

Giving Reflexivity a Voice: Twin Reflexives in English*

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0. Introduction

0.1. The Problem

A theory of binding has been **central to our understanding** of hierarchical structure

- Previous proposals (Reuland 2011, and references therein) have been largely successful
- But they each make different empirical predictions, and none are entirely correct

I present some **novel prosodic data** which document a hitherto unnoted **distinction among reflexives in English**

- I argue that English reflexive anaphors behave as though they are divided into two¹ subclasses:
 - one exhibits abnormal prosodic behavior²

(1) What happened at the party?

- a. Jenna tried to embarrass her *bóss*.
- b. #Jenna tried to embarrass *hersélf*.
- c. Jenna tried to *embárrass* herself.

(2) Who introduced Moira to Charles?

- a. **BÍLL** introduced Moira to Charles.
- b. **CHÁRLES** introduced Moira to Charles
- c. Charles introduced Moira to **HIMSÉLF**.

(Subj. Antecedent)

- the other prosodically behaves as other DPs

(3) What happened at the party?

- a. Jenna tried to embarrass herself and her *bóss*.
- b. Jenna tried to embarrass her boss and *hersélf*.
- c. #Jenna tried to embarrass her *bóss* and herself.

(Refl. in an Island)

(4) Who did Charles introduce __ to Moira?

- a. Charles introduced **BÍLL** to Moira.
- b. Charles introduced **MÓIRA** to Moira.
- c. #Charles introduced Moira to **HERSÉLF**.

(DO Antecedent)

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¹Reflexives have been divided into other subclasses, such as the exempt/non-exempt distinction (Pollard and Sag 1992, Reinhart and Reuland 1993, *inter alia*). The theory presented here “cuts the pie” in a different way, (seemingly) orthogonal to other distinctions.

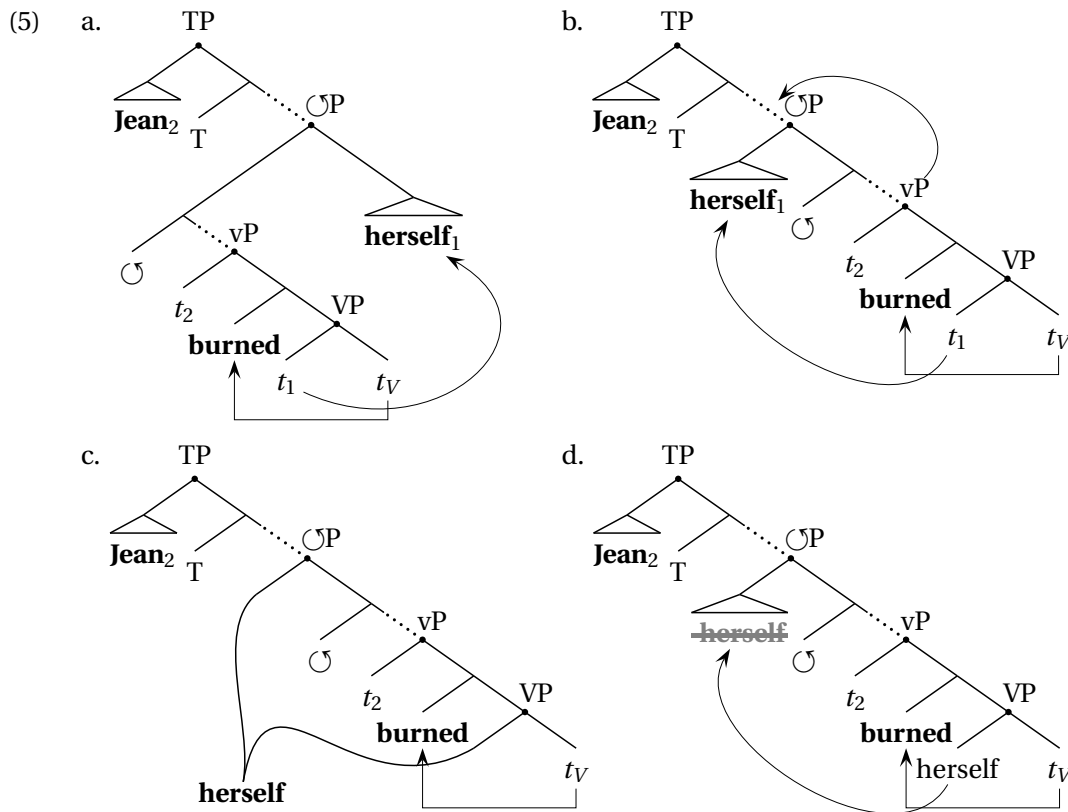
²Underline and italics corresponds to new information: H* in MAE_ToBI (Beckman and Hirschberg 1994). Bolded small caps correspond to contrastive foci: L+H* in MAE_ToBI.

- **Taking seriously this prosodic data**, how must we go about explaining this?
 - ▶ It's not *a priori* clear why (1) and (2) should share distributional constraints
 - ▶ But the data indicate that they are in fact **coextensive**
 - ▶ In what way are being in an island and not having a subject antecedent related?

0.2. A Syntactic Solution

- Following the **hypothesis that prosody is indicative of syntactic structure** (e.g. Selkirk 2011), I propose that the reflexive anaphors in (1)-(2) involve a derivation with an **additional movement operation** to a phrase I temporarily refer to as “ ζ P”

- Thus the derivation will look like one of the solutions in (5): rightward movement, remnant movement, multi-dominance, or spell-out of a lower copy.³



- This ζ P will be what marks a clause as (syntactically) reflexive
- On this surface, this resembles the SELF-movement promoted in e.g. Reuland (2011)
 - But this movement is **overt movement** in the narrow syntax
 - ▶ LF movement would not be able to feed the prosodic derivations
 - This movement is motivated by ordinary reasons of syntactic feature-checking and semantic compositionality
 - ▶ No need for a separate notion of “reflexive-marking”
- Moreover, an analysis like this **correctly predicts syntactic commonalities** with Romance *se/si* (cf. Sportiche 2010)

³Without a lot of additional movements, rightward movement and remnant movement face problems with word order. That is, the reflexive is not always at the right edge of the clause. Instead, spell-out of the lower copy seems most likely. See Appendix C.

1. Prosodic Patterns

1.1. Focus Stress Patterns

Prosodic and Semantic Foci

- All standard theories of focus (e.g. Halliday 1967, Rooth 1992, Selkirk 1996, Schwarzschild 1999, a.o.) require something like Question-Answer Congruence (QAC)

- **Question-Answer Congruence:** An appropriate answer to a WH-question must be (semantically and prosodically) focused

- (6) Who drank all the beer?
- LÓGAN** drank all the beer.
 - #Logan **DRÁNK** all the beer.
 - #Logan drank all the **BEÉR**.

- In other words, semantically focused constituents must bear prosodic focus
 - ▶ QAC rules out (5b,c)

Realizing External Argument Focus on a Reflexive

- Note the fact that (7) is ambiguous:

- (7) Johnny burned **HIMSÉLF**
- Who did Johnny burn? Johnny burned **HIMSÉLF**. (Obj.Foc.)
 - Who burned Johnny? Johnny burned **HIMSÉLF**. (Subj.Foc.)

- I term (7b) the Realizing External Argument Focus on a Reflexive (REAFR) phenomenon⁴

- ▶ REAFR is characterized by:

- the external argument subject⁵ being the semantic focus, without a pitch accent
- a pitch accent on the object reflexive, without it being the semantic focus

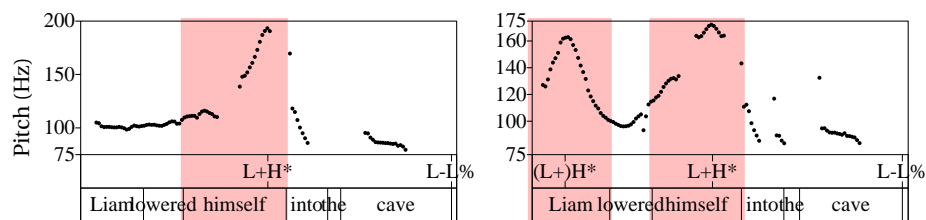
- ▶ REAFR is exactly what we **don't expect**, given QAC

- Some naturalistic data:

- (8) a. [Kids] practically raise **THEMSÉLVES**, what with the Internet and all. (Simpsons Ep.233)
 ≈ answer to the implicit question: “Who raises kids?”
- b. The twin towers didn't blow **THEMSÉLVES** up. (bumper sticker)
 ≈ answer to the implicit question: “What blew the twin towers up?”

- In addition to the reflexive **needing** to bear focus, the external argument itself may **optionally** bear focus

- (9) Who lowered Liam into the cave?
- #**LÍAM** lowered himself into the cave.
 - Liam lowered **HIMSÉLF** into the cave. (REAFR)
 - LÍAM** lowered **HIMSÉLF** into the cave. (Dual Focus)

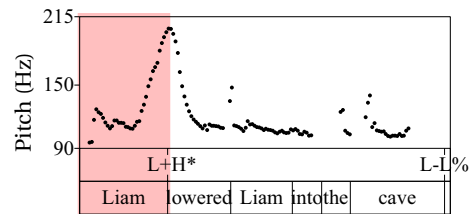


⁴Thanks go to Natasha Abner, for helping me with coming upon this term for the phenomenon.

⁵I take the term “external argument” to refer to a clause’s highest thematic argument from the set {Agent, Cause, Experiencer}. It is also definable as the argument that becomes subject in an transitive clause.

- This pattern **disappears in non-reflexive clauses**; (9b) and (10a) form a minimal pair

- (10) Who lowered Liam into the cave?
- ÉMMMA lowered Liam into the cave.
 - LÍAM lowered Liam into the cave.



- ▶ Non-reflexive clauses like (9) are predicted under standard theories for QAC

- More data:

- (11) Who introduced Moira to Charles?
- BÍLL introduced Moira to Charles.
 - CHÁRLES introduced Moira to Charles.
 - Charles introduced Moira to HIMSÉLE. (REAFR)
 - CHÁRLES introduced Moira to HIMSÉLF. (Dual Foc.)

- (12) Who likes the blonde actress?
- The rural IÚROR likes the blonde actress.
 - The blonde ÁCTRESS likes the blonde actress.
 - The blonde actress likes HERSÉLF. (REAFR)
 - The blonde ÁCTRESS likes HERSÉLF. (Dual Foc.)

- Thus this REAFR phenomenon (which, as we said disobeys QAC) is generally **unpredicted**⁶

- Apparent mismatches between semantic and prosodic foci are rare
- But maybe REAFR is the result of focused reflexive anaphors in turn focusing their antecedent⁷

- ▶ **BUT**, the data is more complex than this kind of analysis would predict

- (13) Who likes smart people like Ms. Adler?
#Ms. Adler likes smart people like HERSÉLF. (REAFR)

- REAFR doesn't occur in non-reflexive clauses

- It only occurs with certain reflexives, such as (11c) and (12c)
 - ▶ We will call these **clausal reflexives (CRs)**
- It doesn't occur with other reflexives (non-CRs), such as (13)
- Question to return to: What is the distribution of CRs/non-CRs?

