Reflexes of Reflexivity: Locality and the Interfaces[*]
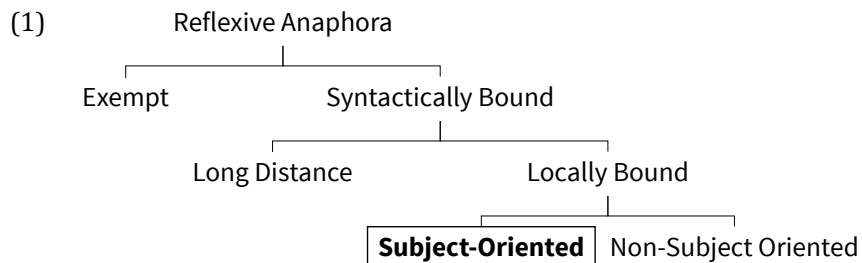
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1. Introduction

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**)

- 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   ꜱᴜʙᴊ.1-ᴘꜱᴛ-**LSOR**-cook-ᴀᴘᴘʟ-ꜰᴠ   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?

At the same time, **not all subjects can license LSOR**

- As is well-reported (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.

> **INFORMED SUBJECT-ORIENTATION PUZZLE**
>
> Why can *only some subjects* license LSOR?

- How could a marker or reflexivity be sensitive to the type of subject?
- And with constraints on locality, how could this sensitivity be formalized, when the two could be rather far apart?

**Both of these puzzles will require an understanding of the syntax of subjects and the licensing of LSOR anaphors**

Little attention has been paid to these entirely critical puzzles

- The generative account I propose not only solves these puzzles, but can also distinguish LSOR from non-LSOR without stipulation

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

- There are two core components of this Reflexive Voice^0, each of which will impose constraints on the derivation:

  1: **a semantic reflexivizer** (associated with a unique grammatical Voice^0, REFL)

  2: **syntactic movement of the anaphor** (triggered by that same semantic reflexivizer)

  BASIC PROPOSAL

  (3)
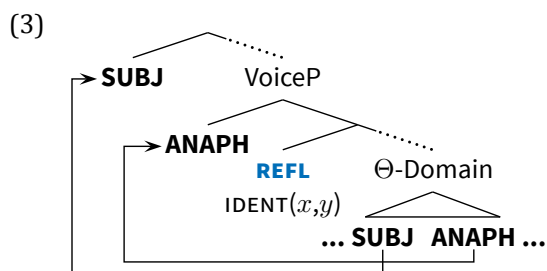
Lastly, there is wide variety in the "strategies" of LSOR morphosyntactic marking

- Some combination of special reflexive pronouns, special word orders, verbal affixes, etc. ...
- Non-generativists would take this as support that languages can do pretty much anything

Thus generativists are tasked with answering the following question

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

- Using data from a broad range of languages, I argue that there are limits to the possibilities
- Those limits arise from REFL Voice^0 and locality of selection

> **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

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 sɔɔ ככ *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
  (4)   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

(5)   a.   Lucie $\boxed{\textbf{s'}}$ est   vu   [French]
            Lucie **LSOR** PERF seen
            'Lucie saw herself.'

  b.   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/Alan.'

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

- ◆ That (5c) contains an island is demonstrated by the ungrammaticality of WH-extraction from the same position: **Qui a Lucie compté cinq filles en dehors (de)?*
  - ▸ Other examples similar to (5c) can be constructed using any number of islands (e.g. coordination, complex NP, etc.)

3

- ◆ 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.):

(6) 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 (6a) 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/raising clauses; Kayne 1975, Burzio 1986, Lidz 1996, Rizzi 1986, Sportiche 2010, Storoshenko 2009)

(7) 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.'

(8) 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

Coargument/valency-reducing theories cannot distinguish subjects from non-subjects in the relevant way

Existing movement theories incorrectly predict all subjects to be able to license LSOR

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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)**[2]

  - Being a D-subject is insufficient: A thematic subject of a passive cannot license LSOR

    (9) * 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$_i$.'

