

## What's in a word?

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### 1 Introduction

- (1) New discoveries:
  - a. Warner/Lasnik facts also hold in bilingual code-switching
  - b. There exists category-dependent I-selection
- (2) Conclusions:
  - a. We need to decompose words: word parts are syntactically active
  - b. There is a nonlocal syntactic dependency between T and the predicate head
  - c. This dependency can be changed by head movement
  - d. Category-defining nodes can participate in I-selection

### 2 A morphological puzzle reanalyzed as a syn/sem one, or \*‘I’m America, and so can you!’

**Old news:** The morphological form of the verb in an antecedent VP doesn't influence the well-formedness of elided VPs in English:

- (3) a. Emily **played** beautifully at the recital and her sister will, too. <**play** beautifully at the recital>
- b. Emily **took** a break from her studies, and her sister will, too. <**take** a break from her studies>
- c. Emily **sang** the song the way she wanted to. <**sing** the song>
- d. Emily **went** to the library because she wanted to. <**go** to the library>

**Slightly less old news:** Under ellipsis, *be* shows a different, more restrictive, pattern: (Quirk et al. 1972, Huddleston 1978, Warner 1985, Lasnik 1995, Potsdam 1997; cf. Thoms 2015)

- (4) a. Maria will **be** at the party, and her sister will, too. <**be** at the party>
- b. \*Maria **was** at the party and her sister will, too. <**be** at the party>
- c. Maria **was** at the party, and her sister will **be**, too. <at the party>
- d. Maria **was** at the party, and her sister **was**, too. <at the party>
- (5) a. She dove from the outcropping, which/as she wanted to.
- b. She visited Rhodes, which/as she wanted to.
- c. She is at the party, which/as she wanted to \*(be).
- d. She was at the party, which/as she wanted to \*(be).
- e. She will be at the party, which/as she wanted to (be).

Beware the fetishization of attestation:

- (6) a. \*I'm America, and so can you! (Stephen Colbert, 2007, Grand Central: NY)

- b. "I'm not there right now," Mr. Ryan said. "\*\*And I hope to, though, and I want to." (Jennifer Steinhauer and Alexander Burnsmay, "Paul Ryan Says He Is 'Not Ready' to Endorse Donald Trump", *New York Times*, May 5, 2016)

Warner's generalization:

- (7) In cases of ellipsis of a VP headed by an auxiliary verb, the auxiliary must have the exact same morphological form as its antecedent. (Warner 1985:63)

Lasnik's (1995) analysis:

- (8) Forms of *be* are inserted into the derivation fully inflected; other verbs get their inflection later (at PF). Ellipsis requires full syntactic matching, ruling out mismatches of *be*

Potsdam 1997:360:

- (9) a. [Snoopy talking to Woodstock, Peanuts cartoon] You and I are a lot alike ... Just a common bird and a common dog. Of course, if we had wanted to ~~be great~~, we could have been great ... But we didn't need to ~~be great~~.
- b. "Don't be coy," says the Tenured One, but I'm not ~~being coy~~. David Mitchell, *The Bone Clocks*, Random House: NY, 2014, p. 390
- c. He might be rude to the guests; I know he has ~~been rude to the guests~~ in the past! (Thoms 2015:181)
- d. John is being examined but Jack really should ~~be examined~~ also.
- (10) Forms of auxiliary verbs in English must be identical under ellipsis to their antecedents if those antecedents are finite.
- (11) Potsdam's hypothesis: "A trace of verb movement cannot serve as part of a VPE antecedent" (Potsdam 1997:362)
- (12) Thoms 2015:187: "A variable cannot provide an antecedent for ellipsis of a non-variable". (Supposed to follow from 'Parallelism')

Also false, for head movement, for A'-movement, and for A-movement:

- (13) [<sub>CP</sub> Nu gaat [<sub>IP</sub> zij *t<sub>nu</sub>* *t<sub>gaat</sub>*]], maar ik weet niet waarom. (Merchant 2001:21)  
*now goes she but I know not why*  
 'She's going now, but I don't know why.'  
 a. ≠ \*... waarom ~~zij~~.  
 b. = ... waarom ~~zij nu gaat~~.
- (14) a. The FBI knows which truck<sub>4</sub> they rented *t<sub>4</sub>*, but figuring out from where ~~they rented it~~ has proven difficult. (Merchant 2001:206)  
 b. This is Washington, where everyone keeps track of who<sub>1</sub> *t<sub>1</sub>* crossed whom<sub>2</sub> and when ~~they<sub>1</sub> crossed them<sub>2</sub>~~. (Merchant 2001:202)
- (15) These facts should be carefully studied, but it's clear you haven't ~~carefully studied these facts~~. (Merchant 2013)

NB: Thoms's claim (following others) that A-movement doesn't leave a trace or a copy leaves us in the lurch for understanding passive of intensional transitives, and reconstructed scope under modals/negation/quantificational adverbs:

- (16) a. A miracle would be needed/desired/wanted.  
 b. Several magical beasts were hoped/prayed/looked for by the children.  
 c. Raspberries were often/easily found in those days around the pond.
- (17) a. A miracle would be needed, and if you do ~~need a miracle~~ then God help you.  
 b. A unicorn was hoped for, and a dragon was ~~hoped for~~, too.  
 c. Raspberries were often/easily found, and strawberries were ~~often/easily found~~ as well.  
 d. Usually, raspberries were easily found on those hikes, but we didn't manage to ~~easily find raspberries~~ that particular day.

## 2.1 Code switching

Code-switching: switching from one language system to another, typically within a single sentence or utterance:

- (18) Juan amenazó a alguien, aber ich weiss nicht, wem Juan gedroht hat.  
*Juan threatened someone.ACC but I know not who.DAT he threatened has*
- (19) Juan amenazó a alguien, aber ich weiss nicht, wen Juan amenazó.  
*Juan threatened someone.ACC but I know not who.ACC Juan threatened*  
 'Juan threatened someone, but I don't know who Juan threatened.'

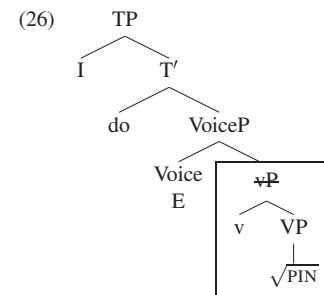
González-Vilbazo and Ramos 2012:

- (20) \*Juan amenazó a alguien, aber ich weiss nicht, wem Juan gedroht hat.  
*Juan threatened someone.ACC but I know not who.DAT Juan threatened has*
- (21) Juan amenazó a alguien, aber ich weiss nicht, wen Juan amenazó.  
*Juan threatened someone.ACC but I know not who.ACC Juan threatened*  
 'Juan threatened someone, but I don't know who.'
- (22) The E feature imposes
- e-GIVENness*,  
 $\llbracket E \rrbracket = \lambda p : e\text{-GIVEN}(p).p$ , where an expression  $\epsilon$  is *e-GIVEN* iff  $\epsilon$  has a salient antecedent  $A$  such that  $\llbracket A \rrbracket = F\text{-clo}(\epsilon)$  and  $\llbracket \epsilon \rrbracket = F\text{-clo}(A)$ , and  
 (The E-feature is an anaphoric device that introduces a pointer that is resolved by re-using a derivation or triggering a search for an already constructed derivation or structure—e.g., anaphora to a meaning)
  - No new lexeme requirement:**  
 $\forall m[(m \in M_E \wedge m \neq t) \rightarrow \exists m'(m' \in M_A \wedge m = m')]$ ,  
 where  $M_E$  is the set of lexemes in the elided phrase marker and  $M_A$  is the set of lexemes in the antecedent phrase marker. ( $M_E - t \subseteq M_A$ )
  - Limited syntactic identity* (Chung 2013, Merchant 2013):  
 ... E is e-GIVEN, and
    - Argument structure condition:* If an extracted phrase is the argument of a predicate in the ellipsis site, that predicate must have an argument structure identical to that of the corresponding predicate in the antecedent clause; and
    - Case condition:* If an extracted phrase is a DP, it must be Case-licensed in the ellipsis site by a head identical to the corresponding head in the antecedent clause.

- (23) **Hypothesis:** All cross-language ellipses involve code-switching at the ellipsis site (into the language of the antecedent).