REAFR is an apparent mismatch between prosody and semantics
REAFR only occurs in syntactically reflexive clauses that employ CRs

⁶But see Spathas (2010) for a semantic analysis, which cannot capture the syntactic restrictions to be shown here.

⁷See Appendix G for detailed arguments against this analysis, as well as other inadequate analyses.

1.2. Sentential Stress Patterns

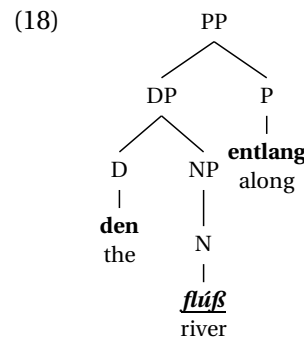
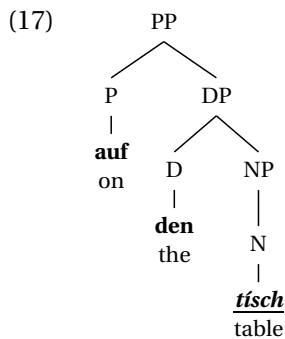
Theories of Default Sentential Stress

- In out-of-the-blue contexts in English, the rightmost word quite often bears default sentential stress, and the Default Sentential Stress (DSS) that goes with it⁸
 - When answering a question like “What happened?” (where everything in the response is new information), the DSS is the most-prominent accent in the sentence
 - ▶ In English, this accent typically falls on the rightmost word-level stress of the sentence
- (14) What happened at the party?
Some singers came in and began to entertain the guésts
- This was captured by the Nuclear Stress Rule (NSR) of Chomsky and Halle (1968)

(15) **Nuclear Stress Rule** (English): The rightmost primarily-stressed vowel in a domain receives the highest stress
 - However, as Cinque (1993) aptly discusses, the NSR is an inadequate analysis
 - Assume the NSR is correct – it must be parameterizable as left-/right-most to account for variation
 - ▶ Let’s also assume specifiers can be initial/final, and heads can be initial/final as well
 - ▶ Thus we expect eight possible kinds of languages, in which NSR parameter has no relation to other parameters
 - This prediction is too weak
 - ▶ Cross-linguistic patterns help motivate this: **the object (more embedded than the verb) bears DSS regardless of headedness** (e.g. Donegan and Stampe 1983)

	DSS on Object	DSS on Verb
VO-language	✓	✗
OV-language	✓	✗

- ▶ Furthermore, in a mixed-word-order language like German, we might expect word order to feed DSS placement
- Instead, DSS tracks the most embedded constituent of the structure⁹
 - Cinque calls this the null theory of phrase stress, and gives data from German PPs:¹⁰



- Regardless of the headedness of the PP, phrasal stress is on the N (which is the most embedded)

⁸Though I discuss only phrasal stress at the sentential level, lower levels of phrasal stress are also relevant, but are set aside in this paper for reasons of space.

⁹Within a relevant DSS domain. Stowell (*forthcoming*) gives evidence from adverbials that this domain is roughly equal to Cinque (1999)’s VolitionalP. Namely, when VP-final, adverbs at, or below VolitionalP bear DSS, as in (21) – but the adverbs above VolitionalP do not, as in (23).

¹⁰It is indeed the case that Ps may independently bear DSS, as in particle Vs (Biskup et al., to appear):

(16) Er setzt den Wanderer über
he set the wanderer across
'He is ferrying over the wanderer.'

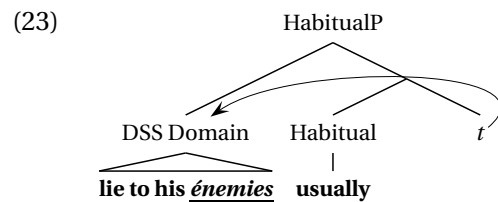
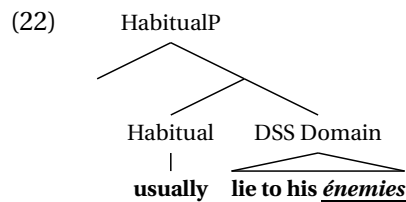
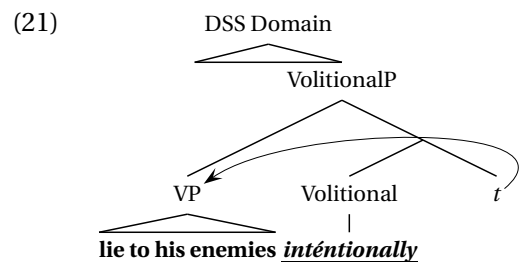
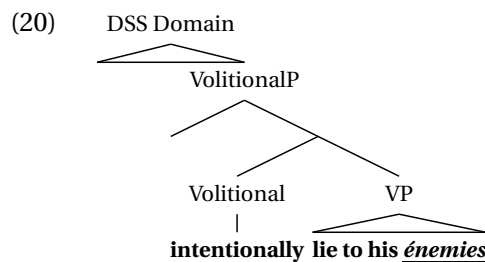
- But, this syntactic calculation of DSS placement cannot be performed after the derivation is fully complete¹¹

(19) What's going to happen in the next episode?

- Mr. Wyngarde will (probably/usually/intentionally/unremorsefully) lie to his *ennemis*.
- Mr. Wyngarde will lie to his enemies *intentionally/unremorsefully*.
- Mr. Wyngarde will lie to his *ennemis* probably/usually.
- *Mr. Wyngarde will lie to his enemies *probably/usually*.

– If *probably/usually* are right-hanging adverbs in the same way as (19b), (19c)–(19d) are **unexpected** if DSS is assigned by the NSR¹²

- These adverb facts, the German PP data, and the NSR's unsuccessful typological predictions indicate that **the NSR is inadequate**
- Assuming the null theory of phrasal stress, it **must** be that the adverb in (19b) is the most embedded
 - This seems at conflict with the fact that the adverb scopes over the VP
 - Solution: movement of the predicate (as in Cinque 1999)¹³
- This means some movements feed DSS calculation
 - Compare the location of DSS in (20) and (21)



- The most embedded element, **if moved within the DSS-domain**, is no longer the most embedded element
 - Specifically, VP is the most embedded element in (20)
 - but when it moves inside of that DSS domain in (21), *intentionally* is the most embedded

¹¹See Cinque (1993) for similar data with German Object shift feeding phrasal stress.

¹²An NSR account *might* work for (19c)–(19d) if DSS is assigned to the rightmost element at certain, fixed structural intervals (as Bresnan 1971 and Legate 2003 offer), and adverbs like *probably* and *usually* are outside the relevant interval. This would make different predictions, and *encounters problems*: for example in head-final environments in which the V does not bear DSS, e.g. German embedded clauses (Kahnemuyipour 2009). DSS is indeed derived in cyclic domains, but not by the NSR. See fn.9.

¹³Bobaljik (1999) argues that predicate fronting as in (21) is dispreferred on the grounds that you cannot know what has moved – is it the predicate that has moved, or is it the adverb? However, it is not the case that we cannot know – the prosody tells us what has moved. Assuming No Tampering (Chomsky 2008), the adverb cannot have lowered, but it must be the case that the adverb is the most embedded element (since it bears DSS). The only logical possibility is that the predicate has fronted, stranding the adverb as most embedded.

Default Sentential Stress and Reflexives

- This raises the question of what's happening with reflexives as in (24)¹⁴

(24) What happened at the party?
Some singers came in and began to *entertain* themselves.

- Compare the reflexive object in (24) with the R-expression object in (14)

(14) Some singers came in and began to entertain the *gués*ts.

- This pattern is quite robust:

(25) What happened in the kitchen?

- Remy accidentally burned *Marie*.
- #Remy accidentally burned *himsélf*.
- Remy accidentally *búrn*ed himself.

(26) What will happen at the end of the financial year?

- Warren might give a bonus to a *wó*man.
- #Warren might give a bonus to *himsélf*.
- Warren might give a *bón*us to himself.

(27) What happened at the meeting?

- I had Kitty describe her former *empló*yer.
- #I had Kitty describe *hersélf*.
- I had Kitty *descri*be herself.

- Moreover, **if we assumed that the NSR were correct**, we would need to stipulate something along the lines of “anaphoric elements avoid pitch accents” (e.g. Bresnan 1971), or that functional words (including reflexive anaphors) are invisible to stress assignment (e.g. Zubizarreta 1998)

- **BUT**, the data is more complex than this kind of analysis would predict

(28) Tell me something new.
Ms. Adler likes smart people like *hersélf*.

- Are the same non-CRs that can't participate in REAFR the reflexives that bear DSS, as in (28)?

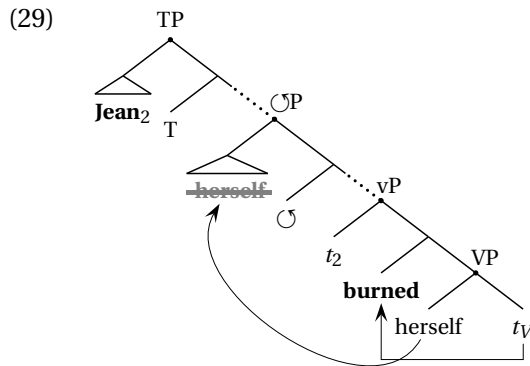
- If so, do we find the same constraints on DSS-avoidance as we do on participation in REAFR?

DSS is calculated based on depth of embedding
Movement may feed this calculation
Some reflexives (CRs?) avoid bearing DSS

1.3. Analysis Preview

- Taking the prosody-syntax connection seriously, it follows that the **DSS-avoiding reflexives are higher** than the other R-expression objects
 - But under UTAH (Baker 1988), the objects in (25)–(27) should all be generated in the same position
 - “Normal” objects seem to stay in this position, so that they're most embedded and bear DSS
 - So it must be that these **reflexives undergo movement**, whereby they leave this most embedded position; suggesting an analysis like (29)

¹⁴Some pronouns also behave exceptionally like this, but these “unstressed pronouns” have a different distribution from “unstressed reflexives”. See Appendix B.



- This overt, string-vacuous movement leaves “burned” as most embedded^{15,16}
 - ▶ We’ve already seen that movement can feed DSS calculation, in (21)
- This analysis looks strongly similar to Romance *se/si*
 - The reflexive moves **from a base theta position**, to somewhere **higher in the clause**¹⁷

(30) Jeanne $[S]_j$ est brûlée t_j (French)
 Jean REFL PERF-AUX burn.3SG.PRES
 ‘Jean burned herself’

2. Back to the Data

- Going back to the data, we want to look at how REAFR and reflexives’ DSS-avoidance are constrained
 - Do they have the same constraints as each other?
 - And what can their constraints tell us about the structure?

