9
     '*Mufaro$_i$ cooked the goat$_j$ for himself$_{i/*j}$.*'

- ◆ The *zvi* LSOR marker indicates that the applicative object must be bound by the (local) subject (*Mufaro*)

  - ▸ (and that it cannot be bound by the direct object, *mbudzi*)

> **NAÏVE SUBJECT-ORIENTATION PUZZLE**
>
> Why is it that special morphosyntactic marking of reflexives occurs only when the <u>*subject*</u> is the antecedent of the bound argument?

- ◆ To pose the question another way: Why aren't there any languages in which *direct object* antecedents license unique morphosyntactic marking of reflexivity, to the exclusion of all other antecedents?

- ◆ And with constraints on locality, **how could this sensitivity be formalized**, when the subject and anaphor could be rather far apart, structurally?

At the same time, **not all subjects can license LSOR** – there are additional constraints

- ◆ (see, e.g., Burzio 1986, Kayne 1975, Lidz 1996, Rizzi 1986, Sportiche 2010, Storoshenko 2009)

[1]This ontology, inspired in part by Sportiche 2012, is mostly meant to be descriptive, and it is almost certainly incomplete. There are different types of long-distance reflexives, and there are different types of exempt anaphors, possibly including (the different types of) logophors.

[2]For a good discussion of local non-subject oriented reflexive anaphora, see Charnavel and Sportiche 2014.

<div style="background:orange">
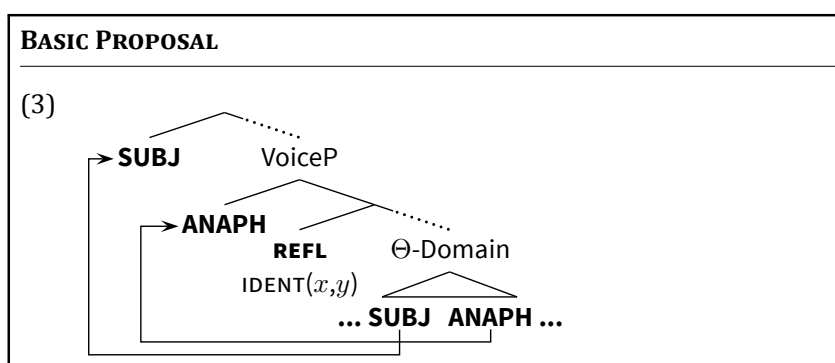
INFORMED SUBJECT-ORIENTATION PUZZLE

Why can *only some subjects* license LSOR?

</div>

- How could a marker or reflexivity be sensitive to the **type** of subject?
- Even if there are diacritics distinguishing types of subjects, the locality issue arises again

⌜Needed⌝: **an understanding of the syntax of subjects and the licensing of LSOR anaphors**

I argue that **a Reflexive Voice^0 is at the heart of licensing LSOR**

- Reflexivity in LSOR derivations is composed of two atoms:
    - 1: **a semantic reflexivizer** (associated with a unique grammatical Voice^0, REFL)
    - 2: **an pronominal anaphor** (which undergoes movement, triggered by REFL)

BASIC PROPOSAL

(3)

```
         ┌─────── VoiceP
    ──▶ SUBJ        ·······
         │    ┌──▶ ANAPH ──┐
         │    │    REFL   Θ-Domain
         │    │  IDENT(x,y)    ╱╲
         │    │      ... SUBJ  ANAPH ...
         └────┴──────────────┘
```

- Non-LSOR involves **only** a pronominal anaphor, and this is what distinguishes LSOR from non-LSOR without stipulation

Our final question concerns the wide variety in **the "strategies" of marking LSOR morphosyntactically**

- Some combination of special reflexive pronouns, special word orders, verbal affixes, etc. ...
- Some non-generativists may take this as support that languages' expression of reflexivity is rather free
- Thus generativists are tasked with answering the following question

<div style="background:orange">

TYPOLOGICAL QUESTION

What is the range of possibilities for marking LSOR? Are there constraints on what can mark it?

</div>

- Given principles of locality and selection, the proposal in (3) constrains possibilities
    - ▸ Accounts for which structural elements mark LSOR in a broad range of languages
    - ▸ Including the fact that LSOR is marked in English with anaphors that "avoid" phrasal stress:
        - (4) a.   Yesterday, Colleen described her *són*.
        - b.   Yesterday, Colleen *descríbed* herself.

<div style="background:lightgreen">

I WILL CONCLUDE:

LSOR, all its properties, and apparent variation **emerge from what UG provides**, namely:
    (i) Reflexive Voice and its formal properties
    (ii) the syntax-semantics interface, and constraints on locality

</div>

2.   Previous Approaches

LSOR is overtly marked with some morpho-syntactic exponent(s) in a great many languages

- ◆   e.g.,   **Danish**   *sig selv*   (Scandinavian, Vikner 1985)
         Inuit   *immi*   (Eskimo–Aleut; Bittner 1994)
         Japanese   *zibunzisin*   (Altaic; Katada 1991)
         Kannada   *-koL*   (Dravidian; Lidz 1996)
         Lakhota   *ic'i-*   (Siouan; Charnavel 2009)
         Romance   *se/si*   (Kayne 1975, Burzio 1986, Rizzi 1986, Sportiche 2010)
         Russian   *sebe*   (Slavic; Timberlake 1979)
         Shona   *zvi-*   (Atlantic-Congo; Storoshenko 2009)
         Tɔrɔ k: kɔ *unɔ*   (Dogon; Culy et al. 1994)
         …

- ◆   These LSOR markers cannot be used for reflexivity when the subject is not the binder

However, **well-established theories of reflexivity cannot (or do not) distinguish binding by a subject and binding by a non-subject**

- ◆   This is true of semantic and syntactic binding theories

  - ▸   Co-argument theories (Reinhart and Reuland 1993, *et seqq.*) and valency-reducing theories (Bach and Partee 1980, Keenan 1988, *inter alia*) simply cannot refer to **structural notions** like 'subject'

  - ▸   Both c-command-based theories (e.g. Principle A, Chomsky 1981 et seqq.) and movement-based theories (e.g. Hornstein 2001, Kayne 2002) only constrain anaphors, and **not their antecedents**

- ◆   **This has been seen as a benefit**: not all languages seem to differentiate LSOR from a non-LSOR

  (5)   a.   Ken$_k$ assigned $\boxed{\text{Angie}_j}$ to $\boxed{\text{herself}_j}$.

        b. $\boxed{\text{Ken}_k}$ assigned Angie$_j$ to $\boxed{\text{himself}_k}$.

  - ▸   If not all languages make the distinction, perhaps LSOR-derivations employ all the same grammatical mechanisms for deriving reflexivity in general, with some additional mechanism(s) to account for local subject orientation when relevant

LSOR, when modeled, is derived by movement, for the anaphor to be in the subject's local domain

- ◆   "[T]he most prominently defended mechanism for explaining the crosslinguistic variety of locality conditions on anaphors has been to posit (covert) movement to the more local domain." (Safir 2004:7)

  - ▸   This reflexive-movement has been seen as independent of the reflexive-licensing conditions

Movement seems right: it derives the fact that **LSOR is ruled out when the bound argument is licensed in an island** that excludes the subject

(6)   a.   Lucie $\boxed{\text{s'}}$ est   vue   [French]
           Lucie   **LSOR** PERF   seen
           'Lucie saw herself.'

        b.   Lucie   a   compté   cinq   filles   [$_{\text{island}}$ en dehors   d'   elle-même]
             Lucie   PERF   counted   five   girls   outside   of   herself
             'Lucie counted five girls outside of herself.'

        c.   ★ Lucie $\boxed{\text{s'}}$ est   compté(e)   cinq   filles   [$_{\text{island}}$ en dehors   (de)   __]
             Lucie   **LSOR** PERF   counted   five   girls   outside   (of)
             Intended: 'Lucie counted five girls outside of herself.'

- ◆   That (6c) contains an island is demonstrated by the ungrammaticality of WH-extraction from the same position: *Qui a Lucie compté cinq filles en dehors (de)?

  - ▸   Any number of islands (e.g. coordination, complex NP, etc.) can exhibit the same effect

  - ▸   So long as the island excludes the antecedent subject completely

- This type of data led (Kayne 1975:ch.5) to the conclusion that reflexive clitics "originate as pronouns in postverbal object NP position", with some formal feature(s) "ensuring them to be spelled *se* in the clitic position."

- Similar data can be found in Kannada; LSOR clauses cannot contain an anaphor from Lidz (2001a, p.c.):

(7) a. Hari tann-annu hoDe-du   -**koND**-a   [Kannada]
         Hari self -ACC   hit   -PST.PRT-**LSOR** -3SM
         'Hari hit himself.'

     b. ★Hari [island tann-annu mattu tann-a   hendati-yannu] hoDe-du   -**koND**-a
         Hari   self -ACC   and   self -GEN wife -ACC   hit   -PST.PRT-**LSOR** -3SM
         Intended: 'Hari hit himself and his wife.'

     c. Hari [island tann-annu mattu tann-a   hendati-yannu] hoDe-d -a
         Hari   self -ACC   and   self -GEN wife -ACC   hit   -PST-3SM
         'Hari hit himself and his wife.'

  ▸ Unlike the French examples, the reflexive movement in (7a) is string-vacuous

    ↳ This reflexive movement has been previously said to be possibly covert (Chomsky 1995:104)

    ↳ It is nonetheless sensitive to islands

But a purely movement-based approach to deriving subject oriented reflexivity **overgenerates**

- Any subject should be able to license LSOR

- But **derived subjects do not license LSOR** (e.g. subjects in passive and raising[3] clauses; Kayne 1975, Burzio 1986, Lidz 1996, Rizzi 1986, Sportiche 2010, Storoshenko 2009)

(8) a. Sa femme **se** décrir -a   à   Jean   [French; Kayne 1975]
         His wife   **LSOR** describe-FUT.3s to Jean
         'His wife will describe herself to Jean.'

     b. Jean sera   décrit   à   lui-même par sa femme
         Jean PASS.FUT.3s described to himself   by his wife
         'Jean will be described to himself by his wife'

     c. ★Jean **se** sera   décrit   (à lui-même) par sa femme
         You **LSOR** PASS.FUT.3s described (to himself) by his wife
         Intended: 'Jean will be described to himself by your wife.'

(9) a. hari tann-annu hoDe-du-**koND**-a   [Kannada, Lidz 1996]
         Hari self -ACC   hit   -PP-**LSOR** -3SM
         'Hari hit himself'

     b. hari (tann-age) santooshaagiruwaage kaNis-utt -aane
         Hari (self -DAT) be.happy   seem-PRES-3SM
         'Hari seems (to himself) to be happy'

     c. ★hari (tann-age) santooshaagiruwaage kaNis-**koLL**-utt -aane
         Hari (self -DAT) be.happy   seem-**LSOR** -PRES-3SM
         Intended: 'Hari seems to himself to be happy'

  ▸ The movement theory, if correct, **needs to be constrained**

> **LSOR Requires a New Approach**
>
> Existing theories either (i) do not derive subject-orientation, or (ii) incorrectly predict all subjects to be able to license LSOR

---

[3]Subject-to-subject raising without an intervener (e.g. with raising predicates like *tend*) does not require a non-active voice (such predicates may in fact be voice-less clauses, see Sailor and Ahn 2010), while subject-to-subject raising over an experiencer predicates (e.g. *seem*, *appear*) *do* involve a non-active Voice[0]. Empirical evidence from acquisition supports this: verbal passives and raising over an experiencer are acquired rather late, and at the same time, while raising without an experiencer intervener (e.g. with *tend*) is acquired much earlier (Orfitelli 2012) – thus perhaps their late acquisition has something to do with the relevant non-Active Voice[0]s and/or their syntactic effects. Additionally, it may be that Japanese raising over experiencer predicates *mieru* and *omoeru* contain overt realizations of this non-active voice: the *-e* morpheme (Akira Watanabe, p.c.).

3.   Reflexive Voice

3.1.   Subject? Voice?

To build a new approach, let us consider two generalizations

- ◆ First generalization: **LSOR requires the antecedent of binding to be the subject both at S-structure *and* D-structure (Storoshenko 2009, Sportiche 2010)**[4]

  - ▸ <u>Being a D-subject is insufficient</u>: A thematic subject of a passive cannot license LSOR

    (10) *Pierre se$_i$ sera   présenté   par Jean$_i$ [Sportiche 2010:(8c)]
         Pierre **LSOR** perf.aux.3s.REFL introduced   by   Jean
         Intended: 'Pierre will be introduced by Jean$_i$ to himself$_i$.'

  - ▸ <u>Being a S-subject is insufficient</u>: A derived (grammatical) subject in a passive cannot license LSOR

    (11) *Tu$_i$ te$_i$ seras   décrit   par ta   femme   [Kayne 1975:(91a)]
         You **LSOR** perf.aux.2s.REFL described   by   your wife
         Intended: 'You$_i$ will be described to yourself$_i$ by your wife.'

- ◆ Second generalization: Grammatical voice is what controls whether the S-subject is also the D-subject (Sailor and Ahn 2010)

Taking these two generalizations together, LSOR must depend on a specific grammatical voice

- ◆ **⎡Proposal⎤**: **LSOR and its effects are derived by a special grammatical voice, REFL**

  - ▸ The idea of a reflexive grammatical voice has a long history in philology

  - ▸ Reflexive verbal morphology and morphology for other grammatical voices (e.g. Passive, Medio-passive, Middle, Antipassive, etc.) overlap in a many languages (e.g. Geniušienė 1987, Lidz 1996)

"...the status of [reflexive verbs] with respect to voice is theory dependent in the sense that **it depends on the definition of voice**..."   (Geniušienė 1987:10)[5]

- ◆ Let us now turn to a formal definition of voice

- ◆ Syntactically, the **REFL Voice^0 is situated just outside the thematic domain**

  - ▸ Just as other grammatical voices, such as passive (e.g. Collins 2005, Gehrke and Grillo 2009, Harley 2013)

  - ▸ It is endowed with an EPP feature that attracts LSOR reflexive argument[6]

    (12)   VoiceP
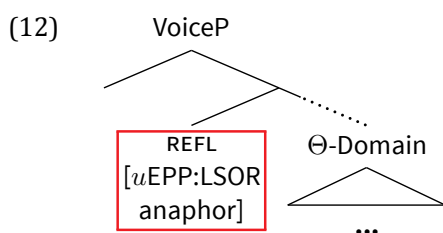
- ◆ Semantically, **REFL coidentifies two arguments**

  - ▸ The reflexive anaphor and the subject

  - ▸ REFL **is** semantic reflexivity

---

[4]By S-structure subject, I mean the XP in the grammatical subject position, whatever that position is (e.g. Spec,TP). By D-structure subject, I mean the XP in the highest thematic position, whatever it is in the particular clause.