INEFFABLE VPS: (Merchant 2015b)

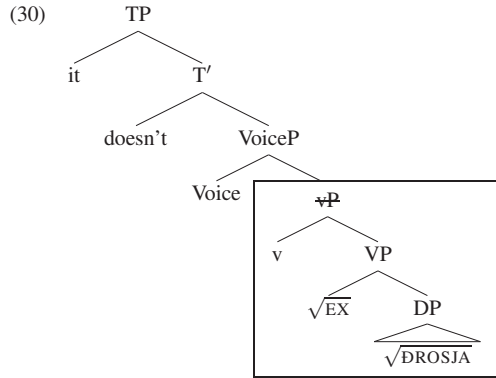
- Code-switching ellipsis with Greek antecedent
  - Greek has no infinitives
- (24) a. *Mother:* Pinás?  
*hunger.2s.PRES*  
 'Are you hungry?'
- b. *Daughter:* Yes, I do.
- (25) a. \*Yes, I do *pináo*.  
*hunger.PRES.1s*
- b. \*Yes, I do *pin*.  
*hunger*



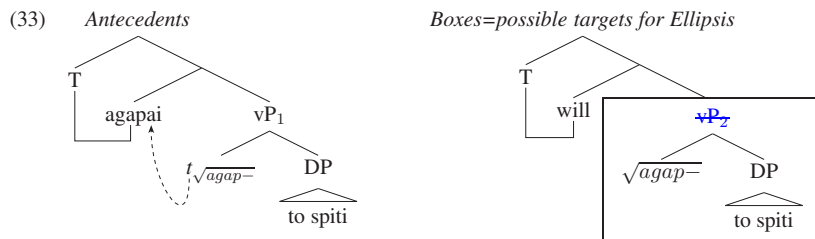
The boxed elided  $\sqrt{VP}$  is *ineffable*: there is no deaccented version of this sentence possible

- (27) A Greek-English dialog
- Mother:* To prói ðe xriázete  
*the morning NEG need.NONACT.IMPERF.PRES.3sg*  
*klimatizmó.*  
*air-conditioning.ACC*  
 'In the morning there's no need for air-conditioning.'
  - Son:* Yes, it does!
  - Mother:* Éxi ðrosúla.  
*have.ACT.IMPERF.PRES.3sg coolness.DIM*  
 'It's cool.'
  - Son:* No, it doesn't.
- (28) \*Yes, it does xriázete klimatizmó.  
*need.NONACT.IMPERF.PRES.3sg air-conditioning.ACC*
- (29) a. \*No, it doesn't be cool.  
 b. \*No, it doesn't have a coolness.  
 c. \*No, there doesn't be a coolness.

- d. #No, there isn't a coolness.
- e. \*No, it isn't. (cool)
- f. \*No, it doesn't éxi ðrosúla.  
*have.ACT.IMPERF.PRES.3sg coolness.DIM*



- (31) a. I Maria tha agapai to spiti, and her sister will, too.  
*the Maria FUT love.IMPERF.NONPAST.3s the house*  
‘Maria will love the house...’
- b. I Maria agapai to spiti, and her sister will, too.  
*the Maria love.IMPERF.NONPAST.3s the house*  
‘Maria loves the house...’
- c. I Maria agapuse to spiti, and her sister will, too.  
*the Maria love.IMPERF.PAST.3s the house*  
‘Maria loved the house...’
- (32) \*I Maria tha agapai to spiti, and her sister will  
*the Maria FUT love.IMPERF.NONPAST.3s the house*  
 agapai to spiti, too.  
*love.IMPERF.NONPAST.3s the house*  
 (‘Maria will love the house, and her sister will love the house, too.’)



2.2 \*Ich bin Amerika, and so can you!