2.1. Island Sensitivity

- **Islands constrain the distribution of DSS-avoidance as well as REAFR**
 - This implicates movement for both, as in (29)
- A reflexive **cannot participate in REAFR** when generated within an island
 - Despite not obviously needing any movement
 - Reflexive in a coordinate structure island:

▶ Compare (31c) with (11c), repeated below

(31) Who introduced Moira to Erik and Charles?

- a. BÍLL introduced Moira to Erik and Charles.
- b. CHÁRLES introduced Moira to Erik and Charles.
- c. #Charles introduced Moira to Erik and HIMSÉLF.

(REAFR)

(11) c. Charles introduced Moira to HIMSÉLF.

- Reflexive in an adjunct island:

(32) Who counted five tourists besides Lucie? (Adopted from Reinhart and Reuland 1993)

- a. BÍLL counted five tourists besides Lucie.
- b. LÚCIE counted five tourists besides Lucie.
- c. #Lucie counted five tourists besides HERSÉLF.

(REAFR)

¹⁵The notion of “most embedded” is sensitive to all the positions of the reflexive in (28), and not just its spell-out position. In fact, the DSS-assignment mechanism likely lacks the relevant information to know which copies are spelled out and which aren’t.

¹⁶I’ve used the movement in that spells out the lower copy in (28). Nothing crucially relies on this, but see Appendix C.

¹⁷See Appendix A for a French derivation.

- Reflexive in a (reduced) relative-clause island:

(33) Who likes smart people like Ms. Adler?

- BILL likes smart people like Ms. Adler.
- Ms. ADLER likes smart people like Ms. Adler.
- #Ms. Adler likes smart people like HERSÉLE.

(REAFR)

- A reflexive **cannot avoid DSS** when generated within an island

- This is predicted by the movement suggested in (29)

- Reflexive in a coordinate structure island:

- ▶ Compare (34b) with (25c), repeated below:

(34) What happened yesterday at work?

- Marie kept accidentally injuring herself and Rémy.
- Marie kept accidentally injuring Remy and hersélf.
- #Marie kept accidentally injuring Rémy and herself.

(25) c. Marie kept accidentally injuring herself.

- Reflexive in an adjunct island:

(35) What happened in the lobby?

(Adopted from Reinhart and Reuland 1993)

- Lucie counted five tourists besides the American téachers.
- Lucie counted five tourists besides hersélf.
- #Lucie counted five tourists besides herself.

- Reflexive in a (reduced) relative-clause island:

(36) Tell me something new.

- Ms. Adler likes smart people like Ráven.
- Ms. Adler likes smart people like hersélf.
- #Ms. Adler likes smart people like herself.

- This is paralleled in the availability of French *se*:

(37) a. Lucie a compté cinq touristes en dehors d' elle-même.

Lucie has counted five tourists in outside of herself

b. *Lucie s est compté cinq touristes en dehors.

Lucie SE is counted five tourists in outside

Intended: "Lucie counted five tourists besides herself."

2.2. Passive Clauses

- DSS-avoidance and REAFR **cannot occur in a passive clause**

- This implicates the syntax of passives interferes with a derivation like (29)

- Perhaps it's the properties of "CP"

- A reflexive **cannot participate in REAFR** when the clause is in the passive voice

(38) Who was introduced __ to Ken?

- BILL was introduced to Ken.
- KÉN was introduced to Ken.
- #Ken was introduced to HIMSÉLE.

(REAFR)

- (39) What can't be put __ inside of this box?
 a. The **ÚNIVERSE** can't be put inside of this box.
 b. This **BÓX** can't be put inside of this box.
 c. #This box can't be put inside of **ITSÉLF**. (REAFR)
- (40) Who does Elastigirl have to save __ from Mr. Incredible?
 a. Elastigirl has to save **BÍLL** from Mr. Incredible.
 b. Elastigirl has to save Mr. **INCREDIBLE** from Mr. Incredible.
 c. #Elastigirl has to save Mr. Incredible from **HIMSÉLF**. (REAFR)
- A reflexive **cannot avoid DSS** when the clause is in the passive voice
- (41) What happened today?
 a. Ken was introduced to Angie's *friend*.
 b. Ken was introduced to *himsélf*.
 c. #Ken was *introducéed* to himself.
- (42) Tell me something that your theory of physics predicts.
 a. This box can't be put inside of a *bríck*.
 b. This box can't be put inside of *itsélf*.
 c. #This box can't be put *inside* of itself.
- (43) What do you think the movie's message was?
 a. Mr. Incredible had to be saved from his *sélfishness*.
 b. Mr. Incredible had to be saved from *himsélf*.
 c. #Mr. Incredible had to be *sáved* from himself.
- This is paralleled in the availability of French *se*:
- (44) a. Jean sera décrit à lui-même par sa femme (Kayne 1975:375)
 John will.be described to himself by his wife
 b. *Jean se sera décrit par sa femme
 John SE will.be described by his wife
 "John will be described to himself by his wife"

2.3. Subject-Orientation

- DSS-avoidance and REAFR **require the reflexive to be bound by the deep subject of its clause**
 – Perhaps it's something about “ \cup P” in (29)

Non-Subject Antecedents

- A reflexive **cannot participate in REAFR** when its antecedent is not the subject
- (45) Who did Angie introduce __ to Ken?
 a. Angie introduced **BÍLL** to Ken.
 b. Angie introduced **KÉN** to Ken.
 c. #Angie introduced Ken to **HIMSÉLF**. (REAFR¹⁸)
- (46) What can't you put __ inside of this box?
 a. You can't put the **ÚNIVERSE** inside of this box.
 b. You can't put this **BÓX** inside of this box.
 c. #You can't put this box inside of **ITSÉLF**. (REAFR)

¹⁸These aren't truly REAFR, since REAFR is defined as having an external argument antecede a reflexive.

- (47) Who does Elastigirl have to save __ from Mr. Incredible?
 a. Elastigirl has to save **BÍLL** from Mr. Incredible.
 b. Elastigirl has to save Mr. **INCREDIBLE** from Mr. Incredible.
 c. #Elastigirl has to save Mr. Incredible from **HIMSÉLF**. (REAFR)
- A reflexive **cannot avoid DSS** when its antecedent is not the subject
- (48) What happened today?
 a. Angie introduced Ken to her *friend*.
 b. Angie introduced Ken to *himsélf*.
 c. #Angie introduced *Kén* to himself.
- (49) Tell me something that your theory of physics predicts.
 a. You can't put a box inside of a *bríck*.
 b. You can't put a box inside of *itsélf*.
 c. #You can't put a box *insíde* of a itself.
- (50) What do you think the movie's message was?
 a. Elastigirl has to save Mr. Incredible from his *sélfishness*. (bit.ly/kTBg4H)
 b. Elastigirl has to save Mr. Incredible from *himsélf*.
 c. #Elastigirl has to save Mr. *Incrédible* from himself.
- This is paralleled in the availability of French *se*:
- (51) a. La psychiatrie a révélé Jean à lui-même. (Kayne 1975:371)
 The psychiatry has revealed John to himself.
 b. *La psychiatrie [s] est révélé Jean.
 The psychiatry SE is revealed John.
 "Psychiatry has revealed John to himself"

Derived Subject Antecedents

- A reflexive **cannot participate in REAFR** when its antecedent is not the clause's deep subject
- (52) Which student seems to Ken to be sick?
 a. **BÍLL** seems to Ken to be sick.
 b. **KÉN** seems to Ken to be sick.
 c. #Ken seems to **HIMSÉLF** to be sick. (REAFR)
- A reflexive **cannot avoid DSS** when its antecedent is not the clause's deep subject
- (53) Ask me any question.
 a. How does that patient seem to his *dóctor*?
 b. How does that patient seem to *himsélf*?
 c. #How does that patient *séem* to himself?
- This is paralleled in the availability of French *se*:
- (54) a. Jean semble déprimé à lui-même (Sportiche 2010)
 John seems depressed to himself
 b. *Jean_k [se_j] semble t_k déprimé (k = j)
 John SE seems depressed
 "John seems to himself to be depressed"

2.4. Summary

- Reflexives fall into two subclasses
 - those that **participate in REAFR/avoid DSS**, and those that **don't**
- The former contains only reflexives that (i) are outside of islands, (ii) are in non-passive clauses, and (iii) have subject antecedents
 - This subclass, **which exhibits strange prosody**, is called clausal reflexives (CRs)
 - There is also a subclass which is the **elsewhere case**: non-CRs
 - These two subclasses are **segmentally identical**, but have distinct prosodic behaviors
 - ▶ Of course they are segmentally distinct in languages like French (*se/lui-même*)
- The island-sensitivity is likely due to movement
 - As in the structure of (29)
- The subject-orientation and passive-restriction seem related to the movement's endpoint
 - How is this phrase's head formally defined?

CRs and non-CRs are derived from different structures, given a movement analysis
 CRs are derived by movement and properties of the phrase to which they move

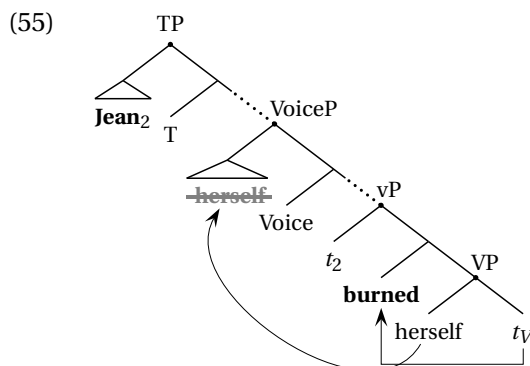
3. Giving Reflexivity a VoiceP

3.1. VoiceP?

- Voice⁰ is a **feature bundle** (Sailor & Ahn, *In Progress*)
 - There are different kinds of Voice⁰s (e.g. PASS Voice⁰, ACT Voice⁰, MID Voice⁰, etc.)
 - This head's **syntactic features** distinguish the properties of passive/active/middle/etc. clauses
- Voice⁰ is an **argument structure head**
 - Voice⁰ **merges with the theta-domain**
 - ▶ the theta domain is constant across different S-structures (UTAH)
 - This Voice⁰ is not the external-argument-introducer Voice⁰ in Kratzer 1996, Alexiadou et al. 2006¹⁹
 - ▶ **Voice⁰ is a set of instructions** which (partially) derives surface constituency

3.2. Reflexive Voice

- A **reflexive VoiceP** is the “ \cup P” whose properties have kept being referenced for the CR derivation



- What are these properties?