[5]As this quote suggests, many different schools of thought use the term "voice", each with different conceptualizations of it. Even within modern generative syntax, this term is used in very different ways: compare the Austronesian 'voice' (e.g. Pearson 2005), the external argument introducer 'voice' (e.g. Kratzer 1996), the locus of passive auxiliary *be* 'voice' (e.g. Bjorkman 2011), etc. This conceptualization differs from all of these, while sharing core properties with each of them as well.

[6]In this proposal, the REFL Voice head is what requires its feature to be checked by the LSOR anaphor. However, it could just as easily be a feature of the LSOR anaphor that needs to be checked by REFL Voice – or it could be that both have features, and each needs to be checked by the other.
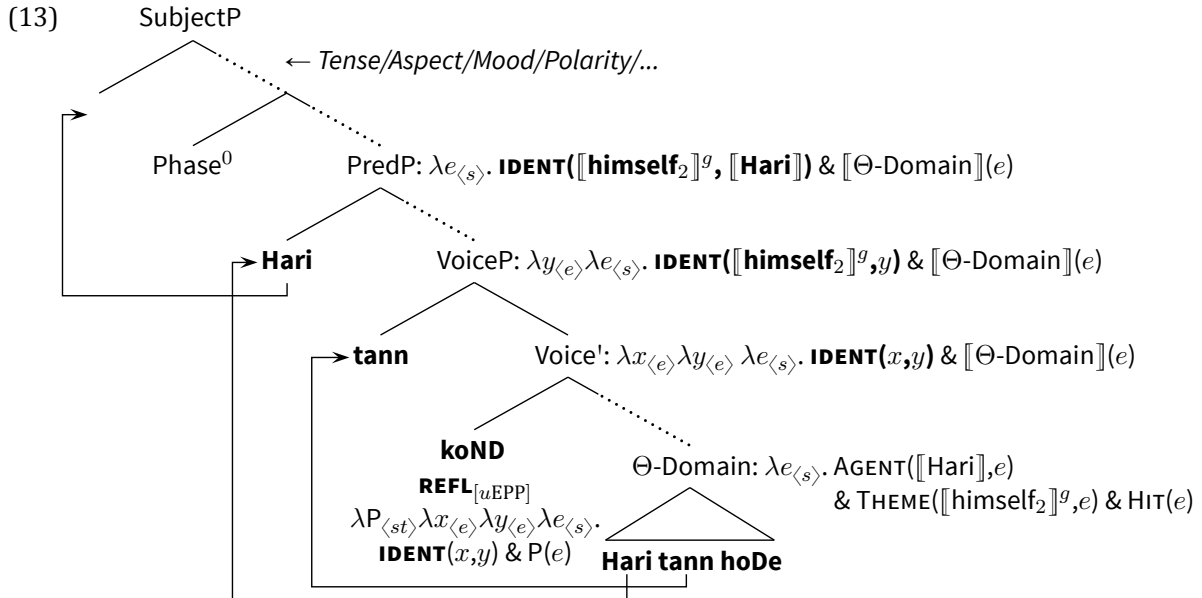
3.2.   A Derivation

To see how this works, we will run through the (relevant portion of the) syntactic derivation for (9a):

(9a)   hari   tann-annu   hoDe-du-**koND**-a   [Kannada, Lidz 1996]
        Hari   self -ACC   hit   -PP-**LSOR**-3SM
        '*Hari hit himself*'

◆   Recall that **-koND** is the LSOR suffix, and *tann* is the LSOR anaphor, which must be bound by *Hari*

The derivation proceeds as follows:

(13)   SubjectP

◆   *Hari* and *tann* are first merged in their thematic positions within the Θ-Domain

◆   ***tann* moves to VoiceP** from its thematic position, to check REFL's EPP feature, which requires an LSOR anaphor in its specifier

   ‣   In VoiceP, *tann* composes with the identity function

   ‣   Note that the anaphor *tann* behaves semantically as a simple pronoun

     ↳   Consistent with the idea of Lees and Klima 1963 that the difference between *himself* and *him* is only a formal/syntactic one (see also Hornstein 2001)

     ↳   This (correctly) allows the morphological shape of the anaphor in LSOR to be the same as a pronoun (e.g. Old English, Romance 1st/2nd person, etc.)[7]

◆   *Hari* moves from its thematic position to the small-clause subject position: Bowers 1993, 2001's PredP[8]

   ‣   In this position, *Hari* is semantically local to the identity function, and composes with it

◆   **It could not be the case that any other two constituents compose with the identity function** – nothing else occurs in a high enough position

   ‣   If the predicate in the Θ-Domain were a three place predicate, only the anaphor and the subject would move out to VoiceP and PredP, respectively, to saturate the identity function's lambdas

◆   Though hierarchically superior to the subject in VoiceP, the anaphor is not attracted to PredP/SubjectP.

   ‣   Because the anaphor is not the kind of constituent that can be attracted to PredP/SubjectP (in terms of grammatical category/features)

   ‣   Or maybe because it is no longer an 'active' goal (all its features are checked; Chomsky 2000).[9]

---

[7]In fact, it might be that the *-self* morpheme in English is the lexicalization of the REFL head. This is possible, but (for word order reasons) requires a syntax much more complicated than I have the space to argue for. See Ahn (2015) for more discussion.
[8]Harwood 2013 provides additional evidence of a phase-internal position for subjects, in analyzing Transitive Expletive Constructions.
[9]This is certainly related to the Anaphor Agreement Effect, as laid out by Rizzi (1990) and Woolford (1999).

byronahnætbudatedu

Some notes on the derivation in (13):

- ◆ Anaphors (such as *tann*, and *himself*) are **semantically interpreted as a simple pronoun**
  - ▸ They are not functions that take their sister as an argument (but see Appendix A.5)
  - ▸ As with any pronoun, a contextually-specified assignment function, g, determines its reference:
    $$\llbracket \text{himself}_2 \rrbracket^g = g(2)$$
- ◆ Essentially, **the IDENT function constrains the assignment function**, g
  - ▸ In such a way that the assignments of its two arguments are identical[10]
- ◆ Syntax feeds semantics cyclically, in such a way that **movement can feed semantic operations**
  - ▸ Semantics crucially depends on syntax, and semantic computations happens regularly at small intervals during the building of the syntactic structure (e.g. Uriagereka 1999)
  - ▸ "Any semantic object or operation on such objects has to have a correlate in the syntax, an expression or operation that triggers it. And conversely, all expressions and ***all structural operations in the syntax have to have a semantic correlate***. Thus the autonomy of syntax is limited." (Stokhof 2006:2067, emphasis mine)
  - ▸ **Semantic objects can compose with multiple semantic functions** by (syntactic) movement
    - ↳ The subject and anaphor each composes with its thematic licenser (before movement) and the IDENT function (after movement)
    - ↳ This isn't novel: a movement theory of control (e.g. Hornstein 2001), a movement theory of possessor dative constructions (e.g. Lee-Schoenfeld 2006), etc. rely on this too.
    - ↳ (But see Appendices A.4 and A.5 for alternatives)

There are only two main components of this LSOR derivation

- ◆ (They may be formalized in different ways or in different frameworks[11])

> **THE CORE UNDERPINNINGS OF LSOR**
>
> (i) **a unique Voice** for reflexivity, and
> (ii) **an anaphor that moves** to VoiceP

3.3. Solving the Subject-Orientation Puzzles

The syntax-semantics interface **solves our Naïve Subject-Orientation Puzzle**

- ◆ The LSOR anaphor will need to be identical to the subject, due to where each of them is merged
  - ▸ As we saw, only the subject occurs in a position where it can saturate the second of IDENT's arguments
  - ▸ Binding between e.g. a direct object and an indirect object cannot employ REFL

Additionally, with REFL as a type of Voice, **our Informed Subject-Orientation Puzzle is also solved**

- ◆ Derived subjects are ruled out as licensers of LSOR
  - ▸ They require some other (non-Active, non-REFL) Voice to become subject (Sailor and Ahn 2010)
  - ▸ Any other Voice is in complementary distribution with REFL w.r.t. merging in VoiceP[12]

---

[10]However this constraint is defined, it is loose enough that a proxy and its referent can be deemed as identical, since LSOR marking may occur with proxy interpretations, at least in some languages. There may be crosslinguistic variation on this point.

[11]Other frameworks/assumptions can be used to cover the same range of data. See the appendix and Ahn 2015.

[12]Alternately, there could be multiple syntactic loci of grammatical voice – this would open the door to the possibility of Reflexive voice (and all its effects) being compatible with other grammatical voices. This would predict the possibility of the grammatical effects multiple voices in a single clause (contra e.g. Sailor and Ahn 2010). And since reflexive has been found to be excluded the

- The reflexive argument **must move to VoiceP** for the derivation to converge[13]
    - This requires that it not be merged in an island not containing VoiceP, even in languages where there is no obvious movement (cf. 7)

> **THIS REFL VOICE^0 DERIVES LSOR, DUE TO:**
>
> (i) its **selectional properties**,
> (ii) its **structural height**,
> (iii) **where subject and anaphor occur** in the derivation, and
> (iv) **semantic composition**

Since REFL is responsible for LSOR and its properties:

- UG does not need to make any statements on non-derived subjecthood to derive these facts
- Instead it can just rely on the locality-constrained architecture of Grammar

4.   LSOR Across Languages

This derivation of LSOR predicts some related generalizations on how LSOR can be realized, across languages.

- There is great variety in 'strategies' for encoding LSOR across languages
- So much so, that it almost seems like there are no constraints, leading us to one of the questions we started with

> **TYPOLOGICAL QUESTION**
>
> What is the range of possibilities for marking LSOR? Are there constraints on what can mark it?

Broadly speaking, the answer for this question is as follows:

> **THE MAIN TYPOLOGICAL FINDING**
>
> **Constraint on Possible Exponents of LSOR**
> LSOR's morphosyntactic exponents are limited to Voice^0 and its selectional relatives.

- More specifically, the variation can be understand as ***surface variations*** **that depend on the same structural base**:
    - LSOR derivations involve two principal constituents:
        ↳   the LSOR anaphor and the REFL Voice^0
        ↳   Each of which could be overt or be silent.
    - Additionally, the movement of the anaphor may have obvious effects on surface word order, or it could not.

---

possibility of Passive and Reflexive Voice^{0}s in a single clause, if there are multiple loci for Voices, selection or some other existing mechanisms would have to exclude the Reflexive-Passive combination (at least in languages like those investigated thus far).

[13]This movement takes place in the narrow syntax; it is not LF-movement. See Appendix.

byronahnætbudatedu

This leads in principle to 6 logically possible basic types of languages

♦ Each of these languages is attested, and all languages can be classified in this way:

(14)

		LSOR anaphor overt		LSOR anaphor silent	
		mvt not obvious	**mvt obvious**	**mvt not obvious**	**mvt obvious**
REFL overt		Kannada	Greek	Finnish, Kharia	*logically impossible*
REFL silent		English, Japanese	French, Czech	Shona, Dogrib	*logically impossible*

Basic Typology of LSOR

Beyond these basic types of languages, further variation is predicted:

♦ By potential homophony between:

▸ REFL and other Voices, or

▸ the paradigms for LSOR anaphors and other anaphors

♦ Also by other interactions between REFL Voice and the other constituents that are in (indirect) selectional relationships with VoiceP

▸ e.g. auxiliary, agreement, and aspectual projections

4.1.   LSOR and Reflexive Voice Affixes

Across languages, LSOR does not pattern uniformly as either active or non-active

♦ This is predicted: LSOR is controlled by a unique grammatical Voice, but not every grammatical Voice requires its own morphological paradigms (explicitly shown in Alexiadou and Doron 2012)

▸ Modern Greek uses the same non-active voice paradigm for middles, passives, and reflexives[14] (Embick 1998, Alexiadou and Doron 2012)

(15)   a.

o	Janis	diava**se**		to	vivlio	[Greek Active]
the	John	read.**ACT**.PFV.PST.3S		the	book	

'*John read the book*'

b.

afto	to	vivlio	diavaz**ete**		efkola	[Greek Middle]
this	the	book	read.**NACT**.IPFV.NPST.3S		easily	

'*This book reads easily*'

c.

afto	to	vivlio	diavast**ike**		xtes	[Greek Passive]
this	the	book	read.**NACT**.PFV.PST.3S		yesterday	

'*The book was read yesterday*'

d.

i	Maria	afto-katastref**ete**	[Greek Reflexive]
the	Maria	**self**-destroy.**NACT**.IPFV.NPST.3S	

'*Maria destroys herself*'

♦ Other languages divide up Voice morphology differently

▸ Consider this tiny 3-language typology of $Voice^0$s:[15]

(16)

	PASSIVE Voice^0	**MIDDLE Voice^0**	**REFL. Voice^0**	**ACTIVE Voice^0**
English	non-act. morph.	act. morph.		
Greek	non-act. morph.			act. morph.
Kannada	pass. morph.	?	refl. morph.	act. morph.

Voice^{0}s and Their Morphological Realizations on the Verb

---

[14]Lexical reflexives do not employ an *afto-* anaphor, but still use non-active voice morphology. Perhaps lexical reflexives in Greek involve a different REFL Voice (this can be motivated by semantic and morpho-syntactic differences between lexical reflexive and productive reflexive strategies; see e.g. Moulton 2005.). Or perhaps lexical reflexives employ a second kind of anaphor, which could have a unique phonological form (possibly silent) and which can only be used with certain predicates (as a sort of phrasal idiom). It is possible that both proposals are right: there is this second REFL which selects this second (silent) anaphor.

[15]The way this table is set up might implicate a kind of linear continuum of voices, with Passive and Active being diametrically opposed. This implication need not hold; e.g. Voice^{0}s might be better described along multiple dimensions, and a linear representation based solely on "activity" is not adequate. (i.e. It is not clear how many features ought to be used to define Voice.)

▸ This table is meant to demonstrate that there can be syncretism: **LSOR markers can also mark other grammatical functions**[16] (e.g. Geniušienė 1987, Lidz 1996)

Crucially, reflexive-marking verbal affixes always indirectly constrain possible antecedents of binding in the _same_ way

(17)   **Generalization on Reflexive Verbal Affixes**
       If a verbal affix is used to mark reflexivity, the local subject must be the antecedent of binding.