**New news:** Warner/Lasnik identity effects are found in code-switching ellipsis contexts as well:

- (34) a. I Maria tha ine sto parti, and her sister will be, too.  
*the Maria FUT be.NONPAST.3s at.the party*  
‘Maria will be at the party...’
- b. I Maria ine sto parti, and her sister will be, too.  
*the Maria be.NONPAST.3s at.the party*  
‘Maria is at the party...’
- c. I Maria itan sto parti, and her sister will be, too.  
*the Maria be.PAST.3s at.the party*  
‘Maria was at the party...’
- (35) a. I Maria tha ine sto parti, and her sister will, too.  
*the Maria FUT be.NONPAST.3s at.the party*  
‘Maria will be at the party...’
- b. \*I Maria ine sto parti, and her sister will, too.  
*the Maria be.NONPAST.3s at.the party*  
‘Maria is at the party...’
- c. \*I Maria itan sto parti, and her sister will, too.  
*the Maria be.PAST.3s at.the party*  
‘Maria was at the party...’

2.3 A valuation/binding solution

DAHL'S PUZZLE (Dahl 1973) *Slogan*: From the bottom-up, once you go sloppy, you stay sloppy.

- (36) John said he loved his mom, and Bill did, too.
  - a. ... and Bill said Bill loved Bill's mom. *sloppy sloppy*
  - b. ... and Bill said Bill loved John's mom. *sloppy strict*
  - c. ... and Bill said John loved John's mom. *strict strict*
  - d. ... \*and Bill said John loved Bill's mom. *strict sloppy*

(37) **Parallelism** constraints on binding relations (Fiengo and May 1994, Hardt 2005, Merchant 2008, Takahashi and Fox 2006):

Binding and scope relations must be the same in antecedent and elliptical clause

- (38) Fiengo & May, Fox: The problem is creating the right kind of antecedent—in order to generate (36d), given Parallelism, we'd need the following, and this is banned by Economy (‘Don't Overlook Anaphoric Possibilities’; Williams 1997)
  - a. \*John said he<sub>John</sub> loved his's mom.

## AN ASIDE: WHY PARALLELISM ISN'T ENOUGH

- We still need MaxElide (as Merchant 2008:152, Fox and Lasnik 2003:153 fn 10 point out, *pace* Messick and Thoms 2016; see esp. Griffiths and Lipták 2014):

- (39) Abby met most applicants, but I can't remember exactly which ones (\*she did).
- (40) "Sluicing with indefinite correlates repairs islands, but Sluicing with focused correlates does not." (Merchant 2008:148)
- a. \*The radio played a song that RINGO wrote, but I don't know who else. (~~the radio played a song that *t* wrote~~)
- b. I only played a song that RINGO wrote because you did (~~play a song that *t* wrote~~)

## AN ANALYSIS

- "island-escaping focus movement cannot target the highest IP ... [this] will prevent the correlate from attaining the necessary scopal parallelism with the *wh*-phrase (clause-external), and hence these clauses can never satisfy the identity requirement needed to license deletion" (Merchant 2008:151)

- (41) I only RINGO<sub>F</sub> λx [vP [vP played a song that x wrote ] because you did ~~play a song that x wrote~~ ]

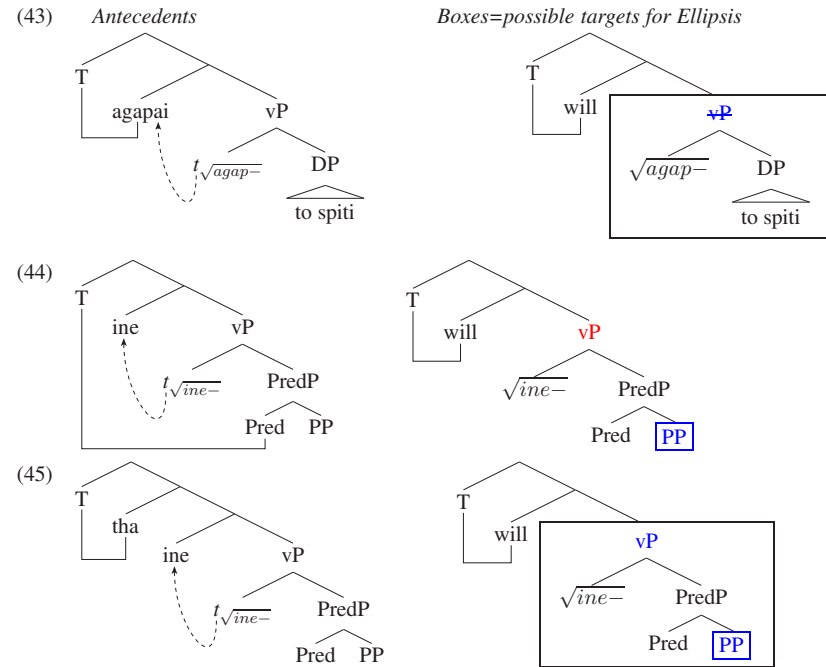
A better analysis: covert focus-associate pied-piping (Erlewine and Kotek 2016):