  - Being a S-subject is insufficient: A derived (grammatical) subject in a passive cannot license LSOR

    (10) * 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, Mediopassive, 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)[3]

- 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. Harley 2012)

  - It is endowed with an EPP feature that attracts LSOR reflexive argument[4]

    (11)   VoiceP
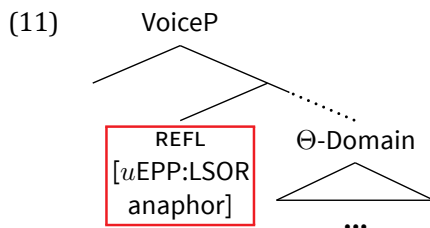
- Semantically, **REFL coidentifies two arguments**

  - The reflexive anaphor and the subject

  - REFL <u>is</u> semantic reflexivity

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[2]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.

[3]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.

[4]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.
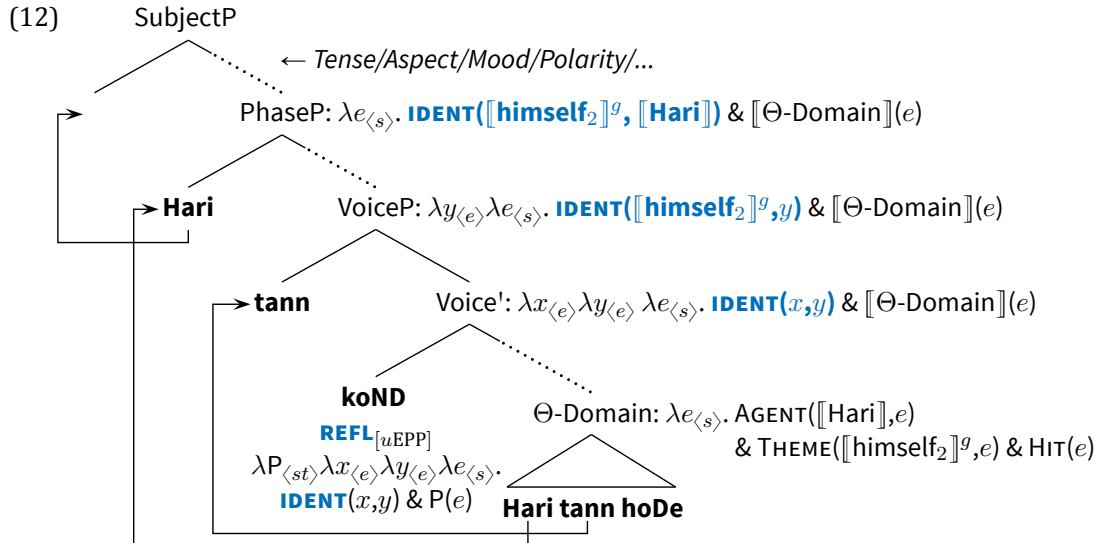
3.2. A Derivation

To see how this works, we will run through the (relevant portion of the) syntactic derivation for (8a):

(8a) 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:

(12) SubjectP

PhaseP: $\lambda e_{\langle s \rangle}$. **IDENT**($[\![$**himself$_2$**$]\!]^g$, $[\![$**Hari**$]\!]$) & $[\![\Theta\text{-Domain}]\!](e)$

Hari   VoiceP: $\lambda y_{\langle e \rangle}\lambda e_{\langle s \rangle}$. **IDENT**($[\![$**himself$_2$**$]\!]^g$,$y$) & $[\![\Theta\text{-Domain}]\!](e)$

tann   Voice': $\lambda x_{\langle e \rangle}\lambda y_{\langle e \rangle}\lambda e_{\langle s \rangle}$. **IDENT**($x$,$y$) & $[\![\Theta\text{-Domain}]\!](e)$

koND
REFL$_{[u\text{EPP}]}$ Θ-Domain: $\lambda e_{\langle s \rangle}$. AGENT($[\![$Hari$]\!]$,$e$)
$\lambda P_{\langle st \rangle}\lambda x_{\langle e \rangle}\lambda y_{\langle e \rangle}\lambda e_{\langle s \rangle}$.   & THEME($[\![$himself$_2]\!]^g$,$e$) & HIT($e$)
IDENT(x,y) & P(e)   **Hari tann hoDe**

- ◆ *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.)[5]

- ◆ *Hari* moves from its thematic position to PhaseP, as it moves up to the subject position

  - ▸ 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 PhaseP, respectively, to saturate the identity function's lambdas

- ◆ Though the anaphor is hierarchically superior to the subject at the completion of the VoiceP, the anaphor is not attracted to SubjectP.