◆ **This is predicted because REFL Voice is what controls LSOR**

For this reason, **using a special Voice affix for reflexivity is limited** in exactly the same ways that we have seen LSOR to be limited

◆ For example, the Greek non-active voice morphology is impossible when the reflexive anaphor is trapped in an island, or is not subject oriented:

(18)   Greek[17]

   a.   afto-sistinome   sti   Maria
        self-introduce.NACT.1S to.the Maria
        "I introduce myself to Maria"

   b. $^?$sistisa   [ton eafto mu ce   ton Yani] sti   Maria   [Island]
        introduced.ACT.1S   myself   and the Yani   to.the Maria
        "I introduced Yani and myself to Maria"

   c. $^{?18}$sistisa   tin Maria ston eafto tis   [Object Oriented]
        introduced.ACT.1S   the Maria to.herself
        "I introduced Maria to herself"

   ▸ To be clear, (18b-c) are ungrammatical with a non-active voice and/or the _afto-_ prefix

◆ Additionally, the Kannada Reflexive voice suffix cannot co-occur with the Passive suffix:

(19)   Kannada (Lidz 1996:47)

   a.   rama tann-inda vancis -al -paTT   -a   [Passive Voice]
        Rama self -INSTR deceive-INF-PASS.PST-3S
        'Rama was deceived by himself.'

   b.   ⋆rama tann-inda   vancis -**koLL** -al -paTT   -a
        Rama self -INSTR deceive-REFL-INF-PASS.PST-3S
        Intended: 'Rama was deceived by himself.'

4.2.   LSOR and Anaphors

In some languages, the LSOR anaphor is differentiated from other anaphors

◆ The subject oriented anaphor in Tɔrɔ Sɔɔ is distinct from one which is object oriented:

(20)   Tɔrɔ Sɔɔ (Culy et al. 1994:329)

   a.   Anta [Omar ne] [sa   unɔ   mɔ] sɔaa be   [Subject Oriented]
        Anta   Omar OBJ   word **LSOR** POSS   talked PST
        'Anta$_1$ talked to Omar$_2$ about herself$_1$/*himself$_2$.'

   b.   Mariam [Omar ne] [ku   wo mɔ   sa] sɔaa be   [Object Oriented]
        Mariam Omar to   head 3S POSS word   talked PST
        'Mariam$_1$ talked to Omar$_2$ about himself$_2$/*herself$_1$.'

---

[16]In some languages LSOR marking patterns with actives to the exclusion of other voices; this is exactly what's predicted if REFL were a unique voice involved in all of these languages

[17]Thanks to Nikos Angelopoulos for the judgments

[18](18c) is highly context dependent; my informants found it did not find it good until explaining a context where Maria has amnesia.

byronahnætbudatedu

The following table shows some of the ways various anaphors can be realized within and across languages:

(21)

	French	**Japanese**	**Czech**	**English**	**Tongan**
LSOR anaphor	se	jibunjishin	se	themselves	kianautolu
Non-LSOR anaphor	eux-mêmes	$\left\{\begin{array}{l}\text{jibun}\\\text{karejishin}\end{array}\right\}$	sebe	themselves	kianautolu
Non-Refl. Pronoun	eux	karera	je	them	kianautolu

Variation in 3Pl Pronominals Across a Selection of Languages

- Just as with REFL Voice, there can be homophony across categories of anaphors

**Homophony may abound, but it is constrained by the categories of anaphors available in the Grammar**

- There is an category for LSOR, but no category for local direct object oriented reflexivity.

This predicts the following crosslinguistically-supported generalization:

(22)   **Generalization on LSOR and Reflexive Anaphors**
       If an anaphor requires its antecedent to have a certain grammatical role, then that grammatical role is
       that of the subject.

  ‣ There are anaphors require their antecedent to be the subject, but no anaphors require their antecedent to be, e.g., a direct object[19]

- In the domain of local subjects, this generalization is derived with **REFL's ability to place selectional restrictions on the anaphor it selects**[20]

  ‣ REFL selects a certain kind of anaphor in its specifier; this results in an anaphor with a different featural make-up, and thus a possibly different form

      (23)   VoiceP

          ANAPHOR
          [uLSOR]   REFL
                    [uEPP:LSOR]
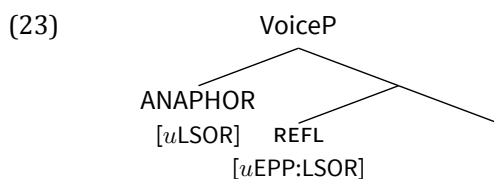
An immediate benefit of this selection-based analysis for unique LSOR forms:

- The non-LSOR anaphor is predicted to be the same as the anaphor that occurs in islands while being local-subject bound

  ‣ French shows this clearly: anaphors in an island and object-bound anaphors make use of the same paradigm

      (6b) Lucie a   compté [island cinq filles en dehors d' **elle-même**]
            Lucie PERF   counted   five   girls   outside   of herself
            'Lucie counted five girls outside of herself.'

      (24) la   psychiatrie a   révélé   Jean à **lui-même**   [French]
            the psychiatry   PERF   revealed Jean to himself
            'Psychiatry revealed Jean to himself.'

- Because neither object-oriented anaphors nor those in islands will have the [uLSOR] feature[21]

---

[19]Non-LSOR anaphors do not require any specific grammatical role of their antecedent. All non-LSOR anaphors investigated thus far are compatible with antecedents from a range of grammatical roles – even subject antecedents (under certain conditions).

[20]Left open is the question of how long-distance subject orientation is derived, and how subjecthood is formalized. Perhaps subjecthood in long-distance SOR is similar local SOR, in that it is incidental and is the consequence of something else.

[21]Of course, object-oriented anaphors and those in islands could differ featurally allowing them to be distinct lexical items. It is not clear at this time what feature would distinguish them, but if such a feature can be shown to exist, then we would predict lexical differences between the two of them as well.

4.3. LSOR and Other Exponents

In some languages, there are morphological exponents beyond the anaphor and a voice morpheme that are sensitive to LSOR

- e.g. agreement morphemes (Lakhota), Tense/Aspect/Mood morphemes (Kharia), and aspectual auxiliaries (French/Italian)
    - ▸ Lakhota Agreement
        - (25) a. $\boxed{\text{m}}$-ik- pázo   [REFL]
            1s- REFL-display
            'I displayed myself.'
        - b. $\boxed{\text{wa}}$-pázo   [ACT]
            1s- display
            'I displayed (it).'
    - ▸ Kharia TAM marking
        - (26) a.   yo -**Dom**-$\boxed{\text{ki}}$ -kiyar   [REFL]
            see-**REFL**-PST-DU
            'The two of them saw themselves'
        - b.   lebu -ki -te   yo -$\boxed{\text{yo'}}$-j   [ACT]
            person-PL-OBL see-PST -1SG
            'I saw the people'
    - ▸ French auxiliary selection
        - (27) a.   Sa femme **s'** $\boxed{\text{est}}$ décrit(e)   à Jean   [REFL]
            His wife   **LSOR**   PERF describe.PART to Jean
            'His wife described herself to Jean.'
        - b.   Sa femme l' $\boxed{\text{a}}$ décrit(e)   à Jean   [ACT]
            His wife   3.ACC PERF describe.PART to Jean
            'His wife$_1$ described him/her/it$_2$ to Jean$_3$.'

- Importantly, these non-voice/non-anaphor morphological alternations for reflexivity are not present when LSOR is otherwise ruled out
    - ▸ i.e. when the anaphor and subject are separated by an island, when object oriented, or in the presence of a non-REFL voice

Moreover, in all of these languages, **voice has an independent relationship with the relevant paradigm**

- Lakhota uses different agreement paradigms for active and non-active clauses
- Kharia has different TAM markers for active and non-active clauses
- French passives have unique auxiliaries

This is evidence that agreement, aspectual, and auxiliary systems are selectionally related with Voice[22]

- Otherwise it could not impose selectional restrictions on them
    - ▸ (This selectional relationship may be indirect)

This leads to a generalization on what can be a marker for LSOR:

(28)   **Generalization on LSOR and Other Morphosyntactic Patterns**
        If grammatical voice may effect morphological alternations in a certain paradigm (e.g. the agreement paradigm), then LSOR may also effect alternations in that paradigm.

---

[22]Further paradigms that reflexive Voice is in selectional relationships with include participial projections (Kannada LSOR affix -*koND* requires a verb in the past participle form; Lidz, p.c.) and aktionsart projections (Greek *afto-* and non-active voice has certain aspectual restrictions; Alexiadou 2012).

This provides **very strong evidence that reflexivity is formally represented in the same way as voice** (i.e. as a Voice^0).

◆ Because the relevant LSOR-sensitive morphosyntactic phenomenon is sensitive to grammatical voice more generally.

4.4. Crosslinguistic Summary

LSOR clauses may resemble actives, passives, or neither along several dimensions:[23]

▸ e.g. voice morphology, agreement morphology, TAM markers, and auxiliary selection

(29)

LSOR clauses...	...pattern like actives	...pattern like non-actives	...pattern distinctly
Voice morph.	English	Greek	Kannada
Agr. morphology	Chickasaw	Lakhota	Shona
TAM Markers	Mandinka	Kharia	?
Aux. selection[24]	Spanish	French	Sye(?)

LSOR effects on Morpho-Syntactic Paradigms

Two important restrictions about this array of LSOR markings

◆ In these languages, **all these morphological paradigms** (voice marking, agreement, TAM marking, and auxiliary selection) **are sensitive to voice, more generally**

◆ All the morpho-syntactic effects of reflexivity in (29) are predicted to be limited in the same ways that LSOR is restricted (i.e. §3)

◆ For example, the Shona *zvi* reflexive agreement marker cannot occur when the voice of the clause is passive (Storoshenko 2009:§5.1)

▸ Compare the grammatical, non-passive (30) with the ungrammatical passive (30):

(2) Mufaro   a-   ka- zvi- bik -ir -a   mbudzi   [Storoshenko 2009:(23)]
     Mufaro.1 SUBJ.1-PST-**LSOR**-cook-APPL-FV goat.9
     '*Mufaro$_i$ cooked the goat$_j$ for himself$_{i/*j}$.*'

(30) ⋆A-   ka- zvi- bik -ir **-w** -a
       SUBJ.1-PST-**LSOR**-cook-APPL-**PASS**-FV
       Intended: 'She was cooked for herself'

4.5. Typological Conclusions

There is a lot of variation in marking LSOR, but it is still limited

(17) **Generalization on Reflexive Verbal Affixes**
      If a verbal affix is used to mark reflexivity, the local subject must be the antecedent of binding.

---

[23]This division of reflexive as its own Voice distinct from Active or Passive (or Unaccusative) can explain why reflexives vary across languages, with regard to being treated like transitives (Active) or intransitives (Middle/Unaccusative/Passive/...). Specifically, this table addresses why, in Spanish-type languages, reflexives exhibit an active-like pattern, while in French-type languages, reflexives exhibit an unaccusative-like pattern. (The latter has contributed to the conclusion that French reflexives are unaccusative (Sportiche 1990); see Sportiche (2010) for specific criticisms against this.)

[24]Auxiliary selection in French is sensitive to reflexivity only in the perfect. All that is indicated by this row is that auxiliary selection *in some part of the grammar* is impacted by reflexivity. As for Sye, it is said to have reflexive auxiliary *ehpe* (Crawley 1998), I put a question mark here for two reasons. First, and more importantly, the data in Crawley's grammar is inadequate to argue either way whether *ehpe* is restricted to LSOR contexts or not. All the sentences given are simple non-passive mono-transitives, such as:

i.   y-   ehpe   n- ochi   [Crawley 1998:127]
      3SG:DISTPASTdo.reflexively NOM-see:3SG
      'He/She saw himself/herself'

Second, it is not clear how grammatically similar *ehpe* is to more familiar auxiliaries; for example, the verbal complement is glossed as a kind of nominalization in Crawley (though this is, of course, an analysis).

(22)   **Generalization on LSOR and Reflexive Anaphors**
          If an anaphor requires its antecedent to have a certain grammatical role, then that grammatical role is
          that of the subject.

(28)   **Generalization on LSOR and Other Morphosyntactic Patterns**
          If grammatical voice may effect morphological alternations in a certain paradigm (e.g. the aspectual
          paradigm), then LSOR may also effect alternations in that paradigm.

A single solution, resulting from principles of locality and selection, is the following constraint:

> **THE MAIN TYPOLOGICAL FINDING**
>
> **Constraint on Possible Exponents of LSOR**
> LSOR's morphosyntactic exponents are limited to $Voice^0$ and its selectional relatives.

◆   Voice's selectional relatives include the anaphor, aspectual auxiliaries, agreement markers, etc.

In addition, morphophonology will also add a level of variation

◆   e.g. any marker may be overt or silent

◆   Even if overt, it homophony/syncretism may obscure its identity as an LSOR marker

Finally, each of these exponents may impose their own syntactic effects (e.g. REFL-triggered anaphor movement)

◆   But such effects may not always be readily apparent (e.g. covert movement)

> **Sidebar on Word Order and Reflexive Movement**
>
> ◆   We have no *prima facie* reason to expect that the movement **would** affect word order
>
> ◆   That is, even if the **LSOR** object anaphor *appears* to be in the same linear position as other objects, movement may have still taken place
>
>   ▸   Descriptively, some movements requires other movement(s)
>
>   ↳   Recall Holmberg's Generalization(for a summary, see e.g. Vikner 2006)
>
>   ▸   It could be that the reflexive movement also requires another/other movement(s)
>
>   ↳   And the combination of both/all of the movements ends up resulting in an unchanged string (i.e. covert movement can occur in the narrow syntax; cf. Kayne 1998)
>
> ◆   To be clear, movement (and, in our case, anaphor movement for LSOR) can be string-vacuous
>
>   ▸   but may still be detectable, e.g. via prosody and/or interpretation

All of this variation is predicted by the Borer-Chomsky Conjecture (Baker 2008)

◆   **All variation is in lexical items** and their morphophonological properties

> **VARIATION AT THE SURFACE**
>
> All types of variation are *surface* effects
>
> ◆   All the syntactic properties will remain constant across languages, because of UG
>
> ◆   (**i.e. the height of REFL, and how its denotation necessitates movement**)

Where there was once chaos we now have order; this theory helps us understand...

- ...how surface manifestations of **LSOR** can vary

- ...why **LSOR** (but not non-LSOR) can be encoded with unique verbal morphology

- ...why **LSOR** may have verbal and pronominal exponents (as well as others)

5. LSOR in English

What about English?

- Taking a closer look at LSOR and non-LSOR contexts in English, we will uncover *prosodic* differences between LSOR and non-LSOR

English has (at least) two kinds of reflexive anaphors, which differ in terms of their prosody

- One behaves (a priori) "exceptionally" in its prosody

  ‣ They tend to "avoid" phrasal stress where other constituents would "attract" it

  ‣ They also "attract" focal stress where other constituents would not[25]

- The other behaves (a priori) "normally" in its prosody

We will see that **the former only occurs in LSOR contexts**

- The "exceptional" prosodic properties emerge from LSOR syntax and normal rules of mapping prosody onto syntactic inputs

5.1. Nuclear Stress Rule and Reflexives

In out-of-the-blue contexts[26], the most prominent phrasal stress tends to fall on the rightmost word of the sentence, in English (Chomsky and Halle 1968, among many others)

- This is formulated as:

  (31) **Linearization-Based Nuclear Stress Rule** (English; Chomsky and Halle 1968)
        The rightmost primarily-stressed vowel in a domain receives the phrasal stress.