¹⁹The external argument cannot be introduced by the reflexive Voice⁰ for reasons we will see shortly. Also distinct from the Voice⁰ discussed in Koopman (Forthcoming).

- REFL Voice⁰ has the following features:
 - selects for a vP complement²⁰
 - has an μ EPP feature that attracts a reflexive anaphor²¹
- REFL Voice⁰ is a reflexivizing function²²
 - This **makes the predicate a reflexive one** – meaning two arguments are identical
 - ▶ similar to analyses in which the verb is reflexivized²³ (Partee and Bach 1980, Keenan 1988, Szabolcsi 1992, Schlenker 2005, a.o.)
 - ▶ Its denotation may be something like $\lambda x \lambda y . x = y$
 - REFL takes the reflexive and external argument as the arguments it co-identifies
 - ▶ The anaphor must move to a position hierarchically superior to REFL, so that the REFL function can semantically compose as normal
 - Its first lambda is saturated by its specifier, the moved anaphor
 - Its second lambda will be saturated by the external argument subject in TP (due to the position in which REFL Voice is merged) I'm the man that john seems to to be tired I'm the man to whom john seems to be tired

3.3. Deriving CRs' Syntactic Properties

- How do these formal properties derive the distributional properties?
 - Island-Sensitivity
 - ▶ CRs have to be able to move, to satisfy the Voice's μ EPP feature
 - like all movements, this is constrained
 - ⇒ **deriving island effects** (§2.1)
 - ▶ Satisfying the EPP feature is the licensing mechanism for the REFL Voice⁰
 - Just like the reflexive-marking in Reinhart and Reuland (1993) *et seqq.*
 - ▶ The movement is **in the overt syntax**
 - If reflexive-marking were at LF (e.g. Reuland 2011), prosody would not be fed
 - Passive Restriction
 - ▶ Passives and CRs require different Voice⁰
 - There is only one VoiceP per clause
 - REFL Voice⁰ and PASS Voice⁰ compete
 - ▶ In other words, the Voice⁰s have complementary distributions
 - ⇒ **deriving the passive restriction** (§2.2)
 - Subject Orientation
 - ▶ The reflexivizing function takes the anaphor as one of its arguments, so the anaphor must move from its theta position to be able to compose with this function
 - This provides motivation for the movement that we've seen

²⁰For “*John is afraid of himself*,” the question that arises is whether this *himself* could be a CR that requires REFL Voice⁰ (Sandy Chung p.c.). If so, it must be the case that Voice can combine with predicates of other types, such as adjectives (and perhaps prepositions and nouns). See Appendix F for a description of what looks like Voice employed for an argument of a noun.

²¹This raises a question of minimality. Since reflexives can be DOs, IOs, applicatives, etc., how is it that some other DP does not intervene between the VoiceP and the reflexive's base-position? The reasonable answer seems to be that reflexives are not DPs (of the same type) so that other DPs are not interveners for minimality – for example, it might be that these reflexive anaphors are SelfPs. This of course requires that Voice can have specifiers of different phrasal types: it is independently argued (Sailor & Ahn, In Progress) that PASS has a predicate in its specifier and ACT has a DP in its specifier, so the fact that REFL has a different specifier type is not a problem (and may even be predicted).

²²Both the passive Voice⁰ (Gehrke and Grillo 2009) and the Middle Voice⁰ (Ahn and Sailor To appear) have also been associated with semantic effects.

²³If the reflexivization function were applied to the verb directly, we couldn't predict subject-orientation (why not DO binding IO) with these Voice/movement-related anaphors – in any language.

- ▶ The reflexivizing function also picks out the external argument of the clause as one of its arguments
 - As a result, the clause’s subject will always be the binder
- ▶ This also derives the fact that derived subjects don’t work – they are not the external argument of the clause in which they appear (if they are the external argument, it is of a *different* clause)
 - ⇒ **deriving subject-orientation** (§2.3)

- Given that French shares distributional constraints with CRs, it should share a derivation
 - French has been independently analyzed in much the same way (Sportiche 2010; see Appendix A)

All the distributional properties of CRs are derived by this single movement, and the REFL Voice⁰

3.4. Deriving Pitch Placement

DSS Avoidance by CR

- Deriving the fact that (only) CRs avoid DSS is straightforward
 - For the simple fact that the reflexive has moved **in the overt syntax**, the CR does not bear DSS
 - This means any analysis of covert movement or probe-goal relation would be **insufficient**
- It’s not that reflexives are an exception to DSS assignment
 - Not all reflexives are “exceptions”
 - ▶ In fact, which reflexives (don’t) avoid DSS is entirely systematic, depending on syntactic movement
 - This supports the idea that **DSS is read directly off the syntactic structure**, at a certain point in the derivation
 - ▶ As we saw for adverbs in Section 1.2
 - ▶ **No stipulations are needed** for anaphoric elements or functional material²⁴

CR-focus in REAFR

- Deriving the fact that CRs always bear pitch accents in REAFR is less straightforward
 - **REAFR is infelicitous when the clause’s reflexive nature is discourse-given.**²⁵

(56) Which boy hit Tom?

Tom hit HIMSÉLF.

(57) Which boy hit himself?

#Tom hit HIMSÉLE.

- ▶ In other words, REAFR is predicated on the reflexivity of the clause being **new information**
 - Thus, the reflexivizing function – REFL Voice⁰ – should be Focus-marked²⁶

²⁴More will have to be said about other functional elements like conjunctions, certain prepositions, and pronouns to account for their inability to bear DSS. I set this aside, but also refer the reader to Appendix B for a brief discussion of pronouns.

²⁵See Spathas (2010) for additional arguments that the clause’s reflexivity is focused.

²⁶Consider the fact that the modal auxiliary *will* encodes at least future (FUT) and affirmative polarity (AFF) semantics, as a sort of conjunction (See e.g. Klein 1998). This is consistent with the fact that *will* bears focus when either of the conjuncts are focused:

- (58) a. A: He danced. B: He wíll dance. (FUT_{Foc} & AFF)
 b. A: He won’t dance. B: He wíll dance. (FUT & AFF_{Foc})

If Voice⁰ introduced the external argument, its denotation would similarly be a conjunction, something like: $\lambda x \lambda y. ExtArg(x) \& x=y$. Thus, focusing this conjunction should predict the following meanings as possible: focus on the *ExtArg(x)* conjunct, or focus on the $x=y$ conjunct. And since REFL is silent, its specifier, *himself*, would bear focus prosody for (59a–b):

- (59) a. $[[REFL]_{Foc} = [ExtArg(Tom)]_{Foc} \& Tom=himself]$ (EXTARG_{Foc} & X=Y)
 b. $[[REFL]_{Foc} = ExtArg(Tom) \& [Tom=himself]_{Foc}]_{Foc}$ (EXTARG & X=Y_{Foc})

However, if (58a) were available, we would expect that REFL could be focused, and (57) would be predicted to be felicitous – counter to fact. It must therefore be the case that the head that introduces the external argument is not also the semantic reflexivizer, REFL Voice. Given that clauses with REFL Voice contain external arguments, it must be that there is an external-argument licenser besides Voice.

- In this analysis, the English REFL Voice⁰ is *silent*
 - ▶ How do we realize the focus of a silent head?
- Focus-marked silent heads ⇒ pitch accent on the specifier
 - Laka (1990) argues for this explicitly, with polarity focus data:

(60) a. [_{ΣP} **IRUNE** Σ_{Foc} [da etorri]] b. [_{ΣP} Irune **BA**_{Foc} [da etorri]]

IRUNE AFF_{Foc} has arrived Irune **só**_{Foc} has arrived

‘Irene **DÍD** arrive’ ‘Irene did **só** arrive’

 - ▶ Polarity focus in Basque is borne by the specifier of ΣP, when Σ is silent, but by Σ when it’s overt
 - English emphatic polarity provides further support for this, due to *too* and *not* being in Spec,ΣP (e.g. Sailor 2011)²⁷

(61) a. Sally did [_{ΣP} **TOO** Σ_{Foc} [_{VP} burn me]]

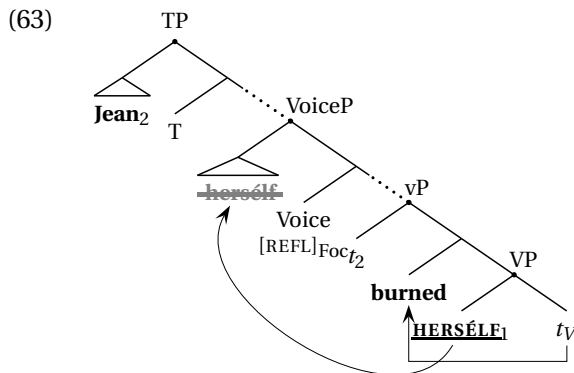
b. Sally did [_{ΣP} **NOT** Σ_{Foc} [_{VP} burn me]]

 - ▶ Even though *too* and *not* bear the polarity focus, they themselves are not the polarity head
 - Ahn (2010) also finds evidence for this, from emphatic reflexives:

(62) a. No student did it [ID_{Foc} **HIMSÉLF**].

b. Jack [ID_{Foc} **HIMSÉLF**] arrived.

 - ▶ Emphatic Reflexives are arguments of a silent Focus-marked functional head, ID, so the reflexive anaphor bears the focus pitch accent
- So, the Focus-marked silent REFL Voice⁰ in (63) **yields focus on its specifier**: the clausal reflexive



- REAFR is **not a counterexample** to Question-Answer Congruence
 - ▶ It’s the mechanical reflex to a problem of focusing silent things
 - ▶ This argumentation supports the idea that **QAC is inviolable**, and any apparent violations of it should be pursued as requiring a better understanding of the syntactic/semantic structure
- See Appendix G for arguments that alternative analyses fail²⁸

All the prosodic properties of CRs are derived by this single movement, and the REFL Voice⁰

²⁷Furthermore, any theory that might put do-support *do* and other V-to-T material in the specifier of ΣP (perhaps those that have abandoned head-movement) would predict provide even further support for this.

²⁸It seems that a probe-goal analysis of the focus-feature-transmission that happens in (63) would be successful for the REAFR data. Under this system, the island effects we saw we be derived by the island being impenetrable by the probe. While this would be a potential solution for REAFR, it would miss the generalization that REAFR and DSS-avoidance are limited in the same ways.