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

  - ▸ Or maybe because it is no longer an 'active' goal (all its features are checked; Chomsky 2000).[6]

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[5]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 (In Progress) for more discussion.
[6]This may in fact derive the Anaphor Agreement Effect, as laid out by Rizzi (1990) and Woolford (1999).

Some notes on the derivation in (12):

- ◆ 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.6)
  - ▸ 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[7]
- ◆ 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)
    - ↳ <u>This isn't novel</u>: 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.

There are <u>only two main components</u> of this LSOR derivation

- ◆ (They may be formalized in different ways or in different frameworks[8])

> **THE CORE UNDERPINNINGS OF LSOR**
>
> (i) **a unique Voice** for reflexivity, and
> (ii) **movement of the anaphor** 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, <u>only the subject occurs in a position where it can saturate the second of IDENT's arguments</u>
  - ▸ 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[9]

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[7]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.

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

[9]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 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).

- The reflexive argument **must move to VoiceP** for the derivation to converge[10]
  - ‣ This requires that it not be merged in an island not containing VoiceP, even in languages where there is no obvious movement (cf. 6)

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

In addition, 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

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TYPOLOGICAL QUESTION

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

- The task for the generative linguist is to show that the possibilities are actually finite and constrained

Broadly speaking, the solution 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.

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

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:

(13)

	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*

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

- ◆ 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 (Alexiadou and Doron 2012)
  - ▸ Modern Greek uses the same non-active voice paradigm for middles, passives, and reflexives[11] (Embick 1998, Alexiadou and Doron 2012)

(14)   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 very small typology with a small set of languages and $Voice^0$s:[12]

(15)

	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

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[11]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.

[12]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**[13] (e.g. Geniušienė 1987, Lidz 1996)

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

(16)   **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:

(17)   Greek[14]

   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.   ?[15]sistisa   tin   Maria   ston eafto tis   [Object Oriented]
         introduced. ACT .1S   the   Maria   to.herself
         "I introduced Maria to herself"

   ▸ To be clear, (17b-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:

(18)   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:

(19)   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$_1$.'*

---

[13]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
[14]Thanks to Nikos Angelopoulos for the judgments
[15](17c) is highly context dependent; my informants found it did not find it good until explaining a context where Maria has amnesia.

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

(20)

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

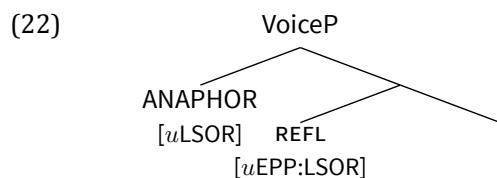*Variation in 3Pl Pronominals Across a Selection of Languages*

◆ 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:

(21) **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 an-
      tecedent to be, e.g., a direct object[16]

◆ In the domain of local subjects, this generalization is derived with **REFL's ability to place selectional
   restrictions on the anaphor it selects**[17]

   ▸ 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

      (22)   VoiceP
                       /   \
              ANAPHOR   \
              $[u\text{LSOR}]$ REFL
                            $[u\text{EPP:LSOR}]$

An additional benefit of this selection-based analysis for unique LSOR forms:

◆ The non-LSOR anaphor will be the same as the anaphor that occurs in islands while being local-subject
   bound

   ▸ (cf. island data in (5), (6))

◆ Because neither object-oriented anaphors nor those in islands will have the $[u\text{LSOR}]$ feature

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 auxil-
   iaries (French/Italian)

   ▸ Lakhota Agreement

      (23) a. m -ik- pázo   [REFL]
               1s- REFL-display
               '*I displayed myself.*'

            b. wa -pázo   [ACT]
               1s- display
               '*I displayed (it).*'

---

[16]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).