  ‣ (For examining the data, this generalization will suffice; however more recent work (Cinque 1993, Zubizarreta 1998, *inter alia*) shows syntactic embedding is more critical. We will come back to this.)

- The following data is consistent with this NSR

  (32) Q: What happened at work today?
        A1:   Mark told Maxine about *Sára*.
        A2: #Mark told *Maxíne* about Sara.

  (33) Q: Tell me something about each of the characters on this show.
        A1:   Ms. Adler likes *Ráven*.
        A2: #Ms. Adler *líkes* Raven.

  ‣ (Phrasal stress is marked with underlined italics and an acute accent)

- Note that these other prosodic contours are possible, but they require certain "presuppositions" in a way that the broad-focus interpretation does not[27]

Similarly, in focus contexts, the rightmost word of the focused phrase bears the focus stress

- This is because, as a rough estimate, focal stress for a focused constituent attaches to the phrasal stress of the constituent (e.g. Chomsky 1970, Jackendoff 1972)

---

[25]For time, we will not discuss this. See Appendix A.7.
[26]Such contexts can be elicited by questions like *what happened?* (Zubizarreta and Vergnaud 2006)
[27]See Büring 2013 for why "presuppositions" is in scare-quotes.

(34)   Q: What does the company president want to do?
        A1:   The company president wants to [promote _Natália_]_F_.
        A2:   #The company president wants to [_promóte_ Natalia]_F_.

(35)   Q: What made Logan angry?
        A1:   [Nate cloning _Jéan_]_F_ made Logan angry.
        A2:   #[Nate _clóning_ Jean]_F_ made Logan angry.

◆   Again, the infelicitous prosodic contours are possible, but only with certain "presuppositions"

Reflexive anaphors seem to present a problem for the NSR

◆   Below a reflexive anaphor is the rightmost word that NSR would normally assign phrasal stress:

(36)   Q: What happened at work today?
        A1:   #Mark told Maxine about **_himsélf_**.
        A2:   Mark told _Maxíne_ about **himself**.

(37)   Q: Tell me something about each of the characters on this show.
        A1:   #Ms. Adler likes **_hersélf_**.
        A2:   Ms. Adler _líkes_ **herself**.

(38)   Q: What does the company president want to do?
        A1:   #The company president wants to [promote **_hersélf_**]_F_.
        A2:   The company president wants to [_promóte_ **herself**]]_F_.

(39)   Q: What made Logan angry?
        A1:   #[Nate cloning **_himsélf_**]_F_ made Logan angry.
        A2:   [Nate _clóning_ **himself**]_F_ made Logan angry.

◆   Critically, **the anaphor doesn't bear phrasal stress in any of these contexts**

> **PHRASAL STRESS PUZZLE**
>
> Why do reflexive anaphors behave differently with regard to phrasal stress assignment?

5.2.   Possible Accounts?

Previous discussion of material that is exceptional for the phrasal stress rule have proposed that, as a rule, anaphors do not bear phrasal stress

◆   This is encoded by stipulating that anaphors and some larger class of lexically/syntactically/semantically defined items are phrasally **extrametrical** – i.e. ineligible for phrasal stress:

(40)   "…anaphoric and indefinite[28] elements are not assigned primary stress…"

                                                                                                                (Bresnan 1971:258)

(41)   "…defocalized and anaphoric constituents (as well as functional categories) are metrically invisible
        with respect to the NSR…"   (Zubizarreta 1998:20)

In other words, past discussions on the extrametricality of reflexive anaphors have reduced the issue to **simply exceptionality**, with regard to the calculation of stress

◆   First, there is an architectural issue

    ▸   These lines of thinking presuppose that there is some way in which the phrasal stress assignment rule is able to reference LF and/or phrase-categorial properties

    ▸   Architecturally, it is not clear that phonology should have access to this much information (See Ahn In Preparation for a discussion)

---

[28]Here Bresnan uses the term 'indefinite' to mean 'indefinite pronouns', such as _some_ in _The boy bought some_.

◆ Moreover, these lines of thinking have some empirical problems

  ▸ Some might say unstressed reflexives are an exception because they are a sub-type of pronouns

    ↳ Because pronouns often avoid phrasal stress as well:

      (42) Q: What will happen at the party?
            A1:   Ken will try to _embárrass_ you.
            A2:   Ken will try to _embárrass_ himself.

    ↳ However, **unstressed reflexives and unstressed pronouns have different distributions**

    ↳ First, unstressed reflexives occur in places that unstressed pronouns cannot:

      (43) Q: Maria showed herself to Bob.
            A: No, she showed _Jóhn_ herself.

      (44) Q: Maria$_j$ showed her$_k$/it to Bob.
            A: ★ No, she$_j$ showed _Jóhn_ her$_k$/it.

    ↳ Moreover, unstressed pronouns occur in places that unstressed reflexives cannot:[29]

      (45) Q: What happened in the kitchen?
            A1: $^?$Remy accidentally burned _Maríe_ and me.
            A2: $^\#$Remy accidentally burned _Maríe_ and himself.

    ↳ Whatever derives pronouns' avoidance of stress **is not entirely the same** as whatever derives reflexives' avoidance of stress

  ▸ Some discussions say unstressed reflexives are inherently 'given', and it is this givenness that makes them unstressed

    ↳ However, work on the way in which givenness influences phrasal stress placement has shown that givenness **can only do so via syntax** (Wagner 2006, Ahn In Preparation)

    ↳ Brief Overview: Wagner argues that Given material must (to the greatest extent possible) move to a position such that its sister is new information. (He call this 'relative givenness'.) Only this 'relatively given' material that has moved avoids phrasal stress.

So, these exception-based generalizations are both empirically insufficient _and_ theoretically problematic

◆ (For a more in-depth discussion, including a discussion of the theoretical problems, see Ahn 2015, In Preparation)

5.3.   Extrametricality is LSOR-Sensitive

Reflexives only behave exceptionally in LSOR contexts

◆ That is, the same restrictions on LSOR anaphors restrict where reflexive anaphors go "exceptionally" unstressed

  (46) LSOR Limitations on Apparently Exceptional Reflexives
        i.   They must have the grammatical subject as their antecedents
        ii.   They cannot appear in passive voice clauses
        iii. They cannot occur in an island that is smaller than a complete predicate
        iv.   They surface in only certain linear positions

  ▸ In other cases, they behave in the same way as R-expressions (which are used as a baseline below):

      (47) Q: What happened at work today?   **(subject orientation)**
            A1:   Mark told Maxine about Sára.   _baseline_
            A2:   Mark told Maxíne about **himself**.   _LSOR, exceptional stress_
            A3:   Mark told Maxine about hersélf.   _non-LSOR, normal stress_

---

[29]It has been proposed that weak pronouns move, deriving their prosodic weakness (Cardinaletti and Starke 1999, Wagner 2006). Given island data like (iA1), this could not predict _all_ cases of stress-avoidance by pronouns.

(48) Q: What happened at work today?   **(passive)**
      A1: Maxine was told about <u>Sára</u>.   *baseline*
      A2: Mark told <u>Maxíne</u> about **himself**.   *active, exceptional stress*
      A3: Maxine was told about <u>hersélf</u>.   *passive, normal stress*

(49) Q: Tell me something new.   **(islands)**
      A1: Ms. Adler likes <u>Ráven</u>.   *baseline*
      A2: Ms. Adler <u>líkes</u> **herself**.   *no island, exceptional stress*
      A3: Ms. Adler likes people like <u>hersélf</u>.   *island, normal stress*

(50) Q: What happened at the rehearsal?   **(linear order)**
      A1: The actors looked Cary <u>Gránt</u> up.   *baseline*
      A2: The actors <u>loóked</u> **themselves** <u>úp</u>.   *between V & Prt, exceptional stress*
      A3: The actors looked up Cary <u>Gránt</u>.   *baseline*
      A4: [#] The actors looked <u>úp</u> **themselves**.   *between V & Prt, exceptional stress is #*

◆   This difference in behavior in (50A4) is unexpected, and tells us about structural positions available to these exceptional reflexives

   ▸   Importantly, that the anaphor must occur between the V and the Prt in (50A4) is <u>not</u> due to phonological 'lightness'

   ▸   See Ahn 2012, 2015 for focused (i.e. heavy) reflexives with a certain intepretation that behave the same way.

5.4.   Formalizing a Structure-Based NSR

To reiterate, **restrictions on LSOR also restrict where anaphors can occur without phrasal stress**

◆   This requires syntax (and not linear position) to play a critical role in when reflexives do/do no bear phrasal stress

   ▸   Work of the past 20 years argues that the phrasal-stress assignment rule is sensitive to syntactic depth of embedding, not linearization (Cinque 1993, Zubizarreta 1998, Kahnemuyipour 2009, a.o.)

   ▸   It is also well established that phrasal stress is assigned cyclically (Chomsky and Halle 1968, Bresnan 1971, Halle and Vergnaud 1987, Cinque 1993, Zubizarreta 1998, Adger 2006)

◆   A formal definition of this phrasal stress assignment rule is given below:

(51)   **Depth-Based Nuclear Stress Rule**:
       The most deeply embedded[30] constituent in a Spell-Out Domain receives the phrasal stress.

   ▸   Note that (51) is given **without stipulations on the behaviors of reflexive anaphors**

   ↳   (In fact, without any stipulations based on lexical/syntactic/semantic classes; see Ahn In Preparation)

Let us consider how this works, abstractly

◆   In the example below, WP comprises a Spell-Out Domain, which the NSR in (51) takes as input

(52)

---
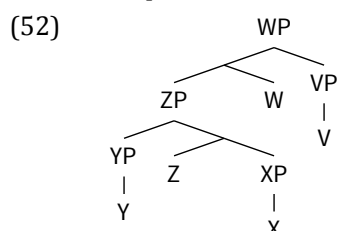
[30]A constituent is most embedded if (i) it merged directly on the path of complementation, and (ii) it doesn't c-command (all the copies of) any other constituent. See Appendix A.8.

byronahnætbudatedu

◆ (51) will place phrasal stress on X, even though it is not rightmost, because it is most embedded

Critically, because of this NSR's formulation, movement within a Spell-Out Domain to feed phrasal stress

◆ In (53), Y is most embedded

(53)   Spell-Out Domain
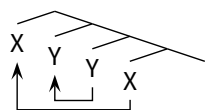
   ▸ Though there is a copy of X that is lower than Y, X is also higher than Y within the Spell-Out Domain

   ▸ (See Appendix A.8 for a specific definition of depth that allows this)

Thus, NSR is independent of linearization

◆ In English, deeply embedded elements tend to be rightmost, but not always

   ▸ e.g. certain adjuncts, "postpositions" like *ago*, etc.

◆ And so NSR may interact with independent principles of linearization in perhaps unexpected ways

   ▸ For example, (53) could be linearized YX if the movement of X spells out the lower copy of its chain (e.g. Fox and Nissenbaum 1999, Bobaljik 2002), but **stress would still fall on Y**

5.5. Deriving Reflexive Phrasal Stress Patterns

With two ingredients, we can derive all the prosodic patterns we've seen

① An NSR and linearization function that are independent of one another

   ▸ A structure-based approach to phrasal stress in which movement can feed the NSR

   ▸ A linearization operation which may spell out lower copies

② Our approach to LSOR anaphors

   ▸ LSOR anaphors move to VoiceP, when headed by REFL

Let's run through a derivation for an example where the LSOR anaphor is unstressed

◆ We will use the following example:

(54)   Q: What happened?
       A: Liz *high-fived* herself.

◆ First, the syntax as demanded by REFL VoiceP will be:

(55)   SubjectP
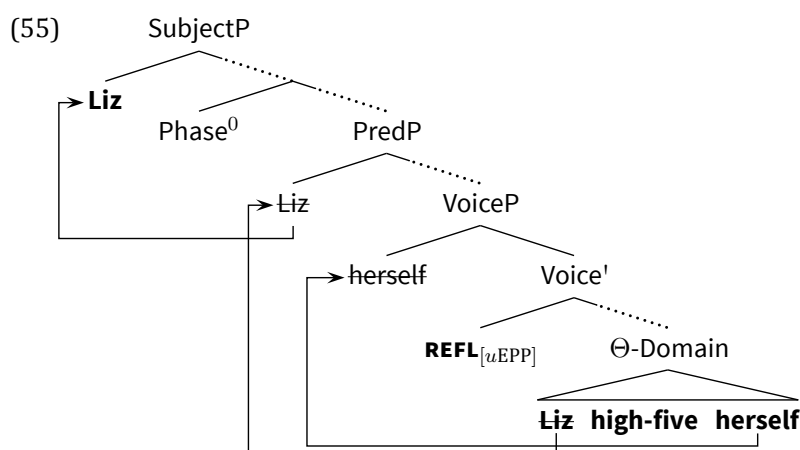
◆ In English, it would seem to be that this reflexive movement spells out the lower copy of the chain

   ▸ *herself* appears to be in the normal case/thematic position for direct objects

- ◆ But **evidence for this movement is still in the linguistic signal** – in the prosody
  - ▸ Because the reflexive does not bear phrasal stress, it must occur in a structural position that is higher than the normal object position
  - ▸ The fact that this movement feeds the phrasal stress placement adds support for:
    - ↳ **an NSR that operates on Spell-Out Domains** (e.g. Zubizarreta 1998, Legate 2003, Adger 2006)
   - ↳ **with VoiceP and the Θ-Domain in the same one** (e.g. Coon et al. 2011)

Now let's run through a derivation for an example where the non-LSOR anaphor is stressed

- ◆ In an example like (56), the anaphor is separated from VoiceP by an island boundary

  (56)   Q: What happened?
         A: Liz high-fived Pete and *hersélf*.