4. Conclusions

4.1. Reflexive Voice and Movement

- By taking the prosodic data as indicative of the syntactic structure, we have found evidence of a **subject-oriented reflexive in English**
 - This makes it look more like many other languages
 - ▶ It's just happens to be that the subject-oriented reflexive (CR) and the non-subject-oriented reflexive (non-CR) are **segmentally identical** in English
 - ▶ Thus it is not surprising that well-established constraints on Romance's subject-oriented *se/si* overlap with constraints on CRs
 - With the CR/non-CR distinction, **we ruled out other analyses** of the prosodic phenomena, i.e.:
 - ▶ “anaphors/functional elements don't get pitch accents”
 - ▶ “focused anaphors are focused antecedents”
- By having a **single movement** to the **reflexive Voice**, we derive all the issues presented here
 - Under this analysis, it is a logical consequence that DSS-avoidance and REAFR are coextensive phenomena
 - ▶ This is something that is not expected, *prima facie*
 - ▶ Any analysis that does not address these **shared syntactic properties/restrictions** would miss the generalization that the two much share derivational properties
- This makes a prediction: “true” reflexivity will have these properties, cross-linguistically
 - i.e. subject-orientation, absence from passives, and island sensitivity
 - Because true reflexivity is predicated on a REFL Voice head²⁹

4.2. Further Research

- How well does this analysis extend to other languages?
 - Do other languages have the REFL Voice⁰ lexicalized?
 - ▶ e.g. Finnish *-UtU* and Swahili *ji-?*³⁰
 - Do these languages also have a (DP-like) non-CR?
 - ▶ e.g. Finnish *itse-nsä* and Swahili *mw-enyewe?*
 - How closely does the distribution of these affixes/DPs follow the constraints we've seen on English and French?
- Having “cut the reflexive pie” along the lines of CR and non-CR, where else do we see their effects?
- Which kind of reflexive can arguments in non-verbal domains be?
 - Arguments of nouns³¹, adjectives, prepositions, etc.
- Which kind of reflexive can incorporated *self*-correspond to?
 - e.g. clausal reflexives, non-clausal reflexives, inherent reflexives, emphatic reflexives, etc.
- What is the semantic contribution of *himself*?
 - Is it constant across CRs and non-CRs?
 - How about across Emphatic Reflexives and these “argument” reflexives?
 - Does it have a semantic contribution in cases like ‘*behave (oneself)*’ and ‘*perjure *(oneself)*’?

²⁹Of course, it is possible that, for example, the EPP feature of the REFL Voice is not instantiated in every language. This might be the kind of variation we expect to find in the same way that we find some variation in what is called “passive voice.” However if this movement to REFL VoiceP is done to “reflexive mark” the predicate, and reflexive-marking reflexive predicates is necessary across languages (Reinhart & Reuland), it is predicted that we would not find this kind of variation. (Though perhaps other variation is still possible.)

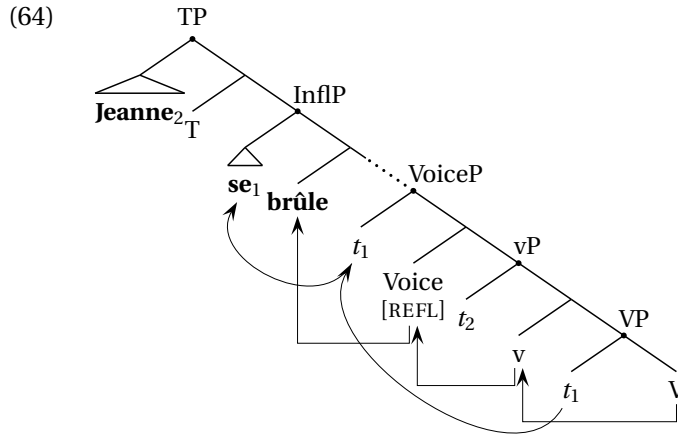
³⁰See Appendix H.5 for an argument that Finnish *-UtU* is REFL Voice⁰.

³¹See Appendix F for what seems to be Voice⁰ inside of NPs.

Appendices

A. More Romance Data/Analysis

- Sportiche (2010) motivates the need for phrasal movement of *se*, not unlike the movement of CR *himself* argued for here
 - He does not employ REFL Voice⁰, but a functional head HS⁰
 - I have adopted his structure into one more like the one proposed here
- French demonstrates the need for slightly more structure (for language-specific properties)
 - assuming the verb moves beyond VoiceP (to, for example, Infl), the clitic must move beyond the specifier of VoiceP³²



- Note that aside from the independent differences of V-to-I and clitic-climbing, the structure at VoiceP for French is identical to the English structure argued for here
- Due to the derivational similarities, this analysis predicts the properties shared by English and French:
 - These properties are discussed for French (in part) by Burzio (1986) and Sportiche (2010)

(65)

	English CRs	French <i>se</i>
a. Can be Direct Object	✓	✓
b. Can be (Prepositional) Indirect Object	✓	✓
c. Can be generated in an island	X	X
d. Can be have a non-subject antecedent	X	X
e. Can be have a derived-subject antecedent	X	X
f. Can be occur in passives	X	X

Islands

- Subject-oriented reflexive clitics in Romance languages island-bound

- (66) Intended: “Jean burned Scott and herself”
- ?Jeanne a brûlé Scott et lui-même.
Jean PERF-AUX burned Scott and himself
 - *Jeanne s’ est brûlé(e) Scott et lui-même.
Jean SE PERF-AUX burned Scott and himself
 - *Jeanne s’ est brûlé(e) Scott et.
Jean SE PERF-AUX burned Scott and
 - *Jeanne a/est brûlé(e) Marie et se/soi.
Jean PERF-AUX burned Scott and SE

³²Alternatively, the verb may not move beyond Voice and the *se* may not either, if remnant movement of VoiceP is employed rather than separate movements of the verb and its clitics. In fact, this would seem preferable, so that the subject could be the closest DP for movement to subject (assuming that *se* and other clitics are interveners of the relevant type).

- (67) Intended: “Lucie counted five tourists besides herself.”
- Lucie a compté cinq touristes en dehors d’ elle-même.
Lucie PERF-AUX counted five tourists in outside of herself
 - *Lucie s’ est compté(e) cinq touristes en dehors d’ elle-même.
Lucie SE PERF-AUX counted five tourists in outside of herself
 - *Lucie s’ est compté(e) cinq touristes en dehors.
Lucie SE PERF-AUX counted five tourists in outside
 - *Lucie a/est compté(e) cinq touristes en dehors de se/soi.
Lucie PERF-AUX counted five tourists in outside of SE
- (68) Intended: “Ms. Adler likes intelligent people who are like herself.”
- Mlle. Adler aime les gens intelligents qui sont comme elle-même.
Ms. Adler likes the people smart who are like herself
 - *Mlle. Adler s’ aime les gens intelligents qui sont comme elle-même.
Ms. Adler SE likes the people smart who are like herself
 - *Mlle. Adler s’ aime les gens intelligents qui sont comme.
Ms. Adler SE likes the people smart who are like
 - *Mlle. Adler aime les gens intelligents qui sont comme se/soi.
Ms. Adler likes the people smart who are like SE

Passive Clauses

- Romance *se/si* cannot occur in passive clauses
 - They cannot take a passive subject as their antecedent (a sub-case of derived-subject antecedent)
 - (69) Jean sera décrit à lui-même par sa femme (Kayne 1975:375)
John will.be described to himself by his wife
 - *Jean se sera décrit par sa femme
John SE will.be described by his wife
“John will be described to himself by his wife”
 - But they also cannot take the by-phrase DP as their antecedent, **despite being a D-structure subject**:
 - (70) Marie sera présenté à lui-même_j par Jean_k ($j = k$) (Sportiche 2010)
Marie will.be introduced to himself by John
 - *Marie se_j sera présenté t_j par Jean_k ($j = k$)
Marie SE will.be introduced by John
“Marie will be introduced by John to himself.”

Non-Subject Antecedents

- Romance *se/si* can be indirect objects:
 - (71) a. Jean présente Pierre à Marie
John introduces Peter to Mary
“John is introducing Peter to Mary.”
 - b. Jean_k se_j présente Pierre t_j ($j = k$)
John SE introduces Peter
“John₁ is introducing Peter to himself₁.”
- However, just like English CRs, Romance *se/si* is out with a non-subject antecedent
 - Sportiche points this out for French *se*, with data like (72):
 - (72) *Jean se_j présente les enfants_k t_j ($j = k$)
John SE introduces the children

Intended: “John is introducing the children to themselves.”

- Kayne has also pointed this out, noting that non-subject antecedents require *lui-même*:

- (73) a. La psychiatrie a révélé Jean à lui-même. (Kayne 1975:371)
The psychiatry has revealed John to himself.
b. *La psychiatrie s’ est révélé Jean.
The psychiatry SE is revealed John.
“Psychiatry has revealed John to himself”

- Burzio points this out for Italian, noting that non-subject antecedents require *se stesso*:

- (74) a. Questa situazione metterà Giovanni contro **se stesso** (Burzio 1986:430)
this situation put-will Giovanni against himself
b. *Questa situazione **si** metterà Giovanni contro
this situation SI put-will Giovanni against
“This situation will put Giovanni against himself”

Derived-Subject Antecedents

- (75) a. Jean semble déprimé à lui-même ($k = j$)
John seems depressed to himself
b. *Jean_k se_j semble t_k déprimé ($k = j$)
John SE seems depressed
“John seems to himself to be depressed”

B. CRs ≠ weak pronouns

- CRs and weak pronouns share many things in common

- In many sentences, they both avoid nuclear stress

(76) John dréssed {me/himself}.

- Moreover, weak pronouns have been argued to involve movement which, superficially, doesn’t look so distinct from the reflexive movement argued for here (Cardinaletti and Starke 1999, a.o.)

- Despite these commonalities, unstressed reflexives and unstressed pronouns have different distributions

- Unstressed reflexives can occur in places where and unstressed pronouns can’t

(77) Who did Maria show __ Sally?

*Maria showed John her.

(78) Who did Maria show __ herself?

Maria showed John herself.

- ▶ Double-object constructions disallow unstressed pronouns across the board (77), but unstressed reflexives can appear in the same context (77)

- Additionally, Unstressed pronouns can occur in places where and unstressed reflexives can’t

(79) a. Jack_i isn’t friends with people like him_i

b. *Jack_i isn’t friends with people like him_i

(80) a. *Jack_i isn’t friends with people like himself_i

b. Jack_i isn’t friends with people like himself_i

- ▶ Syntactic islands require pitch accents on the reflexive (79), but pronouns can still remain accent-less (79)

- While the reasons underlying the distribution of unstressed pronouns is unclear, the relevant conclusion is that **unstressed reflexives and pronouns have distinct distributions**, and therefore should have different syntactic underpinnings
- Additionally, assuming English and Romance are sufficiently similar, Romance allows for pronominal clitics (akin to unstressed pronouns) to co-occur with reflexive clitics (akin to unstressed reflexives)
 - If unstressed reflexives involved the same derivation as unstressed pronouns, we wouldn't expect to be able to have both in the same sentence, counter to fact:

(81) Elle se le dit encore
 She REFL 3SG.M says again
 'She is saying it to herself again.'