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

▸ Kharia TAM marking

(24) a.   yo -**Dom**-ki̲ -kiyar   [REFL]
            see-**REFL**-PST-DU
            'The two of them saw themselves'

     b.   lebu -ki -te   yo -yo̲' -j   [ACT]
            person-PL-OBL   see-PST -1SG
            'I saw the people'

▸ French auxiliary selection

(25) a.   Sa femme **s'**   est̲ décrit   à Jean   [REFL]
            His wife   **LSOR** PERF describe.PART to Jean
            'His wife described herself to Jean.'

     b.   Sa femme l'   a̲   décrit   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[18]

◆ 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:

(26)   **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.

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.   What about English?

How can we be sure that REFL Voice is employed in languages that lack overt morpho-syntactic marking for LSOR (e.g. English)?

◆ Closer investigation reveals differences between LSOR and non-LSOR

◆ **Ahn (in progress) shows English LSOR anaphors differ prosodically**

(27) a.   Liz embárrassed **herself**.   (28) a.   My food didn't eat ITSÉLF.
     b.   Liz embarrassed Jáck.   b. #My food didn't eat JOHN.
     c.   Liz embarrassed Jack or hersélf.   c. #My food didn't eat John or ITSÉLF.

---

[18]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 data can be taken to show that VoiceP is within the same phase as the Θ-Domain (as seen in (12) before; see Legate 2003)

▸ See Ahn 2012a, 2012b, in progress, and the Appendix for more data and discussion

4.5. Crosslinguistic Summary

LSOR clauses may resemble actives, passives, or neither along several dimensions:[19]

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

(29)

LSOR clauses...	...pattern like actives	...pattern like non-actives	...pattern distinctly
Voice morphology	English	Greek	Kannada
Agreement morphology	Chickasaw	Lakhota	Shona
TAM Markers	Mandinka	Kharia	?
Auxiliary selection[20]	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. §3.3)

◆ 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'

4.6. Typological Conclusions

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

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

(21) **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.

---

[19]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.)

[20]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:DISTPAST do.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).

(26)   **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.   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 the syntax-semantics interface and locality of selection

- ◆ **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

- ◆ **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

6.   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

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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:

  (31)   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 (32), behave as active clauses, in that they use the '*have*' perfect auxiliary:

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

(31) and (32) 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:

  (33)   <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.

  (34)   <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:

  (35)   <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.[21]

This raises another question: why Rule J?

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

  (36)   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.[22]

- ◆ 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"

---

[21]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~~].

[22]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.

A.2.   More on LSOR in English

English has (at least) two kinds of reflexive anaphors that can appear in argument positions

- ◆ One that behaves (a priori) unexpectedly in its prosody – this is an LSOR marker
  - ▸ In broad-focus contexts, they "avoid" phrasal stress where other constituents "attract" it
  - ▸ In focused-reflexivity contexts, they bear the focal stress

- ◆ One that behaves prosodically as other constituents in the same contexts

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:

  (37)   English LSOR markers
       i.   Reflexives in LSOR appear to be phrasally extrametrical
       ii.   Reflexives in LSOR can bear special focus (REAFR)

There are constraints on these behaviors

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

- ◆ Data from phrasal stress:

  (39)   Q: What happened at work today?   **(subject orientation)**
         A1:   Mark told Maxine about <u>Sára</u>.   *baseline*
         A2:   Mark told <u>Maxíne</u> about himself.   *LSOR, exceptional stress*
         A3:   Mark told Maxine about <u>hersélf</u>.   *non-LSOR, normal stress*

  (40)   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*

.

(41)   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*

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

◆ Data from REAFR:

(43) 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*

(44) 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*

.

(45) 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*

(46) Q: Who ___ looked the actors up?   **(linear order[23])**
      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 #?*

◆ For discussions how the theory presented in (12) can derive these prosodic facts, see Ahn 2012a, 2012b, and In Progress.