  - ▸ As such, *herself* cannot move to VoiceP, if REFL is merged

- ◆ Instead, REFL must not be merged, and *herself* will stay in-situ

  (57)
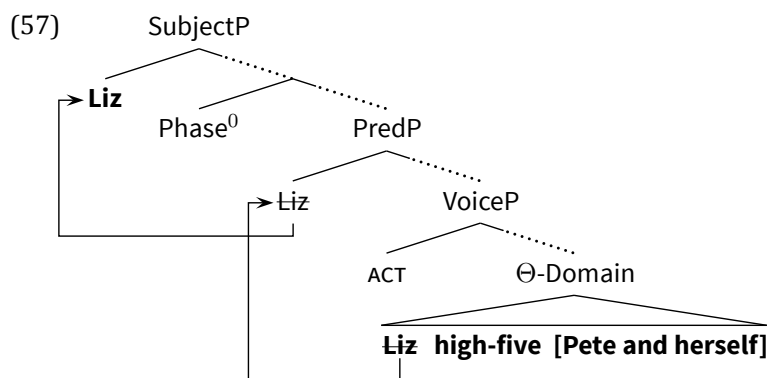
- ◆ In this position, *herself* is most embedded and bears phrasal stress

In this way, English anaphors avoid stress by moving to VoiceP in REFL Voice clauses

- ◆ When they don't move to VoiceP, they can attract stress as normal[31]
- ◆ We do not need (or want) a stipulation that anaphors are a member of a class of elements that avoid stress

---

SOLVING THE PHRASAL STRESS PUZZLE

The phrasal stress puzzle falls out from the cross-linguistic syntax of LSOR, and a well-motivated structure-based NSR

5.6.   A summary of English

Just like subject-orientation is a result of the syntax-semantics interface, these prosodic effects arise **from the same syntax** as it is interpreted at the syntax-phonology interface

- ◆ In other words, LSOR must be fundamentally syntactic, because only the syntax feeds the observable effects both in semantics and in prosody (and in morphology)
- ◆ Specifically, the observable prosodic effects are that, in LSOR contexts (where REFL Voice is merged), English reflexive anaphors exhibit the following behaviors:

---

[31]More on these generalizations is found in Appendix A.6.

(46) <u>Limitations on Apparently Exceptional Reflexives</u>
  i.   They must have the grammatical subject as their antecedents
  ii.   They cannot appear in passive voice clauses
  iii.   They cannot occur in an island that is smaller than a complete predicate
  iv.   They surface in only certain linear positions

Importantly, **reflexivity in English looks like reflexivity in many other languages** in that it differentiates LSOR from non-LSOR

◆ Generalizations governing prosodic exceptions are identical to generalizations governing LSOR markers in other languages

◆ It is just that English LSOR marking is less obvious than some other languages

6. Conclusions

LSOR, all its properties, and apparent variation emerge from what UG provides

◆ **The things relevant for LSOR that are given by UG:**

① **REFL Voice^0**

↳ Its formal properties determine <u>the two core parts necessary to derive LSOR</u>

❶ anaphors move to a reflexive VoiceP

❷ the semantic reflexivizer is associated with the reflexive VoiceP

② **The architecture of Grammar**

↳ LSOR exhibits the patterns that it does (within and across languages) simply as a result of locality of selection and the interfaces with syntax

◆ **Morpho-syntactic variation in LSOR-marking is solely due to lexical variation**

▸ The Chomsky-Borer Conjecture

▸ LSOR involves two lexical items (REFL and the moving anaphor)

↳ Either or both of which may (or may not) have unique exponents

↳ REFL can share its morpho-syntactic paradigms with other Voice^{0}s

▸ LSOR may be marked on any morphological paradigm, iff the associated syntactic projection is selectionally related to Voice^0

◆ Other types of variation can be found, such as the prosodic variation in English

▸ Because prosodic computation is run on syntactic structure

↳ (just like linearization is)

◆ **Subject-orientation is a core property of predicate-level reflexivization**

▸ It is not simply a special-case of normal binding conditions

▸ No specific constraints on antecedents need to be stipulated

↳ Subject-orientation emerges from the Grammar

▸ Languages that do not obviously mark LSOR (English) still employ REFL

↳ More careful investigation may be required to uncover its effects

7.   Open Questions

◆   What about other, non-LSOR reflexives?

  ▸   Long-distance (subject-oriented) reflexives

  ▸   Non-subject-oriented local reflexives

  ▸   Exempt reflexives?

◆   What is the underpinning of different grammatical voices sharing morpho-syntactic paradigms?

  ▸   Accidental homophony?

  ▸   Feature underspecification?

  ▸   Something else?

◆   What if a language seems to be an apparent counterexample to one of the generalizations about LSOR?

  ▸   Markers of LSOR may be homophonous with other elements

    ↳   In Swedish, there appears to be one set of anaphors for both local and long-distance subject-oriented reflexivity

  ▸   Not every language will lexically differentiate LSORs and non-LSORs

    ↳   Recall the case of English

    ↳   One might have to look more closely to find properties associated with REFL Voice^0

    ↳   But, once the properties of LSORs/REFL are identified, they could be used as a diagnostic for whether a subject is a derived subject

References

Adger, David. 1994. Functional heads and interpretation. Doctoral Dissertation, University of Edinburgh.

Adger, David. 2006. Stress and phasal syntax. lingBuzz/000255.

Ahn, Byron. 2011. Explorations of voice, identity and the self. Presented at Parallel Domains: A workshop in honor of Jean-Roger Vergnaud.

Ahn, Byron. 2012. External argument focus and the syntax of reflexivity. *Coyote Papers: Working Papers in Linguistics, Linguistic Theory at the University of Arizona* 20.

Ahn, Byron. 2015. Giving reflexivity a voice: Twin reflexives in English. Doctoral Dissertation, UCLA.

Ahn, Byron. In Preparation. There's nothing exceptional about the phrasal stress rule. Ms., UCLA.

Alexiadou, Artemis. 2012. Roots in transitivity alternations: afto/auto-reflexives. ms., University of Stuttgart.

Alexiadou, Artemis, and Edit Doron. 2012. The syntactic construction of two non-active Voices: passive and middle. *Journal of Linguistics* 48:1–34.

Bach, Emmon, and Barbara H. Partee. 1980. Anaphora and semantic structure. In *Papers from the Parasession on Pronouns and Anaphora*, ed. Jody Kreiman and Almerindo E. Ojeda, 1–28. Chicago Illinois: University of Chicago.

Baker, Mark. 2008. The macroparameter in a microparametric world. In *The limits of syntactic variation*, ed. T. Biberauer, 351–374. Amsterdam: John Benjamins.

Bittner, Maria. 1994. Cross-linguistic semantics. *Linguistics and Philosophy* 17:53–108.

Bjorkman, Bronwyn. 2011. BE-ing default: The morphosyntax of auxiliary verbs. Doctoral Dissertation, MIT, Cambridge, MA.

Bobaljik, Jonathan. 2002. A-chains at the PF-interface: Copies and covert movement. *Natural Language & Linguistic Theory* 20:197–267.

Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24:591–656.

Bowers, John. 2001. Predication. In *The handbook of contemporary semantic theory*, ed. Mark Baltin and Chris Collins, 299–333. Blackwell Publishing.

Bresnan, Joan. 1971. Sentence stress and syntactic transformations. *Language* 47:257–281.

Büring, Daniel. 2013. Syntax and prosody, syntax and meaning. In *The cambridge handbook of generative syntax*, ed. Marcel den Dikken, 860–895. Cambridge: Cambridge University Press.

Burzio, Luigi. 1986. *Italian syntax: A government-binding approach*. Dordrecht: Reidel.

Cardinaletti, Anna, and Michal Starke. 1999. The typology of structural deficiency: A case study of the three classes of pronouns. In *Clitics in the languages of Europe*, ed. Henk Van Riemsdijk. Mouton de Gruyter.

Charnavel, Isabelle. 2009. Reflexivization in Lakhota: Lexical or syntactic? Ms., UCLA.

Charnavel, Isabelle, and Dominique Sportiche. 2014. Anaphor binding domains. lingBuzz/001742.

Chomsky, Noam. 1970. Deep structure, surface structure, and semantic interpretation. In *Studies in general and oriental linguistics*, ed. Roman Jakobson and Shigeo Kawamoto, 52–91. Tokyo: TEC Corporation.

Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.

Chomsky, Noam. 1986. *Knowledge of language: Its nature, origin and use*. New York, NY: Praeger.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka. Cambridge, MA: MIT Press.

Chomsky, Noam, and Morris Halle. 1968. *The sound pattern of English*. New York, NY: Harper and Row.

Cinque, Guglielmo. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24:239–297.

Collins, Chris. 2005. A smuggling approach to the passive in English. *Syntax* 8:81–120.

Coon, Jessica, Pedro Mateo Pedro, and Omer Preminger. 2011. The role of Case in A-bar extraction asymmetries: Evidence from Mayan. lingBuzz/001401.

Crawley, Terry. 1998. *An Erromangean (Sye) grammar*. University of Hawai'i Press.

Culy, Christopher, Koungarma Kodio, and Patrice Togo. 1994. Dogon pronominal systems: their nature and evolution. *Studies in African linguistics* 23.

Deal, Amy Rose. 2011. Possessor raising. lingBuzz/001371.

Embick, David. 1998. Voice systems and the syntax/morphology interface. *MIT Working Papers in Linguistics* 32:41–72.

Foley, William A., and Robert Van Valin. 1984. *Functional syntax and universal grammar*. Cambridge, UK: Cambridge University Press.

Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, MA: MIT Press.

Fox, Danny, and Jon Nissenbaum. 1999. Extraposition and scope: A case for overt QR. In *Proceedings of the 18th West Coast Conference on Formal Linguistics*, ed. Sonya Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest, 132–144.

Féry, Caroline, and Vieri Samek-Lodovici. 2006. Focus projection and prosodic prominence in nested foci. *Language* 82:131–150.

Gehrke, Berit, and Nino Grillo. 2009. How to become passive. In *Explorations of phase theory: Features, arguments, and interpretation at the interfaces*, ed. Kleanthes Grohmann. Mouton de Gruyter.

Geniušienė, Emma. 1987. *The typology of reflexives*. New York: Mouton de Gruyter.

Grodzinsky, Yosef, and Tanya Reinhart. 1993. The innateness of binding and coreference. *Linguistic Inquiry* 24:69–101.

Halle, Morris, and Jean Roger Vergnaud. 1987. *An essay on stress*. Cambridge, MA: MIT Press.

Halliday, M.A.K. 1967. Notes on transitivity and theme in English: Part 2. *Journal of Linguistics* 3:199–244.

Halpert, Claire. 2011. Low subjects in Zulu and the prosody-syntax interface. Presented at ACAL 42, June 2011.

Harley, Heidi. 2013. External arguments and the Mirror Principle: On the distinctness of Voice and v. *Lingua* 125:34–57.

Harwood, Will. 2013. An existential crisis: understanding the aspectual restrictions on English existential constructions. lingBuzz/001829.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden, MA: Blackwell Publishing.

Hellan, Lars. 1988. *Anaphora in Norwegian and the theory of grammar*. Dordrecht: Foris.

Hornstein, Norbert. 2001. *Move! a minimalist theory of construal*. Malden, MA: Blackwell Publishing.

Hornstein, Norbert. 2010. Outlines of a minimalist syntax. Lectures Presented at Syntax Fest 2010.

Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.

Jayaseelan, K.A. 1999. *Parametric studies in Malayalam syntax*. New Delhi: Allied Publishers Ltd.

Kahnemuyipour, Arsalan. 2009. *The syntax of sentential stress*. Oxford: Oxford University Press.

Katada, Fusa. 1991. The LF representation of anaphors. *Linguistic Inquiry* 22:287—313.

Kayne, Richard. 1975. *French syntax: The transformational cycle*. Cambridge, MA: MIT Press.

Kayne, Richard. 1998. Overt vs. covert movement. *Syntax* 1:128–191.

Kayne, Richard. 2002. Pronouns and their antecedents. In *Derivation and explanation in the minimalist program*, ed. Samuel Epstein and Daniel Seely, 133–166. Malden, MA: Blackwell Publishers.

Keenan, Edward L. 1988. On semantics and the binding theory. In *Explaining Language Universals*, ed. John Hawkins, 105–144. Oxford: Blackwell Publishing.

Kimmelman, Vadim. 2009. Reflexive pronouns in Russian Sign Language and Sign Language of the Netherlands. Master's thesis, University of Amsterdam.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, 109–137. Dordrecht: Kluwer.

Krifka, Manfred. 2004. The semantics of questions and the focusation of answers. In *Topic and focus: A cross-linguistic perspective*, ed. Chungmin Lee and Matthew Gordon, 139–151. Kluwer Academic Publishers.

Laka, Itziar. 1990. Negation in syntax: On the nature of functional categories and projections. Doctoral Dissertation, MIT.

Landau, Idan. 1999. Possessor raising and the structure of VP. *Lingua* 107:1–37.

Lebeaux, David. 1983. A distributional difference between reciprocals and reflexives. *Linguistic Inquiry* 14:723–730.

Lee-Schoenfeld, Vera. 2006. German possessor datives: raised *and* affected. *Journal of Comparative Germanic Linguistics* 9:101–142.

Lees, Robert, and Edward Klima. 1963. Rules for English pronominalization. *Language* 39:17–28.

Legate, Julie Anne. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506–515.

Lidz, Jeffrey. 1996. Dimensions of reflexivity. Doctoral Dissertation, University of Delaware.

Lidz, Jeffrey. 2001a. Anti-antilocality. In *Long distance reflexives*, ed. Peter Cole, Gabriella Hermon, and C.-T. James Huang, volume 33 of *Syntax and Semantics*. Academic Press.

Lidz, Jeffrey. 2001b. The argument structure of verbal reflexives. *Natural Language & Linguistic Theory* 19:311–353.

McPherson, Laura. 2014. Replacive grammatical tone in the dogon languages. Doctoral Dissertation, UCLA.

Moulton, Keir. 2005. Strong reflexivity and attitudes *de se*. Ms., UMass Amherst.

Orfitelli, Robyn. 2012. Argument intervention in the acquisition of A-movement. Doctoral Dissertation, UCLA, Los Angeles, CA.

Pearson, Matthew. 2005. The Malagasy subject/topic as an A′-element. *Natural Language & Linguistic Theory* 23:381–457.

Preminger, Omer. 2011. Agreement as a fallible operation. Doctoral Dissertation, MIT.

Rackowski, Andrea, and Norvin Richards. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36:565–599.

Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.

Reuland, Eric. 2011. *Anaphora and language design*. Cambridge, MA: MIT Press.

Rizzi, Luigi. 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17:501–557.

Rizzi, Luigi. 1990. On the anaphor-agreement effect. *Rivista di Linguistica* 2:27–42.

Safir, Kenneth. 2004. *The syntax of anaphora*. Oxford: Oxford University Press.

Sailor, Craig. 2011. Remarks on retorts: On emphatic polarity in English. Presented at NELS 42, University of Toronto.

Sailor, Craig, and Byron Ahn. 2010. The Voices in our heads: The VoiceP in English. Presented at Morphological Voice and its Grammatical Interfaces, University of Vienna.

Schlenker, Philippe. 2005. Non-redundancy: Towards a semantic reinterpretation of binding theory. *Natural Language Semantics* 13:1–92.