- In this way, whatever derives when reflexives can/can't be unstressed (movement to VoiceP) **is a separate mechanism** from what derives when pronouns can/can't be unstressed

C. What about Word Order?

- We have seen a lot of (seemingly unrelated) evidence that CRs do not sit in the same position as, for example, R-expressions
 - But the word order in English, makes it really look like they **do** sit in these positions
 - My theory would seem to predict the reflexive in (82) as being a CR, given the fact that it participates in REAFR

(82) Who gave John a car yesterday at work?
 John gave HIMSÉLF a car yesterday at work. (REAFR)

- ▶ but the word order seems to rule out an analysis with movement to a right specifier³³

- To be explicit, the theory presented thus far would seem to predict (83):

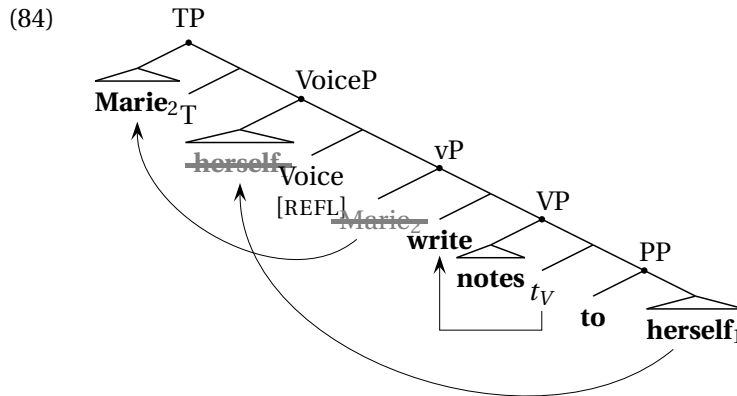
(83) Who gave John a car yesterday at work?
 *John gave a car yesterday at work HIMSÉLF. (REAFR)

- How can this apparent conflict between syntactic/prosodic facts and word-order facts be resolved?
 - Well, it **can't** be covert movement to VoiceP or probe-goal with Voice⁰
 - ▶ **Prosody would not be fed** by these non-overt-movement analyses
 - Maybe it's *covert* overt movement
- That is to say, CR-movement takes place overtly, but some constraints block this new structure's word-order
 - perhaps it's that CR-movement cannot be spelled out since it violates a previously established linearization (Cyclic Linearization, Fox and Pesetsky 2005)
 - To comply with the conflicting demands of "move" and "don't create a new linearization", **the tail of the movement chain is spelled out**³⁴
 - ▶ similar to the phonological theory of QR, as in Groat and O'Neil (1996), Fox and Nissenbaum (1999), Bobaljik (2002)

³³Such an analysis, or even a remnant movement analysis, is *not impossible*, per se. There would be no problems if, for example, there were a movement or series of movements that led to recovering the pre-reflexive-movement structure. Also, perhaps an analysis whereby all surface word orders is determined at much higher levels of structure (beyond VoiceP) would not seem to have a problem deriving word order. Of course, both of these analyses would require further exploration and adequate motivation to be possible candidates for an analysis.

³⁴Alternatively, perhaps it's that there are multiple levels of structure, which want to be as isomorphic as possible (Shape Conservation, Williams 2003). In this system, perhaps CR-movement is only done in prosodic structure (and not surface structure) minimizing shape distortion between surface structure and, for example, theta and case structures.

- A derivation in this way might look like (84)



- This will still derive the prosodic properties we've seen
 - the CR is not the most embedded element – it's in two places ⇒ **DSS properties**
 - the CR is in the specifier of REFL Voice ⇒ **REAFR properties**
 - Covert overt movement could derive prosody in other domains
 - Givenness has been argued to require movement that feeds prosody
 - ▶ Wagner 2006 shows rather convincingly that such movement happens even in English, despite the fact that Given material doesn't seem to always move (unlike many languages which require movement for Topicality, e.g. German, Japanese)
 - ▶ Thus, perhaps **this movement is covert overt movement**
 - Similarly, Focus in many languages clearly involves movement (e.g. Hungarian)
 - ▶ In this way, one might hypothesize that English Focused material moves as well³⁵
 - ▶ To account for the fact that movement seems not to be occurring (in terms of linear order), maybe **this, too, is covert overt movement**
 - In other words, there seems to be **a family of movements that are done whose derivations proceed like this** in English
 - Focus, Givenness, and Reflexive movements all feed the prosody without affecting word-order
 - Moreover, at least in some domains, quantifier/negation scope also has visible effect on the prosody without change in the word order
 - ▶ If we assume that prosodic information encodes structural relationships only from syntax and phonology (i.e. not any post-syntactic semantic representation; e.g. Selkirk 2011), there needs to be a syntactic account for this
 - ▶ Perhaps is QR, like the semanticists have always told us, but QR is always in the narrow syntax, allowing it to feed prosody
 - As **a consequence of covert overt movement**, PF-theories of islands (e.g. Merchant 2001, Fox and Lasnik 2003) face problems³⁶
 - Imagine that the a reflexive moved to Spec, VoiceP from inside an adjunct island. This would result in the (infelicitous) prosody of (85):
- (85) #Lucie [_{VoiceP} ~~herself~~ counted five tourists *besides* herself].
- In other words, this movement is island-sensitive, even though you spell-out the tail of the chain

³⁵Wagner would treat this sort of phenomena also as the result of movement as the result of something else being Given. I remain agnostic as to this – either way, what appears to be displacement of Focused things would be derived by overt movement, which may be covert (in English).

³⁶Thanks to Norbert Hornstein, for bringing this to my attention.

- ▶ There is no gap/trace/unpronounced-copy within the island; therefore, there should be no violation of a PF-theory of islands
- ▶ Thus, a PF-theory of islands would incorrectly predict that (84) to be grammatical – putting into question whether such a theory of islands is appropriate

D. As Much Voice As Possible

- What limits the usage of the non-CRs?
 - Indeed, there are no structural limits on where they can be place, which is why they can appear in islands and without a subject antecedent

- To ask a more concrete question, why is (86) unavailable in out-of-the-blue contexts?

(86) Using a mirror, John looked at himsélf. (# broad focus, ✓ narrow focus on reflexive)

- Perhaps the answer is like Grodzinsky and Reinhart (1993)'s Rule I (also as Büring (2005)'s Coreference Rule), which limits the distribution of (accidental) coreference:

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

- As a consequence of this rule, bound variables should be used as much as possible.

- To extend this to the current problem, I propose a modification to this rule:

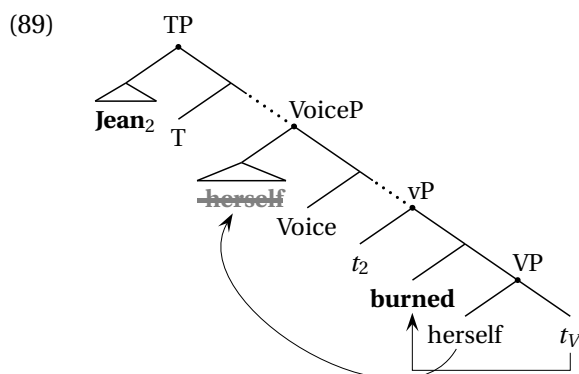
(88) Rule I'
 i) α cannot corefer with β if an indistinguishable interpretation can be generated by replacing α with a bound variable, γ , bound by β .
 ii) γ must be bound via REFL Voice⁰, wherever possible.

- This raises the question... why?

- This seems to be part of a larger pattern in syntax: “use the derivation with most constraints as much as possible”
 - ▶ See also: weak/strong pronoun alternation (Cardinaletti and Starke 1999), object-shift-dependent specificity (Adger 1994, Rackowski and Richards 2005), possessor raising in Nez Perce (Deal 2011), etc., etc.
- Perhaps this is done to minimize vagueness/maximize pragmatic cooperation

E. Movement to VoiceP doesn't create binding violations

- In a REFL Voice derivation, the reflexive ends up c-commanding a coindexed DP lower in the structure
 - That is, if binding conditions are checked at every point in the derivation, *herself*_i would bind (the lower copy of) *Jean*_i in (89)
 - But I am arguing that (89) is grammatical, so there must not be a condition C violation



- Moreover, this is **not the only time** a reflexive doesn't create a condition C effect
 - Also in raising over an experiencer:³⁷
 - (90) a. It seems to him_i that John_{j/*i} is taller.
 - b. It seems to [every girl]_i that John is taller than her_i father.
 - c. John seems to [every girl]_i ~~John_j~~ to be taller than her_i father.
 - ▶ It must be the case that the experiencer c-commands into the lower clause, given the Condition C effect in (90a), as well as the pronominal binding in (90b) and (90c).
 - But then, a reflexive experiencer, like in (91), should c-command into the lower clause
 - (91) John_j seems to himself_j ~~John_j~~ to be taller.
 - ▶ Note that there is no condition C violation in (91)
 - We might expect a condition C violation in (91) if binding is evaluated at every merge
 - namely at this point:
 - (92) [_{TP}' seems to himself_j [_{TP} John_j to be taller]]
- Instead, perhaps binding conditions need not be checked before the last A-movement (Sportiche 2011)
 - In other words, the binding conditions need not be checked until *John* has raised (A-moved) to its case position
- Alternatively, perhaps *himself* doesn't ever create a condition C violation
 - because what carries the index is *him*
 - ▶ so there is no binding by *himself* because *him* is embedded in the structure for *himself*.
 - This doesn't seem to work however; in (93), *himself* must be the cause of the apparent Principle B violations below
 - (93) a. John_i told {Mary_j/*himself_i} to restrain him_i.
 - b. John_i told himself_i to restrain {Mary_j/*him_i}.
 - ▶ At the same time, it's not entirely clear why (94) is problematic, and the answer to that might have something to do with the ungrammaticalities in (92)
 - (94) ?John_i told himself_i to restrain himself_i.

F. Voice inside NPs?

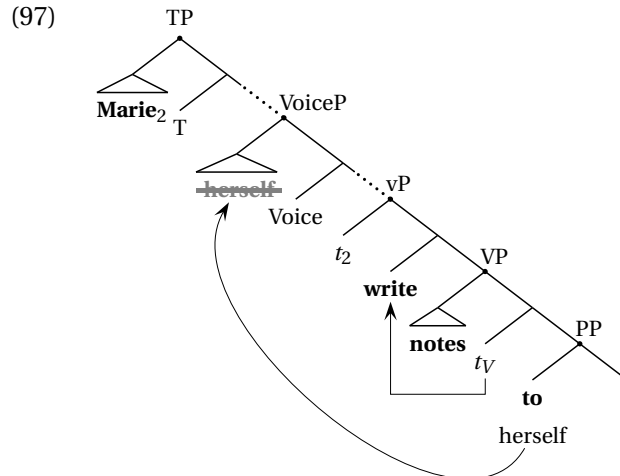
- In a case like (95), we see that a DSS-avoiding reflexive or DSS-bearing reflexive can be employed
 - This pitch accent placement difference corresponds to an interpretational difference
 - (95) Marie found some notes to herself.
 - a. Marie found some nótes to herself. ⇒ Marie wrote the notes.
 - b. Marie found some notes to hersélf. ⇒ ?? wrote the notes.
- Perhaps what this indicates is that, at least in cases like (94a), what looks like an NP is somehow like a relative clause with a silent predicate³⁸
 - That is, we would like to relate the structure of the bracketed NP in (96) to the structure in (97).³⁹

³⁷This is also in the same spirit as movement of clitics or weak pronominals, which also do not introduce condition B/C violations. Assuming that this clitic/pronominal movement is phrasal movement, it is not clear to me why this should be.