A.3. More Cross-Linguistic Data

Below are several the morpho-syntactic configurations that many languages employ when the local reflexivity exhibits LSOR properties:[24]

(47)   (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$_2$'

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

(49)   (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$_{1/*2}$'

(50)   (Finnish[25], 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$_{2/*1}$~~].'

---

[23]Variability has been found here, in which both word orders of (46) are fine for some speakers. The fact that for some speakers (46A3) 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.

[24]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).

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

(51)   (French, Romance; Sportiche 2010)

Marie **se** montre Jean
Marie **REFL** show.3SG John
'Marie$_1$ is showing John$_2$ to herself$_1$/*himself$_2$'

(52)   (Greek, Hellenic; Tsimpli 1989)

O Yanis **afto**- ⊠ **-i** -ke
The Yani.NOM **self**- destroy -**NONACT**-3sg.past
'Yani destroyed himself'

(53)   (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$_{1/*2}$'

(54)   (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$_{1/*2}$'

(55)   (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$_2$'

(56)   (Lakhota, Siouan; Charnavel 2009)[26]

iwó- m- igl- ⊠ -e
talk.about-1sg.II-REFL- talk.about -abl
'I talk about myself'

(57)   (Lango, Nilo-Saharan; Foley and Van Valin 1984)

Lócà ò- kwá -o dákó pìr -ɛ́ **kɛnɛ**
man 3SG.A- ask -3SG.U woman about -3SG **self**
'The man$_1$ asked the woman about himself$_1$/*herself$_2$.'

(58)   (Malayalam, Dravidian; Jayaseelan 1999)

raaman krisṇan -ooḍə **ṭan**-ne patti **ṭanne** samsaariccu
Raman Krishnan-to **self**-ACC about **EMPH** talked
'Raman$_1$ talked to Krishnan to himself$_{1/*2}$'

(59)   (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$_{1/*2}$'

(60)   (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$_2$'

(61)   (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$_2$'

(62)   (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'

---

[26]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*'.

(63)   (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'*

(64)   (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.4.   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
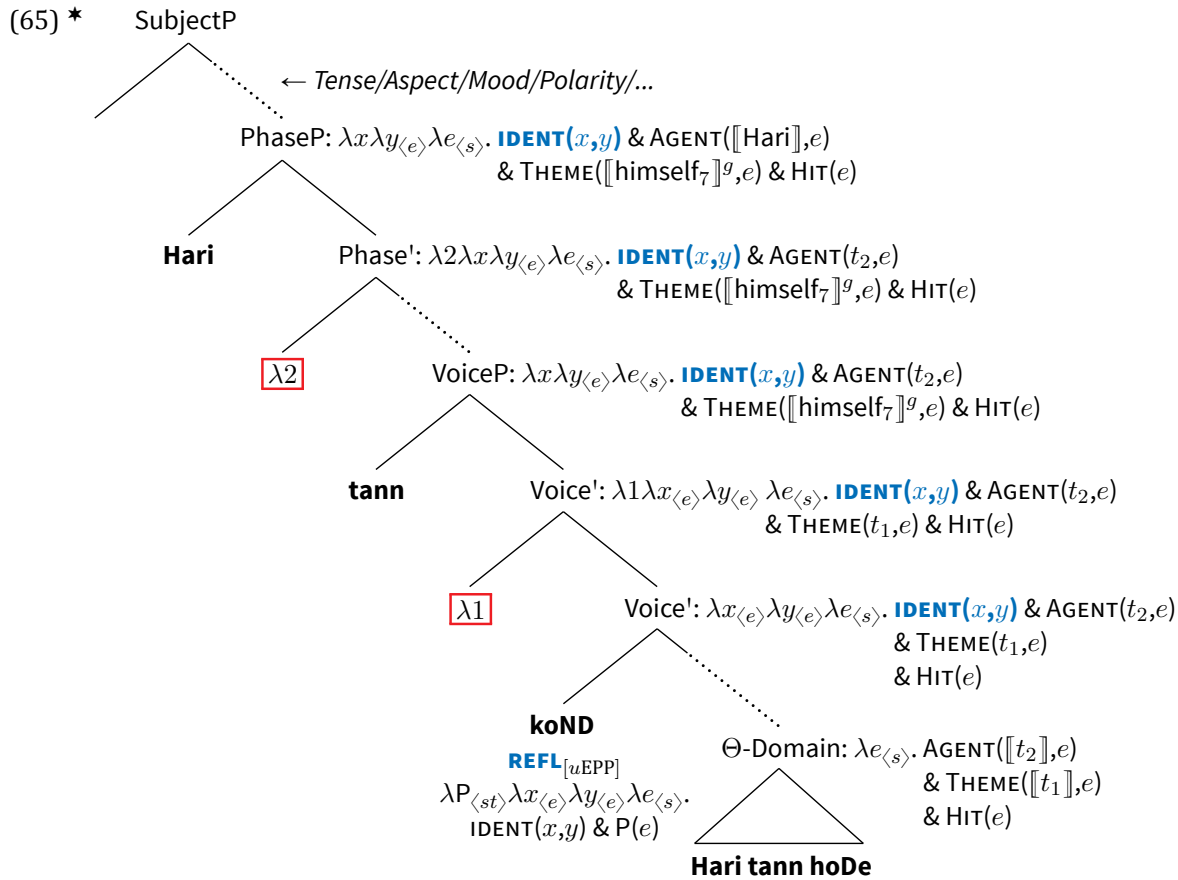- I have yet to find any evidence supporting this kind of variation