- (42) a. I only [DP a song that RINGO<sub>F</sub> wrote ]<sub>1</sub> played *t*<sub>1</sub> because you did ~~play it~~.
- b. \*[DP a song that RINGO<sub>F</sub> wrote ]<sub>1</sub> the radio played *t*<sub>1</sub>, but I don't know who else ~~the radio played it~~.

## THREE INGREDIENTS TO THE SOLUTION

1. There is a **grammatical dependency** between the head of the clause (which I'll use T for, for concreteness: if you prefer Fin, C, Pol/Σ/X, substitute at will) and the highest qualifying verbal or predicational head
2. English  $\sqrt{be}$  and Greek  $\sqrt{ine}$  are not participants in this dependency (presumably because  $\sqrt{be}$  isn't a real tense bindee/finiteness valuator or event marker: other verbs and heads of nonverbal predicates can be)
3. Head movement can change the position of the bindee/valuator: it makes the binding/valuation relation more local (feeds higher binding/closer valuation/feature satisfaction), and this derived dependency must satisfy Parallelism

(Open question: what is the nature of the grammatical dependency between C/T/Pol/Σ/X and *agapai/will/Pred* etc.? Is it binding of a variable (tense or event), is it valuation on C/T/... of some feature (finiteness, predication, Pol?), is a (possibly nonlocal) selection by the higher head for a non-*be* predicational head?)



## 2.4 Conclusions from code-switching in Warner's paradigm

1. Lasnik's idea about morphological form timing split can't account for the Greek-English data (neither can Potsdam's finiteness)
2. We need to dissociate the verb root from its fully inflected form, syntactically (the verb root alone can resolve ellipsis, under reconstruction)
3. Copula *be* and *ine* are inert for the syntactic dependency between T and the highest element in the predicational extended projection: and the ellipsis parallelism requirement is sensitive to the precise form of this dependency.

### 3 How selection works

- (46) Merge( $\alpha$ ,  $\beta$ )  
 For any syntactic objects  $\alpha$ ,  $\beta$ , where  $\alpha$  bears a nonempty selectional list  $\ell = \langle F_1, \dots, F_n \rangle$  of selectional features, and  $\beta$  bears a categorial feature  $F'$  that matches  $F_1$ , call  $\alpha$  the head and
- let  $\alpha = \{ \gamma, \{ \alpha - \ell, \beta \} \}$  call  $\gamma$  the projection of  $\alpha$ , and
  - if  $n > 1$ , let  $\ell = \langle F_2, \dots, F_n \rangle$ , else let  $\ell = \emptyset$ , and
  - let  $\gamma = \begin{bmatrix} \text{CAT} & [\text{cat}(\alpha)] \\ \text{SEL} & [\ell] \end{bmatrix}$
- (47) Set  $F$  of selectional features = { N, V, P, A, C, *on*, *in*, +wh, -Q, +pl,  $\sqrt{\text{RELI}}$ , ... }  
 This permits c(ategory)- and l(exical)-selection (Pesetsky 1991)  
 (See Kobele 2012, Collins and Stabler 2016 for related definitions )
- A prima facie surprising claim: all arguments are severed from the root (Borer 2005, Pylkkänen 2008, Adger 2013, Lohndal 2014, De Belder and van Craenenbroeck 2015)

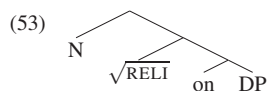
### 4 Category-invariant l(exical)-selection