Selkirk, Elisabeth. 1996. Sentence prosody: Intonation, stress, and phrasing. In *The handbook of phonological theory*, ed. John A. Goldsmith, 550–569.

Spathas, Giorgios. 2010. Focus on anaphora. Doctoral Dissertation, University of Utrecht.

Sportiche, Dominique. 1990. Movement, agreement and case. Published in Sportiche (1998), *Partitions and Atoms of Clause Structure*.

Sportiche, Dominique. 2010. French reflexive se: Binding and Merge locality. lingBuzz/001273.

Sportiche, Dominique. 2012. Binding domains. Presented at Berkeley Linguistics Society 38th Annual Meeting.

Stokhof, Martin. 2006. The development of Montague grammar. In *History of the language sciences*, ed. Sylvain Auroux,

E.F.K. Koerner, Hans-Josef Niederehe, and Kees Versteegh, 2058–2073. Berlin/New York: Walter de Gruyter.

Storoshenko, Dennis. 2009. Investigating the Shona reflexive *zvi*. In *Selected proceedings of the 39th annual conference on African linguistics*, ed. Akinloye Ojo and Lioba Moshi. Cascadilla Proceedings Project.

Szabolcsi, Anna. 1987. Bound variables in syntax (are there any?). In *Proceedings of the 6th amsterdam colloquium*, ed. Jeroen Groenendijk and Martin Stokhof, 331–353. Amsterdam: University of Amsterdam.

Szendrői, Kriszta. 2003. A stress-based approach to the syntax of Hungarian focus. *The Linguistic Review* 20:37–78.

Timberlake, Alan. 1979. Reflexivization and the cycle in Russian. *Linguistic Inquiry* 10:109–141.

Toman, Jindřich. 1991. Anaphors in binary trees: an analysis of Czech reflexives. In *Long-distance anaphora*, ed. Jan Koster and Eric Reuland. Cambridge: Cambridge University Press.

Tsimpli, Ianthi-Maria. 1989. On the properties of the passive affix in Modern Greek. *USL-Working Papers* 235–260.

Uriagereka, Juan. 1999. Multiple spell-out. In *Working minimalism*, ed. Samuel Epstein and Norbert Hornstein, 251–282. Cambridge, MA: MIT Press.

Vikner, Sten. 1985. Parameters of binder and of binding category in Danish. *Working Papers in Scandinavian Syntax* 23.

Vikner, Sten. 2006. Object shift. In *The Blackwell Companion to Syntax*, ed. Martin Everaert and Henk van Riemsdijk, volume 3, chapter 46. Blackwell Publishing.

Wagner, Michael. 2006. Givenness and locality. In *Proceedings of SALT XVI*, ed. Masayuki Gibson and Jonathan Howell, 295–312. CLC Publications.

Wali, Kashi, and K.V. Subbarao. 1991. On pronominal classification: Evidence from Marathi and Telugu. *Linguistics* 29:1093–1110.

Williams, Kemp. 1988. Exceptional behavior of anaphors in Albanian. *Linguistic Inquiry* 19:161–168.

Woolford, Ellen. 1999. More on the anaphor agreement effect. *Linguistic Inquiry* 30:257–287.

Zubizarreta, María Luisa. 1998. *Prosody, focus, and word order*. Cambridge, MA: The MIT Press.

Zubizarreta, María Luisa, and Jean-Roger Vergnaud. 2006. Phrasal stress and syntax. In *The Blackwell Companion to Syntax*, ed. Martin Everaert and Henk van Riemsdijk, volume 3, chapter 49. Blackwell Publishing.

A.   Appendix

A.1.   Reflexives without REFL Voice

The auxiliary '*be*' is used as a perfect marker non-active voices (including REFL) in French/Italian

◆ So clauses in the perfect with the LSOR marker, *si*, use '*be*' as their perfect auxiliary:

> (58)   Gianni   si   è   accusato   [Italian, Burzio 1986]
>   Gianni   **LSOR**   PERF.NAct   accuse.PART
>   '*Gianni accused himself*'

◆ There are other clauses with a reflexive meaning, which use the non-LSOR ('strong form'), *se stesso*

◆ These clauses, as in (59), behave as active clauses, in that they use the '*have*' perfect auxiliary:

> (59)   Gianni   ha   accusato   se stesso
>   Gianni   PERF.Act   accuse.PART   himself
>   '*Gianni accused himself*'

(58) and (59) show **there must be (at least) two kinds of reflexive anaphors**

◆ They can be used in very similar contexts, so **when do you use which reflexive**?

◆ Perhaps the answer is like Grodzinsky and Reinhart (1993)'s Rule I or Fox (2000)'s Rule H, which place limits on derivational possibilities in coreference:

> (60)   <u>Rule H</u>   A pronoun α, can be bound by an antecedent, β, only if there is no closer antecedent, γ, such that it is possible to bind α by γ and get the same semantic interpretation.

> (61)   <u>Rule I</u> α cannot corefer with β if an indistinguishable interpretation can be generated by replacing α with a bound variable, γ, bound by β.

◆ To extend this to the current problem, I propose a strong hypothesis, in the form of an additional rule:

> (62)   <u>Rule J</u>   REFL Voice^0 must be merged if (i) it its presence is grammatically possible and (ii) its presence doesn't change the interpretation.[32]

This raises another question: why Rule J?

◆ This seems to be **part of a larger pattern in syntax**:

> (63)   The more constrained derivation is utilized to the greatest extent possible.

> ▸ See also: weak/strong pronoun alternation (Cardinaletti and Starke 1999), object-shift-dependent specificity (Germanic, Adger 1994; Tagalog, Rackowski and Richards 2005), possessor raising (e.g. Nez Perce, Deal 2011; Hebrew and Romance, Landau 1999), movement for focus (Zulu, Halpert 2011; Hungarian, Szendrői 2003), etc.[33]

◆ Perhaps this is done to minimize vagueness/maximize pragmatic cooperation

> ▸ "If you didn't use the more constrained derivation, you must have had a (structural/interpretational) reason not to"

---

[32]It might seem desirable to reduce Rule J to being a consequence of Rule I, since REFL Voice^0 forces a bound-variable interpretation (see Ahn 2011). However, such an analysis faces some empirical issues, since it seems that bound variable interpretations can arise without REFL:

    i.   Dr. Freud told Dora about herself before he did [~~tell~~] Little Hans [~~about himself~~].

[33]Preminger 2011 discusses object shift for specificity as always involving a single grammatical function, which desires movement as much as possible but which does not crash the derivation if movement does not occur. This framework could be useful in explaining possessor raising, movement for focus, and possibly even English reflexive anaphors – the extra movement is done as much as possible; but, if it is not possible, the operation that would normally induce movement can still succeed.

However, if an account in the spirit of Preminger's account is correct, more would have to be said for phenomena in which different lexical items are used for moved and unmoved forms – for example, weak/strong pronoun alternations and LSOR/non-LSOR anaphor alternations in languages that use different lexical items (e.g. Romance). It would require the grammar would have to have an additional set of rules that dictates the choice lexical item for anaphor type, independent of the item's licensing conditions (a post-syntactic, late Spell-Out-type Lexical Insertion model might be appropriate).

Alternatively, it may be that there are two grammatical operations, each selecting different lexical items.

byronahnætbudatedu

A.2. More Cross-Linguistic Data

Below are several the morpho-syntactic configurations that many languages employ when the local reflexivity exhibits LSOR properties:[34]

(64) (Albanian, Indo-European; Williams 1988)
Gazetari   i   a   përshkroi   Agimin   vetes
journalist-the 3sgDat 3sgAcc describe.pastdef.act Agim   self.DAT
'The journalist$_1$ described himself$_{1/*2}$ to Agim$_2$'

(65) (Czech, Slavic; Toman 1991)
Sultán **si**   nabídl otroka
Sultan **REFL**.DAT offer slave
'The sultan$_1$ offered the slave$_2$ to himself$_{1/*2}$'

(66) (Danish, Scandinavian; Vikner 1985)
... at   Peter fortalte Michael om   **sig   selv**
... that Peter told   Michael about **REFL intns**
'... that Peter$_1$ told Michael$_2$ about himself$_{1/*2}$'

(67) (Finnish[35], Uralic; Ahn 2011)
Jussi   puolusta-utu -i   paremmin kuin Pekka
Jussi.NOM defend -**REFL**-PAST better   than Pekka.NOM
'John$_1$ defends himself better than Peter$_2$ does [~~defend himself$_{2/*1}$~~].'

(68) (French, Romance; Sportiche 2010)
Marie **se**   montre   Jean
Marie **REFL** show.3SG John
'Marie$_1$ is showing John$_2$ to herself$_1$/*himself$_2$'

(69) (Greek, Hellenic; Tsimpli 1989)
O   Yanis   **afto**-katastraf-**i**   -ke
The Yani.Nom **self**- destroy -**NONACT**-3sg.past
'Yani destroyed himself'

(70) (Inuit, Eskimo–Aleut; Bittner 1994)
Juuna-p   Kaali **immi**-nik uqaluttuup-p -a   -a
Juuna-ERG Kaali **self** -INS tell   -IND-[+tr]-3SG.3SG
'Juuna$_1$ told Kalli$_2$ about himself$_{1/*2}$'

(71) (Japanese, Altaic; Katada 1991)
Bill-ga Mike-ni **zibun**-**zisin** -no koto -o   hanas-ita
Bill-NOM Mike-DAT **REFL** -**intns**-GEN matter-ACC speak-PST
'Bill$_1$ told Mike$_2$ about himself$_{1/*2}$'

(72) (Kannada, Dravidian; Lidz 2001b)
rashmi tan -age-taane hari-yannu paričaya   -maaDi-**koND** -aLu
Rashmi SELF-DAT-INTNS Hari-ACC   introduction-do   -**LSOR**.pst-3SG.F
'Rashmi$_1$ introduced Hari$_2$ to herself$_1$/*himself$_2$'

(73) (Lakhota, Siouan; Charnavel 2009)[36]
iwó-   m- igl- ak   -e
talk.about-1sg.II-REFL-talk.about-abl
'I talk about myself'

---

[34]It may be that some of these morpho-syntactic reflexive strategies listed here are not quite the same as what we've already seen. We need to be careful, as the morpho-syntactic configuration used for LSOR in a given language may have a broader distribution, beyond just LSOR. That is, due to homophony/paradigm-sharing, it might be that the morpho-syntactic configuration for LSOR (determined by REFL Voice) is surface-identical to some other kind of reflexivity (not determined by REFL Voice).

[35]See Ahn (2011) for argumentation that Finnish -UtU is the Voice morpheme.

[36]Charnavel does not give a grammatical example with two possible binders in a single clause. Instead she says that, in order to express something like 'I talk to Anne about herself', you cannot use the reflexive morpheme, and instead must use a paraphrase like 'I talked to Anne and I talked about her'.

(74)   (Lango, Nilo-Saharan; Foley and Van Valin 1984)
        Lócà ò-   kwá -o   dákó   pìr   -⊠́   **k⊠n⊠**
        man 3SG.A- ask -3SG.U woman about -3SG **self**
        'The man$_1$ asked the woman about himself$_1$/*herself$_2$.'

(75)   (Malayalam, Dravidian; Jayaseelan 1999)
        raaman kriṣṇan -ooḍə **ṭan**-ne patti **ṭanne** samsaariccu
        Raman   Krishnan-to   **self**-ACC about **EMPH**   talked
        'Raman$_1$ talked to Krishnan to himself$_{1/*2}$'

(76)   (Marathi, Indo-Aryan; Wali and Subbarao 1991)
        Lili -ni   Susi -laa **swataah** -baddall kaahihi   saangitla naahi
        Lili -ERG Susi -to   **self**   -about   anything   told   not
        'Lili$_1$ didn't tell Susi$_2$ anything about self$_{1/*2}$'

(77)   (Norwegian, Scandinavian; Hellan 1988)
        Jon   fortalte meg om   **seg   selv**
        John told   me   about **REFL intns**
        'Jon$_1$ told me$_2$ about himself$_1$/*myself$_2$'

(78)   (Russian, Slavic; Timberlake 1979)
        Ja emu skazal vse o   **sebe**
        I   him told   all about   **REFL**
        'I$_1$ told him$_2$ everything about myself$_1$/*himself$_2$'

(79)   (Russian Sign Language, Signing; Kimmelman 2009)
        BOY IX-A GIRL IX-B **SELF**+IX-A/*IX-B TELL
        boy   girl   **REFL**   tell
        'The boy tells the girl about himself/*herself'

(80)   (Sign Language of the Netherlands, Signing; Kimmelman 2009)
        BOY IX-A GIRL IX-B ABOUT **ZELF**+IX-A/*IX-B A-TELL-B
        boy   girl   about **REFL**   told
        'The boy tells the girl about himself/*herself'

(81)   (Tɔrɔ Sɔɔ, Niger-Congo; Culy et al. 1994)
        Mariam Omar nɛ sɔ **unɔ** mɔ sɔaa be
        Mariam Omar to word **REFL** POSS talked PST
        'Mariam$_1$ talked to Omar$_2$ about himself$_1$/*herself$_2$.'