A.5. 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)
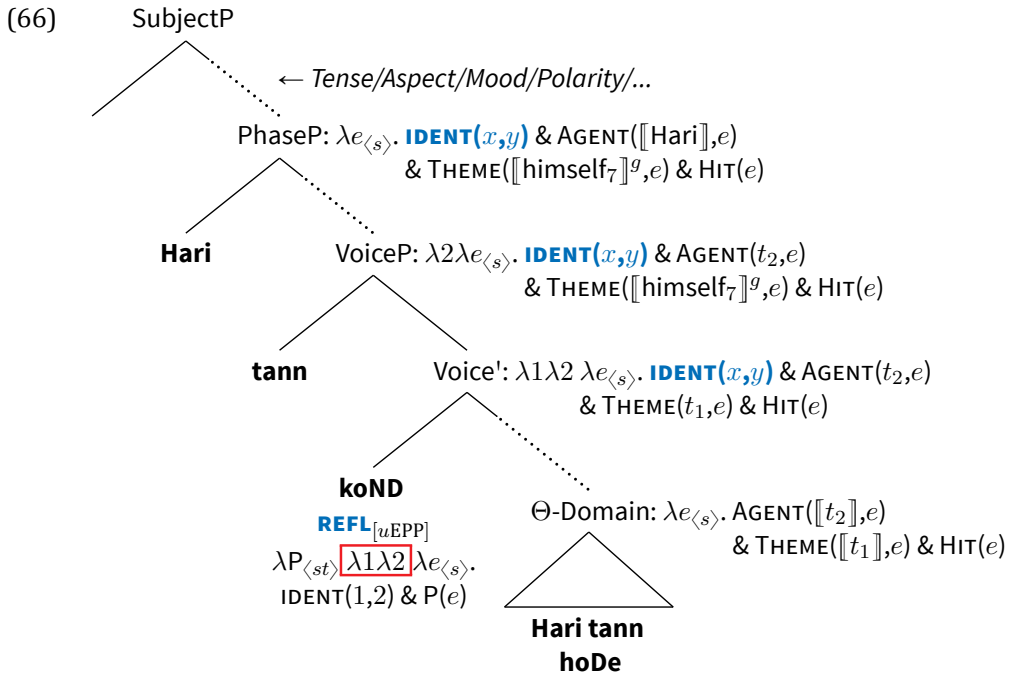
We will entertain a few possibilities using lambda abstraction

- As a first pass, let us attempt a derivation identical to (12), with the exception that lambda abstraction is used (**Note that (65) does _not_ converge**)