- (48) a. They rely **on** oil.  
 b. Their reliance **on** oil is well-known.  
 c. They are reliant **on** oil.
- (49) a. The compound reacted **to** light.  
 b. The compound's reaction **to** light was expected.  
 c. The compound was reactive **to** light.
- (50) a. **in** de liefde geloven Dutch (Neeleman 1997)  
*in the love believe 'believe in love'*  
 b. het geloof **in** de liefde  
*the belief in the love 'the belief in love'*
- (51) a. Anna glaubt **an** die Logik. German  
*Anna believes on the logic 'Anna believes in logic.'*  
 b. Annas Glaube **an** die Logik ist unerschütterlich.  
*Anna's belief on the logic is unshakable.*  
*'Anna's belief in logic is unshakable.'*
- (52) V-N-A tuples with selected Ps (a selection from a database of 1109 so far<sup>1</sup>)

<sup>1</sup>Thanks to Elizabeth Wood, Omar Agha, and Kate Mooney for help in assembling these.

V	N	A	P
look, name			after
jeer			at
laugh	laughter		at
wonder	wonder		at
work			at
angle			for
apologize	apology	apologetic	for
atone	atonement		for
blame	blame		for
call	call		for
	craze	crazy	for
		game	for
hope	hope	hopeful	for
long			for
wait	wait		for/on
believe	belief	(cf. <i>credulous of</i> )	in
delight	delight		in
trust	trust	trusting	in
look	look		into
check			on
depend	dependence	dependent	on
rely	reliance	reliant	on
appeal	appeal	appealing	to
	audibility	audible	to
confess	confession		to
dedicate	dedication	dedicated	to
object	objection		to
react	reaction	reactive	to
respond	response	responsive	to
	right		to
	sensitivity	sensitive	to
submit	submission	submissive	to
	visibility	visible	to
	consciousness	conscious	of
dispose			of
	guilt	guilty	of
	innocence	innocent	of
tire		tired	of
comply	compliance	compliant	with
cope, toy			with
dispense	dispensation		with

- “the fact that selectional restrictions remain in force across the nominal/verbal divide (*study chemistry/student of chemistry*) suggests that whatever low category is sister to the internal argument is **not specific to the nominal** extended projection. The acategorial root meets this description perfectly” (Harley 2014:22–23 fn 22, emphasis added).



N as *categorizer* (often written *n*)

(54) a.  $\sqrt{\text{RELI}}$ :: [SEL:(on)]

b. N:: [SEL:({ $\sqrt{\text{RELI}}$ , ... })]

(55)  $N \leftrightarrow \text{ance} / \sqrt{\text{RELI}} \text{ —}$

- “These facts are arbitrary.” (Pesetsky 1991:10)

- (56) a. a time-sensitive (\*to) matter; the matter’s time-sensitivity (\*to)  
 b. a drug-dependent (\*on) recovery; his drug-dependence (\*on)
- (57)  $[[\textit{of/in/on/at/...}] = \lambda x_{\tau}[x_{\tau}]$  (meaningless prepositions denote identity functions)
- (58) a. She envies his accomplishments.  
 b. Her envy **of** his accomplishments is understandable.  
 c. She is envious **of** his accomplishments.
- (59) a. We appreciate his help.  
 b. Our appreciation **of** his help is great.  
 c. We are appreciative **of** his help.
- (60) a. Abby fears dark spaces.  
 b. Abby’s fear **of** dark spaces is well known.  
 c. Abby is fearful **of** dark spaces.
- (61) V-N-A tuples with verbal direct objects and N/A *of*-objects

V	N	A	P
appreciate x	appreciation	appreciative	of
arrest x	arrest		of
choose x	choice		of
confirm x	confirmation		of
deny x	denial		of
destroy x	destruction	destructive	of
envy x	envy	envious	of
fear x	fear	fearful	of
indicate x	indication	indicative	of
study x	student		of

## 5 Category-dependent I(exical)-selection

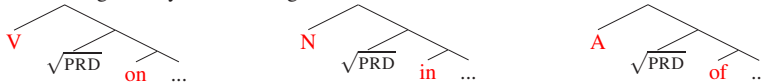
- (62) a. I oppose (\*to) lower capital gains taxes.  
 b. My opposition **to** lower capital gains taxes is well known.  
 c. I am very opposed **to** lower capital gains taxes.
- (63) a. I desire (\*for) chocolate.  
 b. My desire **for** chocolate knows no bounds.  
 c. I am desirous **of** chocolate.