³⁸This is very similar to proposals that assert that all NPs are clausal (Bach 1968, Campbell 1996, Koopman 2003, 2005, among others).

³⁹It can't be the case that the TP in (97) is embedded in the NP, since a relative clause with this much structure would predict adverbial (and not adjectival) modifiers and other clausal properties (e.g. ACC/NOM case). It thus seems that (96) is like a clause

(96) Marie found some [_{NP} notes to herself]



- This leaves open the question of the derivation for (95b)
 - Perhaps it is the more standard story of an NP in which ‘notes’ takes a PP complement
 - In such a story, without the REFL Voice, *herself* would be the most embedded element, just as other objects of a PP complements

G. Inadequate Analyses for REAFR

G.1. Bad Alternative 1: REAFR is predicated on object focus

- **General idea:** The structure and interpretation of (7b) is a kind of a transformation on the more straightforward (7a)

(7) Johnny burned HIMSÉLF.

a. Johnny didn't burn ROBÉRTO; Johnny burned HIMSÉLF. (Obj.Foc.)

b. ROBÉRTO didn't burn Johnny; Johnny burned HIMSÉLF. (REAFR)

- **Consequence:** If the object focus interpretation is out, the REAFR interpretation should also be out
- **Doesn't work:**

- Object focus interpretation is out, but REAFR works in (98)

(98) a. Liz's sub didn't eat ITSÉLF – SOMEONE ÉLSE ate it. (REAFR)

b. #Liz's sub didn't eat ITSÉLF – it ate SOMETHING ÉLSE. (Obj.Foc.)

G.2. Bad Alternative #2: REAFR is predicated on Emphatic Reflexives

- **General idea:** Emphatic reflexives are another instance of focused reflexive pronouns – maybe (99a) is derived by a transformation on (99b)

(99) a. John hit HIMSELF.

b. John hit himself himself.

- **Consequence:** The independently known constraints on Emphatic Reflexives (Ahn 2010) should also constrain when you can get REAFR
- **Doesn't work:**

- ^{VP}Emphatic Reflexives modify predicates to add a meaning close to “without help”
 - ▶ ^{VP}ERs are limited to cases where their antecedent is an Agent:

that has been nominalized low, akin to “of-ing” nominalizations (Abney 1987). Additionally, lack of TP would correctly predict that reflexive clitics of the Romance type, which (must) move to the IP/TP region, should not be derivable inside of DPs.

- (100) a. Which nurse cured you ^{VP}herself? *Agent*
 b. #Which medicine cured you ^{VP}itself? *Cause*
 c. #Which student likes linguistics ^{VP}himself? *Experiencer*
- However, REAFR is compatible with any type of external argument
- Agents, Experiencers and Causes are all OK:

(101) Who was talking to Emma? (Agent Question)
 Emma was talking to HERSÉLF. (REAFR)

(102) What cools graphene transistors? (Cause Question)
 Due to their inherent properties, they cool THEMSÉLVES. (REAFR)

(103) Who likes the loudest boy? (Experiencer Question)
 The loudest boy likes HIMSÉLF. (REAFR)
- ^{dp}Emphatic Reflexives modify DPs to add a meaning close to “X, not Y”
- ^{dp}ERs are limited to cases where their antecedent is a type-⟨e⟩ DP
- (104) a. #Every mother washed every baby boy ^{dp}himself. (Quantified Phrase)
 b. #Nice girls would want to marry a schizophrenic ^{dp}himself. (Non-spec. Indef.)
- However, REAFR is compatible with any type of DP
- (105) Who washed every baby boy?
 Every baby boy washed HIMSÉLF. (Quantified Phrase)
- (106) Who would want to marry a schizophrenic?
 A schizophrenic would want to marry HIMSÉLF. (Non-spec. Indef.)
- Furthermore, a ^{dp}ER could not be adjoined to a silent pronoun in (105)–(106), as ^{dp}ERs are additionally highly degraded when attached to (non-nominative) pronouns (Lasnik and Sobin 2000):
- (107) *?Charles gave {you ^{dp}yourself/him ^{dp}himself/himself ^{dp}himself} the reward.
- REAFR has a **broader distribution** than either Emphatic Reflexive would allow

G.3. Bad Alternative #3: Focused reflexives can focus antecedents

- **General Idea:** Because of coreference, focusing reflexives is like focusing the antecedent directly
- **Consequence:** The external-argument-hood of the antecedent, the Voice of the clause, and the reflexive's structural origin shouldn't matter
- **Doesn't work:**
 - Dual focus is **required** for non-external-argument antecedents (unlike with REAFR)

(108) Who did Angie introduce __ to Ken?
 a. #Angie introduced Ken to HIMSÉLF. (Deacc.Antecedent)
 b. Angie introduced KÉN to HIMSÉLF. (Dual Focus)

(109) Which student seems to Ken to be sick?
 a. #Ken seems to HIMSÉLF to be sick. (Deacc.Antecedent)
 b. KÉN seems to HIMSÉLF to be sick. (Dual Focus)
 - Reflexives **must have an external argument antecedent** to allow REAFR
 - Moreover, having an external argument antecedent isn't sufficient – passive clause external arguments don't allow REAFR:

- (110) Who was Angie introduced to __ by Ken?
#Angie was introduced to Ken by HIMSÉLF. (REAFR)
- (111) Who was Angie introduced by __ to Ken?
#Angie was introduced by Ken to HIMSÉLF. (REAFR)
- ▶ Like French *se* (Sportiche 2010) and Shona *zvi-* (Storoshenko 2009)
 - ▶ **Passive voice disrupts REAFR** 's necessary syntax
- Reflexives separated from antecedents by islands are incompatible with REAFR:
- (112) Who was talking to Emma?
Emma was talking to HERSÉLF. (REAFR)
- (113) Who was talking to [Sebastian and Emma]?
#Emma was talking to [Sebastian and HERSÉLF]. (REAFR)
- (114) A: Who counted five tourists [besides Lucie]?
#Lucie counted five tourists [besides HERSÉLF]. (REAFR)
- ▶ **We need a movement analysis** for the reflexives in REAFR

H. Bonus: Strict and Sloppy Readings

H.1. Identity Background Check

- Any theory of ellipsis operates on eliding certain material by finding an appropriately⁴⁰ **identical antecedent**
 - There is evidence that this identity is partially computed...
 - ▶ ...semantically (e.g. Fiengo and May 1994, Merchant 2001)
 - ▶ ...syntactically (e.g. Chung et al. 1995, Merchant 2007, Chung 2011), **and**
 - ▶ ...pragmatically (e.g. Kehler 2002, Hardt and Romero 2004)
- Merchant (2007): the **Voice⁰s must be identical when Voice⁰ is within the ellipsis site**
 - Sluicing (115a) and Gapping (115b), unlike VPE, elide Voice⁰ and disallow active/passive mismatch
 - Merchant's conclusion: Voice⁰ must survive ellipsis in VPE
- Kehler (2002): **voice must be identical when the two clauses are parallel and coordinated**
 - Voice-mismatch across antecedent/ellipsis clauses under a Resemblance relation (115c) is impossible
 - Voice-mismatch is fine when the clauses are under any other Coherence relation, as in (115d)
- these constraints **predict the (un)acceptability of passive/active mismatches** below:
 - (115) a. They told me Lea was hugged today, but they didn't tell me **by who(m)** [~~was she be hugged~~].
*They told me Lea was hugged today, but they didn't tell me **who** [~~hugged her~~].
 - b. Lea was hugged today by Tim, and **Chris** [~~was hugged~~] **by Jane**.
*Lea was hugged today by Tim, and **Jane** [~~hugged~~] **Chris**.
 - c. Lea was hugged today by Tim, and **no one else was** [~~hugged~~].
*?Lea was hugged today by Tim, and **no one else did** [~~hug her~~].
 - d. Lea was hugged today by Tim, even though **no one else was** [~~hugged~~].
Lea was hugged today by Tim, even though **no one else did** [~~hug her~~].

Voice⁰-mismatch between the antecedent and ellipsis clauses cannot occur when:
(i) Voice⁰ is elided (e.g. in Sluicing or Gapping), or (ii) the clauses are in a Resemblance relation

⁴⁰The antecedent for Sluicing, Gapping, and VP-ellipsis must be linguistic, but at the same time, some anaphoric processes do not require a linguistic antecedent (Hankamer and Sag 1976). I only concern myself with processes that require linguistic antecedents here.

H.2. (Some) Strict readings as Voice Mismatch

- **Reflexive arguments can yield strict readings** under ellipsis (contra, e.g., Williams 1977, Partee and Bach 1981, Bouchard 1984, Lebeaux 1985, Kitagawa 1991)
 - ...but only **sometimes** (e.g. Fox 1993, Fiengo and May 1994, Hestvik 1995, Kehler 2002)
- a strict reading with CRs is available **whenever Voice mismatch is possible**, (116):

(116) **Strict/Sloppy**, REFL Voice antecedent (CR)

- They told me Lea_j [hugged herself_j today], but they didn't tell me who else_k [~~hugged themselves_k today~~].
 *They told me Lea_j [hugged herself_j today], but they didn't tell me who else_k [~~hugged her_j today~~].
- Lea_j [hugged herself_j] today, and Jane_k [~~hugged herself_k~~] yesterday.
 *Lea_j [hugged herself_j] today, and Jane_k [~~hugged her_j~~] yesterday.
- Lea_j [hugged herself_j today], and Jane_k did [~~hug herself_k today~~] too.
 *?Lea_j [hugged herself_j today], and Jane_k did [~~hug her_j today~~] too.
- Lea_j [hugged herself_j today], because Jane_k did [~~hug herself_k today~~] too.
Lea_j [hugged herself_j today], because Jane_k did [~~hug her_j today~~] too.