(65) * SubjectP

$\leftarrow$ _Tense/Aspect/Mood/Polarity/…_

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

Hari

Phase': $\lambda 2 \lambda x \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}$. **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$_{[u\text{EPP}]}$
$\lambda P_{\langle st \rangle} \lambda x_{\langle e \rangle} \lambda y_{\langle e \rangle} \lambda e_{\langle s \rangle}$. IDENT($x$,$y$) & P($e$)

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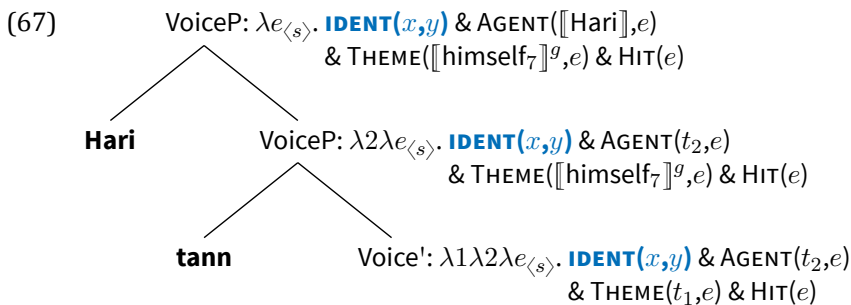
Hari tann hoDe

- 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 (65), as in (66):[27]

    (66)   SubjectP

    ← *Tense/Aspect/Mood/Polarity/...*

    PhaseP: $\lambda e_{\langle s\rangle}.$ **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$_{[uEPP]}$
    $\lambda P_{\langle st\rangle} \boxed{\lambda 1 \lambda 2}\, \lambda e_{\langle s\rangle}.$
    IDENT(1,2) & P(e)

    Θ-Domain: $\lambda e_{\langle s\rangle}.$ AGENT($[\![t_2]\!]$,e)
    & THEME($[\![t_1]\!]$,e) & HIT(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 (66) in which we have lambda-abstraction leans on movement in the same way as (12)
    - ↪ 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.

    (67)   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. (66) and (67) only differ in that:
    - ↪ The subject is more syntactically local to the head that introduces its lambda-abstract, and

---

[27]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.)

↳ It relies on the existence multiple specifiers

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

- See Stokhof (2006)'s characterization of Montague grammar (and subsequent generative approaches to the syntax-semantics interface)

  ‣ "Semantics is syntax-driven, syntax is semantically motivated"

  ‣ "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."

A.6.   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:

  (68) $\llbracket \text{himself} \rrbracket = \lambda R_{\langle eest \rangle} \lambda x. \, R(x,x)$

- I'll call this theory the Anaphor=Reflexivizer (A=R) theory; and my theory will be the Voice=Reflexivizer (V=R) theory

- 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 <u>does</u> 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[28]

- <u>What must remain constant</u>: a unique REFL VoiceP, to which reflexives move

- <u>What must differ</u>: the denotations of the reflexivizer function (since structural locus differs)

- If REFL Voice is <u>not</u> implemented...

  ‣ We almost certainly lose the connection to passives

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

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

---

[28]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.7.   What to Look for to Find LSOR Markers

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

(69)   The man dislikes himself.

(70)   The thieves defended themselves.

- ◆ <u>Prediction</u>: 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 exclude (all silent objects referring to) the subject binder:

(71)   The man dislikes people like himself.

(72)   The thieves defended the murderers and themselves.

- ◆ <u>Prediction</u>: 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.

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

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

- ◆ If movement can be applied to "the boy" in (73), as in (74). We'll check (75) and (76). 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?
- ◆ <u>Prediction</u>: whatever LSOR marking there is, it should be here (if movement (74) is possible).

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

(75)   The psychiatrist told the woman about herself.

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

- ◆ <u>Prediction</u>: whatever LSOR marking there is, it should be absent here.

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

(77)   The principal showed the teachers the problem.

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

- ◆ If movement can be applied to "the teachers" in (77), as in (78). We'll check (79). 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 (78) is possible).

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

(79)   The principal showed the teachers themselves.

(80)   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 (79) looks like the LSOR marker, maybe 77 really involves a biclausal structure, where the higher surface-object is really a subject that can license LSOR.)