A.3. Alternative Derivation: LF Movement

In some frameworks, LF movement (i.e. post-syntactic movement for interpretation) exists as a grammatical operation

- If such frameworks, it is _in principle_ possible that reflexives _LF-move_ to VoiceP

- There have been many proposals of LF-movement of reflexives (e.g. Lebeaux 1983, Chomsky 1986, Reinhart and Reuland 1993, Reuland 2011)

However there is evidence that such movement must be in the narrow syntax

- Such LF movement cannot have phonological effects (w.r.t. word-order or prosody, for example) in a Minimalist architecture

    ▸ Since there is no LF-PF interface (besides the narrow syntax)

    ▸ So, any language with **observable PF effects** of the movement to VoiceP provides **evidence that this movement takes place in the narrow syntax**

- Additionally, LF movement has sometimes been claimed to be island-insensitive

    ▸ If true, this reflexive movement cannot be the sort of LF movement that is island-insensitive

    ▸   Because there are observable island effects with reflexive movement

Present evidence suggests that reflexive movement to VoiceP takes place in the narrow syntax

- At the very least in the languages with PF effects

- It is theoretically possible that languages vary as to whether this movement takes place at LF or in the narrow syntax

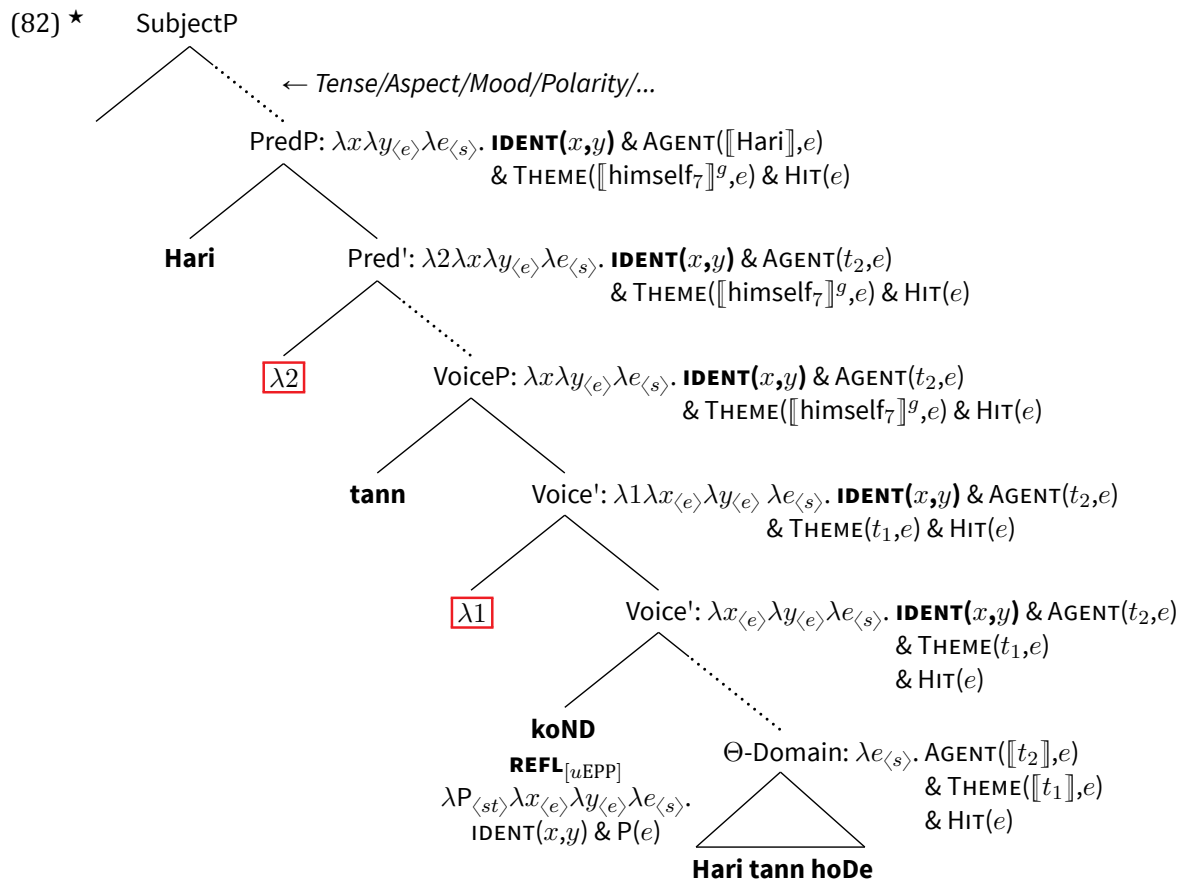- I have yet to find any evidence supporting this kind of variation

A.4.   Alternative Semantic Derivations: Lambda Abstraction

This paper assumes a theory in which any given element can compose with multiple semantic functions, as the result of movement

- Even if this can be convincingly shown to be impossible, this derivation could still be re-cast using what (in this author's opinion) amounts to **a notational variant, using lambda abstraction** (e.g. Heim and Kratzer 1998)
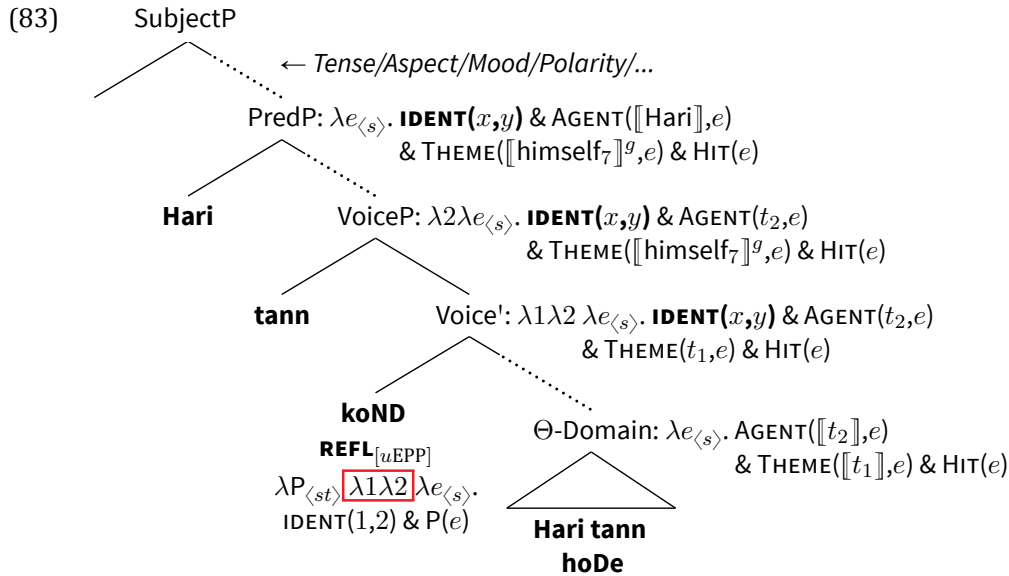
We will entertain a few possibilities using lambda abstraction

- As a first pass, let us attempt a derivation identical to (13), with the exception that lambda abstraction is used (**Note that (82) does _not_ converge**)

(82) ⋆   SubjectP

        ← _Tense/Aspect/Mood/Polarity/…_

PredP: $\lambda x \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$ **IDENT(**x**,**y**)** & AGENT($[\![$Hari$]\!]$,e)
        & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

Hari   Pred': $\lambda 2 \lambda x \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$ **IDENT(**x**,**y**)** & AGENT(t_2,e)
        & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

$\boxed{\lambda 2}$ VoiceP: $\lambda x \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$ **IDENT(**x**,**y**)** & AGENT(t_2,e)
        & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

tann   Voice': $\lambda 1 \lambda x_{\langle e \rangle} \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$ **IDENT(**x**,**y**)** & AGENT(t_2,e)
        & THEME(t_1,e) & HIT(e)

$\boxed{\lambda 1}$ Voice': $\lambda x_{\langle e \rangle} \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$ **IDENT(**x**,**y**)** & AGENT(t_2,e)
        & THEME(t_1,e)
        & HIT(e)

koND
REFL$_{[uEPP]}$
$\lambda P_{\langle st \rangle} \lambda x_{\langle e \rangle} \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}.$
IDENT(x,y) & P(e)

Θ-Domain: $\lambda e_{\langle s \rangle}.$ AGENT($[\![t_2]\!]$,e)
        & THEME($[\![t_1]\!]$,e)
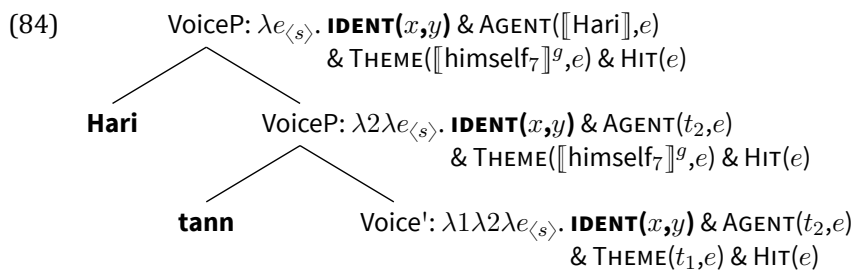   & HIT(e)

Hari tann hoDe

- The problem with this kind of derivation is the λx and λy introduced by the REFL function will not have the chance to be saturated (at least not by the right constituent) – **the introduction of $\lambda 1 / \lambda 2$ outside of the REFL head essentially block this**

◆ Another possibility is that the $\lambda 1/\lambda 2$ are not added outside of REFL

  ▸ INSTEAD, they are bundled with in the Voice head, replacing the λx and λy in (82), as in (83):[37]

  (83) SubjectP

  ← Tense/Aspect/Mood/Polarity/…

  PredP: $\lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($[\![$Hari$]\!]$,$e$)
  & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

  Hari   VoiceP: $\lambda 2 \lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($t_2$,$e$)
  & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

  tann   Voice': $\lambda 1 \lambda 2\, \lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($t_2$,$e$)
  & THEME(t_1,e) & HIT(e)

  koND
  REFL$_{[u\text{EPP}]}$ Θ-Domain: $\lambda e_{\langle s \rangle}$. AGENT($[\![t_2]\!]$,$e$)
  $\lambda P_{\langle st \rangle}$ $\boxed{\lambda 1 \lambda 2}$ $\lambda e_{\langle s \rangle}$.   & THEME($[\![t_1]\!]$,$e$) & HIT($e$)
  IDENT(1,2) & P(e)
  Hari tann
  hoDe

  ↳ Essentially what we've done here is say that, if this REFL Voice head is merged, there needs to be movement of two things from in its complement to a higher position (like the EPP)

    ↳ If there is no movement, the semantic derivation will crash

  ↳ We've reduced the uEPP feature to the denotation of REFL
  (Or at least made them effect the same result)

  ▸ Thus an analysis like (83) in which we have lambda-abstraction leans on movement in the same way as (13)

    ↳ Both the subject and anaphor must move, in order for a derivation with REFL Voice[0] to converge

      ↳ (in the same way as the derivation in section 3.2)

    ↳ It is just that the lambda-abstracts would need to be bundled with the Voice[0]

      ↳ Not introduced separately

◆ It could also be that these lambdas are the EPP for both subject and anaphor

  ▸ Meaning that the movement of both must target the VoiceP.

  (84)   VoiceP: $\lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($[\![$Hari$]\!]$,$e$)
  & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

  Hari   VoiceP: $\lambda 2 \lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($t_2$,$e$)
  & THEME($[\![$himself$_7]\!]^g$,e) & HIT(e)

  tann   Voice': $\lambda 1 \lambda 2 \lambda e_{\langle s \rangle}$. **IDENT(**$x$**,**$y$**)** & AGENT($t_2$,$e$)
  & THEME(t_1,e) & HIT(e)

  ▸ Again, the movement is necessary for semantic reasons. (83) and (84) only differ in that:

    ↳ The subject is more syntactically local to the head that introduces its lambda-abstract, and

    ↳ It relies on the existence multiple specifiers

---

[37]Keir Moulton in an unpublished presentation has proposed a nearly identical structure, in a similar vein: some types of reflexivity are restricted to structures in which bundling of this kind of lambda onto the Voice head has occurred. (Keir Moulton p.c.)

Both lambda-abstraction derivations above and the non-lambda-abstraction in section 3.2 rely on tight relations between syntactic and semantic structure

◆ This reflects commonly taken approaches to the syntax-semantics interface

▸ "Semantics is syntax-driven, syntax is semantically motivated" (Stokhof 2006)

▸ "Any semantic object or operation on such objects has to have a correlate in the syntax, an expression or operation that triggers it. And conversely, all expressions and all structural operations in the syntax have to have a semantic correlate. Thus the autonomy of syntax is limited." (*ibid.*)

A.5. Alternative Semantic Derivations: Anaphor=Reflexivizer

Some theories assume differently that (some) anaphors are the semantic reflexivizers (Bach and Partee 1980, Szabolcsi 1987, Keenan 1988, Schlenker 2005, Spathas 2010)

◆ In such a theory, the reflexivizer *himself* has a denotation like the following:

(85) $[\![\text{himself}]\!] = \lambda R_{\langle eest \rangle} \lambda x.\, R(x,x)$

◆ I'll characterize this theory as Anaphor=Reflexivizer (A=R), and mine as Voice=Reflexivizer (V=R)

◆ Regardless which theory is correct, the generalizations found about LSORs **rely on movement**

▸ An A=R theory does not inherently rely on movement

Some semantic approaches to reflexivity (which are compatible with an A=R hypothesis) argue that movement does happen when the anaphor is the reflexivizer (e.g. Reuland 2011)

◆ For example, to reflexive-mark the predicate, or to allow for composition to happen normally

◆ If this movement is to the specifier of a REFL VoiceP, we can maintain all generalizations seen so far

Thus an A=R theory and a V=R theory are both potential solutions, essentially as notational variants[38]

◆ What must remain constant:

▸ A unique REFL VoiceP, to which reflexives move

▸ If REFL Voice is not implemented...

↳ We almost certainly lose the connection to passives

↳ We potentially lose the connection to subject orientation and the linear position facts

◆ What must differ:

▸ The denotations of the reflexivizer function (since structural locus differs)

▸ The derivation of Focus-bearing reflexives for English (Appendix A.7)

↳ If the anaphor were the reflexivizer, REAFR prosody/interpretation ought to be possible, even in cases where movement to VoiceP doesn't take place. (See Chapter 4 of Ahn 2015)

IN SUMMARY: the basic theory must say that a the semantic reflexivizer function depends on...

❶ reflexive anaphors move, AND

❷ movement depends on a unique Voice^0 (REFL)

Thus the basic ingredients of a complete analysis of LSOR are REFL Voice and movement

◆ How exactly this is implemented theoretically is up for debate

◆ The choice between V=R and A=R theories is likely decided by the choice of framework

---

[38]Though both are potential solutions, each theory would makes some rather different assumptions in the framework. Thus evidence in favor of one framework over another could influence the choice between A=R and V=R theories. For example, if one assumes (as I do) that syntactic arguments (i.e. non-heads) are never semantic functions on their sisters, only the V=R theory is a possible candidate. (Such an assumption (predictably) constrains and complicates syntactic representations, but makes more principled the mapping of syntax onto semantics.)

A.6.   English: Notes on Phrasal Stress and Reflexivity

Let us be clear about what implications hold about the relationship between phrasal stress and reflexivity

- ◆   If, in broad-focus contexts, an anaphor bears phrasal stress, we know that the clause must not use REFL voice
  - ▸   If REFL Voice were used, the anaphor would have to move to Spec,VoiceP where it would not be eligible to bear the phrasal stress, as it is not most embedded
    - ↳   But we need to beware of the possibility that everything but the anaphor is given, in which case the reflexive *may* bear phrasal stress even though REFL is used
    - ↳   (Because given material does not bear phrasal stress, generally (Bresnan 1971, Zubizarreta 1998, Féry and Samek-Lodovici 2006, a.o., but cf. Wagner 2006); see Ahn *in prep.* for a derivation of these facts using an NSR that is sensitive only to depth of embedding)
  - ▸   Just like if French uses *lui-meme*, we know that the clause does not use REFL Voice

In addition, there may be cases where an anaphor does *not* bear phrasal stress even when REFL is predicted impossible

- ◆   This would not be unexpected because there are other A-movements that feed phrasal stress
  - ▸   e.g. movement of given material and movement of pronouns
- ◆   So it is possible that the anaphor may sometimes undergo one of these other movements.
- ◆   For example, below, non-LSOR *himself* is not subject-bound, but it does <u>not</u> bear phrasal stress:

  (86)   Q: Who did Mary glue to *himself*?
  　　　A1:   Mary glued ***Jóhn*** to himself.
  　　　A2:   #Mary glued **John** to *himsélf*.