- (115a,b) disallow strict reading, because sluicing and gapping elide Voice⁰
- (115c) disallows a strict reading, because Resemblance requires Voice⁰s to match
- this is **entirely parallel to active/passive mismatch** (un)grammaticality in (115)

- strict and sloppy readings are **both available with non-CRs** in the antecedent

(117) **Strict/Sloppy**, REFL Voice antecedent (CR)

- They told me Lea_j [hugged people like herself_j today], but they didn't tell me who else_k [~~hugged people like themselves_k today~~].
 They told me Lea_j [hugged people like herself_j today], but they didn't tell me who else_k [~~hugged people like her_j today~~].
- Lea_j [hugged people like herself_j] today, and Jane_k [~~hugged people like herself_k~~] yesterday.
Lea_j [hugged people like herself_j] today, and Jane_k [~~hugged people like her_j~~] yesterday.
- Lea_j [hugged people like herself_j today], and Jane_k did [~~hug people like herself_k today~~] too.
Lea_j [hugged people like herself_j today], and Jane_k did [~~hug people like her_j today~~] too.
- Lea_j [hugged people like herself_j today], because Jane_k did [~~hug herself_k today~~] too.
Lea_j [hugged people like herself_j today], because Jane_k did [~~hug her_j today~~] too.

Strict readings pattern like ACT/PASS Voice⁰-mismatch
with regard to Sluicing/Gapping/VP-Ellipsis, as well as Coherence relations

- strict readings are possible in cases like (116)–(116), with non-CRs, **inasmuch as vehicle change is grammatical (Fiengo and May 1994)**⁴¹
 - **vehicle change** allows for the following: “in a reconstruction, a nominal can take any syntactic form so long as its indexical structure (type and value) is unchanged” (F&M 1994:218)
 - ▶ e.g. “himself” in the antecedent **may license ellipsis of “him”** in the ellipsis site
 - ▶ and “his” may license ellipsis of “their”
 - The form that these anaphors/pronouns have is the form that they've had since insertion

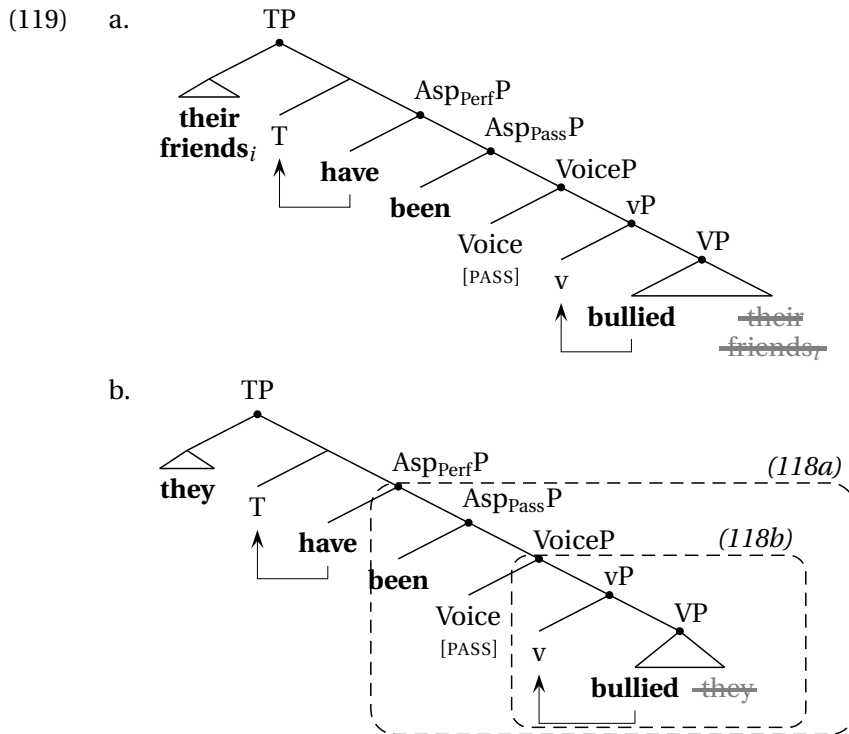
⁴¹There seems to be speaker-variation as to when vehicle change can apply.

- ▶ It's **not the case** that vehicle change literally changes a reflexive anaphor into a non-reflexive pronoun
- ▶ Nor should it be possible to change a reflexive **verbal affix** into a non-reflexive **pronoun**

H.3. Size of Ellipsis Sites

Ellipsis sites can expand – for the same ellipsis operation – under identity⁴²

- (118) a. Their friends have been \emptyset_{PASS} bullied and they have [~~been \emptyset_{PASS} bullied~~] too. (<http://goo.gl/LsmK7>)
 b. Their friends have been \emptyset_{PASS} bullied and they have been \emptyset_{PASS} [~~bullied~~] too.



- Merchant (2007) predicts (118b) as the VP-ellipsis site
 - This is what allows Voice-mismatch – Voice⁰ isn't actually elided
- But he doesn't discuss what happens in Voice-match contexts
 - as (118a) exhibits, when identity holds, you can expand the VP-ellipsis domain
- but you cannot elide more, in mismatch cases

- (120) a. *Joe was \emptyset_{ACT} cleaning the stove, because the fridge had [~~been \emptyset_{PASS} cleaned~~], already.
 b. Joe was \emptyset_{ACT} cleaning the stove, because the fridge had been \emptyset_{PASS} [~~cleaned~~], already.

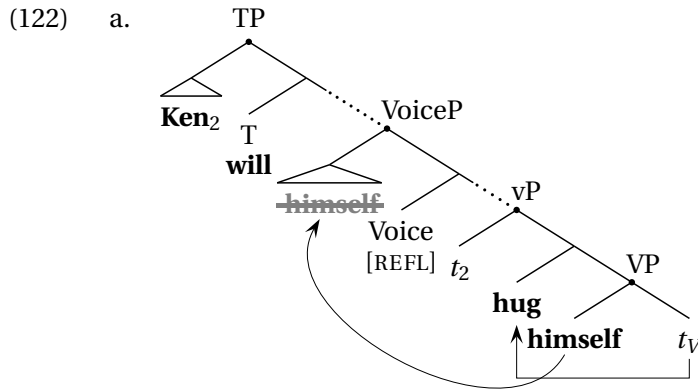
Ellipsis-sites seem to be able to grow, to allow (118a)
 but only when this doesn't create problems for identity

H.4. Deriving Strict and Sloppy

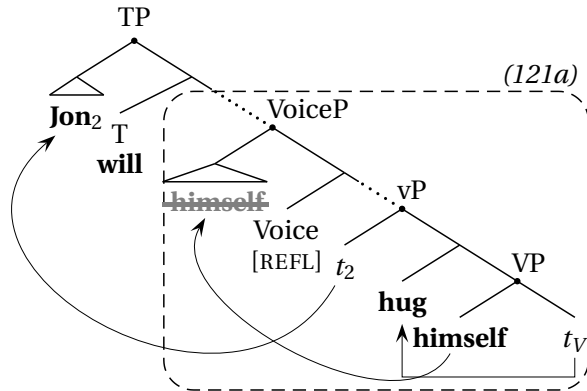
- Exploiting this, **sloppy readings are the reflex of eliding more** than strict readings
 - which necessarily elide less structure (to avoid Voice mismatch in the ellipsis domain)

- (121) a. Ken_k will hug himself_k. Then Jon_j will [~~hug himself_j~~]. (sloppy)
 b. Ken_k will hug himself_k. Then Jon_j will [~~hug him_k~~]. (strict)

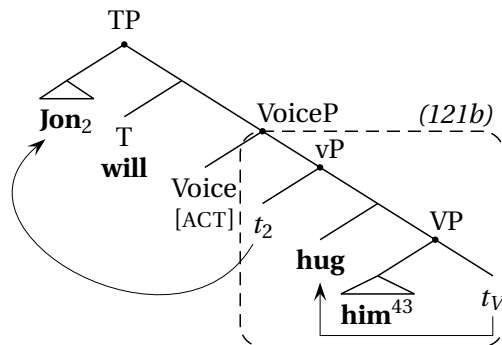
⁴²Here the example is with auxiliaries; similar data can be found with adverbials.



b. Sloppy reading; Larger VPE



c. Strict reading; Smaller VPE



- **larger ellipsis necessitates a sloppy reading**, since VoiceP is elided (and whenever Voice⁰ is elided, voice-match is required)
- in this way, ellipsis in a strict reading **must not include Voice⁰**
 - ▶ vehicle change allows for “hug him” in (121c) to have an antecedent as “hug himself”
 - ▶ correctly predicts that sloppy interpretations (which have no reason to be blocked in (121c)) are always available whenever strict interpretations are, but not vice-versa

Sloppy reading may elide VoiceP, but strict reading must not elide Voice⁰

⁴³Assuming that weak pronouns move, it must be that they move to a position below Voice since the complement of Voice⁰ is what’s elided (it is a mismatch case). Under an analysis like Cardinaletti and Starke (1999), movement of this type is intertwined with discourse-anaphoric properties of weak pronouns (and this pronoun **must** have an anaphoric dependency, in strict reading). It is not clear that this will help to derive any of the relevant facts here, but should perhaps be kept in mind.

H.5. Further Support: Strict/Sloppy Readings in Finnish

- Finnish also has two reflexivization strategies:

- a verbal affix *-UtU-* (its exact form depends on vowel harmony)
- a reflexive pronoun, which is of the form *itse-N*

- (123) a. Jussi puolusti Anna
 Jussi defend.PAST.3SG Anna
 ‘Jussi defended Anna’
- b. Jussi puolusti itse -ään
 Jussi defend.PAST.3SG self -3.GEN
- c. Jussi puolusta -utu -i
 Jussi defend -REFL -PAST
 ‘Jussi defended himself.’

- As noted by (Sells et al. 1987:178, fn.9), the *-UtU-* and *itse-N* reflexives behave differently with regard to availability of strict readings⁴⁴
- Under ellipsis, the DP *itse-N* can freely have a **sloppy** or **strict** reading, like English non-CRs:

- (124) Jussi puolusti itse -ään paremmin kuin Pekka
 Jussi.NOM defend.PAST.3SG self -3SG.GEN better than Pekka.NOM
 John_j defends himself_j better than Peter_k does [~~defend himself_k / **him**_j].~~

- strict reading available
- because this contains a pronoun, “vehicle change” can take place

- But, if the antecedent contains *-UtU-*, there **cannot** be a **strict** reading, like English CRs:

- (125) Jussi puolusta -utu -i paremmin kuin Pekka
 Jussi.NOM defend -REFL -PAST better than Pekka.NOM
 John_j defends himself_j better than Peter_k does [~~defend himself_k / **him**_j].~~

- perhaps *-UtU-* is the REFL Voice head
 - ▶ this should be tested further
- if so, no Voice-mismatch (= strict reading) is possible, since it is elided in (124)

Finnish overtly shows when REFL Voice⁰ is present; strict isn’t possible when REFL Voice elides

⁴⁴Special thanks to Elsi Kaiser, for these Finnish judgments.

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