  - ▸   This is because *himself* is given and would undergo givenness movement

Finally, there may also be causes where we might (a priori) predict the anaphor to avoid stress, but it bears it.

- ◆   For example, in double object constructions, it is impossible for a direct object to be unstressed for most (if not all) English speakers:

  (87)   Q: Tell me something that happened in the Bible.
  　　　A1:   Jesus gave himself to the *Rómans*.
  　　　A2:   ★ Jesus gave the *Rómans* himself.
  　　　A3:   ⁇ Jesus gave the Romans *himsélf*.

  - ▸   Stressing the object makes it better, though rather marked

- ◆   Additionally, the judgments for the following seem to be split, dialectally

  (88)   Q: Tell me something that happened at the meeting.
  　　　A1: % Mark assigned *Mary* to himself.
  　　　A2: % Mark assigned Mary to *himsélf*.

  - ▸   Some prefer (88A1) to (88A2) (a priori predicted), and others have the inverse preference

- ◆   Where would this derive from?
  - ▸   We know there are independent constraints on movement beyond island constraints
    - ↳   That is, some speakers of English allow A-movements that other speakers do not:

      (89)   a.   % A book was given John.

      　　　b.   John was given a book.

byronahnætbudatedu

- ▸ In the same way, some dialects of English must constrain movement to VoiceP in a way that others do not
  - ↳ i.e. dialects that rule out (88A1) do so because this extra movement to VoiceP is bad, parallel to how some dialects rule out the extra movement in (89a)

- ▸ So for some dialects of English, there are additional constraints that produce prosodic patterns in which the anaphor will bear phrasal stress, **even when it is bound by the local subject**.
  - ↳ (Recall that this is exactly what we saw with anaphors that cannot move to VoiceP because they are in islands.)

- ◆ And we should expect this kind of dialectal variation
  - ▸ Languages also vary in what they allow to move to VoiceP
    - ↳ Greek disallows indirect objects to move as LSOR anaphors
    - ↳ Inuit disallows arguments as LSOR anaphors
    - ↳ French disallows complements of the preposition *à* as LSOR anaphors, unless it is an indirect object
    - ↳ …

A.7.   English: A Focus Construction with LSOR

In English, there is also a special interpretation available when the anaphor bears focal-stress

- ◆ This is exemplified by the ambiguity of (90):
  - (90)   Nate cloned **HIMSÉLF**.
    - a.   = Who did Nate clone? Nate cloned **HIMSÉLF**.
    - b.   = Who cloned Nate? Nate cloned **HIMSÉLF**.

  - ▸ We will call the interpretation in (90a) the "object focus" reading, and the interpretation in (90b) the "Realizing External Argument Focus on a Reflexive" (REAFR) reading

There are two critical things to note

- ◆ First, the prosody in (90) is distinct from the one below:
  - (91)   **NÁTE** cloned **HIMSÉLF**.
    - a.   = Who cloned who? **NÁTE** cloned **HIMSÉLF**.
    - b.   = Who cloned Nate? **NÁTE** cloned **HIMSÉLF**.

  - ▸ In this multiple-focus pattern, which readings are available changes
  - ▸ And as we will see, the pattern in (91b) is not constrained in the same ways as (90b)

- ◆ Second, as the name REAFR suggests, this prosody/interpretation pairing is only possible when there is a reflexive
  - (92)   Nate cloned **JÉAN**.
    - a.   = Who did Nate clone? Nate cloned **JÉAN**.
    - b.   ≠ Who cloned Nate? Nate cloned **JÉAN**.

  - ▸ The fact that (92b) is unavailable falls out from an extremely robust principle, QAC (Halliday 1967, Krifka 2004, among many many others)
    - (93)   **Question-Answer Congruence** (QAC):
      An appropriate answer to a question must semantically and prosodically focus the constituent(s) being questioned.

    - ↳ In other words, QAC necessitates the prosodic focus and semantic focus to occur on the same constituent

▸ However, REAFR seems to violate QAC systematically

> **REAFR Puzzle**
>
> How is REAFR possible, given the QAC?

The REAFR pattern is restricted to certain grammatical contexts

◆ In the same ways that LSOR marking is restricted to certain grammatical contexts

◆ Recall the constraints below:

(46)   Limitations on Apparently Exceptional Reflexives
    i.   They must have the grammatical subject as their antecedents
    ii.   They cannot appear in passive voice clauses
    iii.   They cannot occur in an island that is smaller than a complete predicate
    iv.   They surface in only certain linear positions

◆ These constraints predict the following data

(94)   Q1:   Who ___ assigned Mark to Bill?   **(subject orientation)**
     A1:   **Jénna** assigned Mark to Bill.   *baseline*
     A2:   Mark assigned **himsélf** to Bill.   *LSOR, REAFR*
     Q2:   Who did Jenna assigned ___ to Bill?
     A3:   Jenna assigned **Bíll** to Bill.   *baseline*
     A4:   Jenna assigned **Bíll** to **himsélf**.   *non-LSOR, dual focus*

(95)   Q: Who was Mark assigned to ____ by Bill?   **(passive)**
     A1:   Mark was assigned to Bill by **Bíll**.   *baseline*
     A2: #Mark was assigned to Bill by **himsélf**.   *passive, REAFR*
     A3:   Mark was assigned to **Bíll** by **himsélf**.   *passive, dual focus*

◆ (96)   Q: Who ____ entertained Liz and Ken?   **(islands)**
     A1:   **Jáck** entertained Liz and Ken.   *baseline*
     A2: #Ken entertained Liz and **himsélf**.   *island, REAFR*
     A3:   **Kén** entertained Liz and **himsélf**.   *island, dual focus*

(97)   Q: Who ____ looked the actors up?   **(linear order[39])**
     A1:   **Aléxa** looked the actors up.   *baseline*
     A2:   The actors looked **themsélves** up.   *between V & Prt, REAFR*
   A3: #?The actors looked up **themsélves**.   *between V & Prt, REAFR is #?*

---

[39]Variability has been found here, in which both word orders of (97) are fine for some speakers. The fact that for some speakers (97A3) is impossible indicates that, in principle, there linear position of the reflexive can influence whether the reflexive anaphor is associated with the semantic reflexivizer. The fact that it is possible for other speakers does not speak against this conclusion – only that there is variability regarding the linear position of moving reflexives.

Briefly, this is because what is focused in REAFR examples is the reflexivizing function (Spathas 2010)

◆ Let's run through a derivation showing how this gives REAFR prosody:

(98) Q: Who cloned Nate?
      A: Nate cloned **HIMSÉLF**.

◆ First, the syntax as demanded by REFL VoiceP will be:

(99)
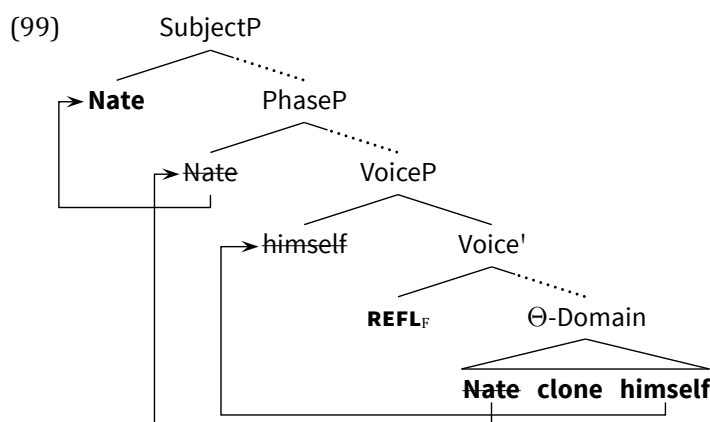
◆ In (99), REFL is what is semantically focused, bearing the F-marking

  ▸ When Phonology is given F-marking on a silent head, it must do something to realize the F-marking

    (100) **Last Resort Focus Transference**:
           Just in case an F-marked syntactic head is silent, the specifier of that head's projection bears focus prosody.

    ↪ This kind of operation has been independently argued for by Laka 1990

    ↪ Polarity focus (a semantically focused Σ) in Basque is realized as a focus accent on the specifier of ΣP when Σ is silent, but by Σ itself, when it's overt.

    ↪ (See also Sailor 2011 for similar data in English.)

  ▸ This means the LSOR anaphor in Spec,VoiceP is given an abstract phonological F-marking

◆ Seeing as the lower copy is what is actually spelled out in this theory, it must be if one member of a chain bears phonological F-marking, then all members of the chain do

  ▸ Including the spelled-out copy of the anaphor, which is in its base position

  ▸ Phonology already has to know about chains to delete copies, so sharing phonologically interpretable features across chains is possible in the architecture

  ▸ In fact, this kind of sharing of post-lexical information across copies in a chain has been independently proposed (Selkirk 1996, McPherson 2014, among others)

◆ For more details, see Ahn (*in progress*)

> **REAFR SOLUTION**
>
> REAFR is not a violation of QAC, but is the result of LSOR syntax and what Phonology does with an F-marked silent head.

A.8.   Defining Depth of Embedding

In order for a depth-based NSR to be considered, we need a formal definition of depth

- Below is a first pass at such a definition

 (101)   **Depth of Embedding** (to be revised):
  A syntactic object, X, is more deeply embedded than some other syntactic object, Y, provided that no copy of X c-commands all copies of Y

  ▸ In informal terms, a constituent is most embedded if it doesn't c-command (all the copies of) any other constituent.

However, this definition of depth does not make a clear prediction about what is most deeply embedded when a specifier is more structurally complex than its sister

- Let us consider an example of this, (102), and its structure at Spell-Out, (103):

  (102)   I saw funny clowns _dánce_

  (103)
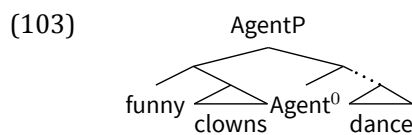
  ▸ In the tree above, our original depth of embedding definition would allow both _clowns_ to be more embedded than _dance_ and vice-versa, since there is no c-command between the two

  ▸ Intuitively, however, there is a sense in which _dance_ is more embedded

- Our intuitions come from the idea that there is a spine to the tree, and when considering candidates for depth of embedding we compare elements that merge on the spine

  ▸ The mechanism for determining depth of embedding searches down the path of complementation (the spine)

  ↳ It considers the nodes that are directly merged on the spine

  ▸ **It does not look into specifiers' structure**

- **The NSR considers non-complements to be atomic units, without any structural depth**

  ▸ Things that (re-)merge in non-complement positions behave structurally as atoms

  ↳ See Cinque 1993 and Uriagereka 1999 (a similar but different idea is explored by Hornstein (2010))

  ↳ Cinque 1993 (paraphrased): when a non-complement merges with the path of complementation, that non-complement is only visible as a structural atom.
  "This implies that no matter how complex the specifier of CP, AgrP, and DP, it will never win over a complement, or, in the absence of [a complement], over the head." (_ibid._)

  ▸ Specifiers behave as though they have been previously sent to Spell-Out

  ↳ Specifiers have their own PS assigned internally, before merging on the spine

  ↳ Consider an example non-complement, "XP": the PS for XP gets assigned within XP, according to what is most deeply embedded in XP

  ↳ (XP may also end up being assigned the PS for a larger Spell-Out Domain containing it, as well)

  ↳ Uriagereka 1999 follows the same logic in the domain of linearization – $ is an example of a non-complement's root node:

  ↳ "...elements dominated by $ precede whatever $ precedes. [...] this is a direct consequence of the fact that [the non-complement $] _**has been spelled-out separately [...] in a different derivational cascade**_." (emphasis mine)

- This leads us to a finalized conceptualization of Depth of Embedding[40]

(104) **Depth of Embedding** (finalized):

    a. A syntactic object, X, is more deeply embedded than some other syntactic object, Y, provided that no copy of X c-commands all copies of Y.

    b. The internal structure of non-complements is not accessible when calculating depth for a given domain.

For a more in-depth look at other possible definitions of depth of embedding, see Ahn, *in prep.*

A.9.   What to Look for to Find LSOR Markers

Find the baseline for subject-bound anaphors – there might be multiple ways of expressing these:

(105)   The man dislikes himself.

(106)   The thieves defended themselves.

- Prediction: if LSOR is marked in some way in the signal, it should be detectable in (one of the ways of expressing) these kinds of examples.

Find out what form you get when there is an island that includes the reflexive but excludes (all silent objects referring to) the subject binder:

(107)   The man dislikes people like himself.

(108)   The thieves defended the murderers and themselves.

- Prediction: whatever LSOR marking there is, it should be absent here.

Find out what form you get when there are multiple objects, the lower of which is in a PP, and is subject bound.

(109)   The psychiatrist told the woman about the boy.

(110)   Which boy did the psychiatrist tell the woman about?

- If movement can be applied to "the boy" in (109), as in (110). We'll check (111) and (112). If not, is there a preposition that can be stranded? Or is there another way of expressing this such that the thematically lowest argument can move?

- Prediction: whatever LSOR marking there is, it should be here (if movement (110) is possible).

Find out what happens when the reflexive in a PP is bound by a higher object, or by a passive subject.

(111)   The psychiatrist told the woman about herself.

(112)   The woman was told about herself (by the psychiatrist).

- Prediction: whatever LSOR marking there is, it should be absent here.

---

[40]More radically, the internal structure of non-complements is *never* accessible; non-structural operations might have access to internal elements of non-complements – see Hornstein 2010's conceptualization of Copy.

Find out what form you get in a double object construction (if one exists), when the lower argument is subject bound.

(113)   The principal showed the teachers the problem.

(114)   Which teachers did the principal show the problem?

- If movement can be applied to "the teachers" in (113), as in (114). We'll check (115). If not, does "the teachers" look like a subject of a lower clause that cannot move for independent reasons? Is there another way of expressing this such that the thematically lowest argument can move?

- <u>Prediction</u>: whatever LSOR marking there is, it should be here (if movement (114) is possible).

Find out what happens when an object reflexive is bound by a higher object, or by a passive subject.

(115)   The principal showed the teachers themselves.

(116)   The teachers were shown themselves (by the principal).

- <u>Prediction</u>: whatever LSOR marking there is, it should be absent here. (If the reflexive marker in (115) looks like the LSOR marker, maybe 113 really involves a biclausal structure, where the higher surface-object is really a subject that can license LSOR.)