- (64) a. Buckley attacked (\*on) liberalism.  
 b. Buckley’s attack **on** liberalism was scathing.
- (65) a. Sam needs to account **for** his behavior.  
 b. Sam’s account **of** his behavior was penitent.
- (66) a. Her country abounds **in** mineral wealth.  
 b. Her country enjoys an abundance **of** mineral wealth.  
 c. Her country is abundant **in/?with** mineral wealth.
- (67) a. She prides herself **on** her thoroughness.  
 b. Her pride **in** her thoroughness is understandable.  
 c. She is proud **of** her thoroughness.
- (68) a. I rarely concern myself **about/\*for/with** his progress.  
 b. My rare concern **about/for/with** his progress is understandable.  
 c. I am quite unconcerned **about/\*for/?with** his progress.
- (69) a. i. She attempted the hardest problem.  
 ii. She attempted to climb the Sears Tower.  
 iii. She attempted taking seven courses in one quarter.
- (70) a. i. Her attempt **of** the hardest problem was inspiring.  
 ii. Her attempt to climb the Sears Tower was illegal.  
 iii. Her attempt \*(at) taking seven courses was insane.  
 iv. \*Her attempt **of** taking seven courses was insane.
- (71) a. Ralph answered (\*to) the question.  
 b. Ralph’s answer **to** the question was the best one.
- (72) a. The music disrupted her concentration.  
 b. The music’s disruption **of** her concentration was complete.  
 c. The music is disruptive **to** her concentration.
- (73) a. Bernie supports (\*for) tax increases on the wealthy.  
 b. Bernie’s support **of/for** tax increases on the wealthy is unwavering.  
 c. Bernie is supportive **of/\*for** tax increases on the wealthy.
- (74) a. Abby is the equivalent **of** three teachers.  
 b. Abby is equivalent **to** three teachers.
- (75) a. Sara helped me.  
 b. Sara’s help **to** me was invaluable. Sara was a great help **to** me.  
 c. Sara was very helpful **to** me.
- (76) a. The gang menaced the neighborhood.  
 b. The gang’s menace **to/\*of** the neighborhood was clear.  
 c. The gang was (very/un-) menacing **to/\*of** the neighborhood.
- (77) a. She sympathizes **with** the refugees/your proposal.  
 b. She has great sympathy **with/\*to** the refugees/your proposal.  
 c. She is very sympathetic **to/\*with** the refugees/your proposal.

(78) V-N-A tuples with differing selected Ps or direct objects (134 in database)

V	N	A
abound in/with x	abundance of x	abundant in/?with x
access x	access to x	
account for x	account of x	
answer x	answer to x	
appall x		appalling to x
assault x	assault on x	
astonish x		astonishing to x
attack x	attack on x	
attempt x	attempt at/of x	
benefit x	benefit to x	beneficial to x
concern oneself with x	concern with/for/about x	concerned about x
	contempt for x	contemptuous of x
desire x	desire for x	desirous of x
destroy x	destruction of x	destructive to x
disrupt x	disruption of x	disruptive to/?of x
encounter x	encounter with x	
	equivalent of x	equivalent to x
	faith in x	faithful to x
help x	help to x	helpful to x
oppose x	opposition to x	opposed to x
pride oneself on x	pride in x	proud of x
resemble x	resemblance to x	
support x	support of/for x	supportive of x
	synonym of/for x	synonymous with x
witness x	witness to x	

(79) The usual geometry cannot be right:



This geometry cannot be saved by analyzing the *on*, *in*, *of* alternation as one of contextually triggered allomorphy (idea: roots like  $\sqrt{\text{PRD}}$  c-select for an underspecified P, and DM rules spell P out as *on*, *in*, *of*):

$$(80) P \leftrightarrow \text{in} / N \sqrt{\text{PRD}} \text{ \_\_\_}$$

**Problem 1:** Many roots are like  $\sqrt{\text{OPPOS}}$  where a verbal direct object alternates with a PP complement to an N or A: the following set of selectional features fails to account for the category-sensitivity:

$$(81) \sqrt{\text{OPPOS}} \left[ \begin{array}{l} \text{CAT} \quad [\sqrt{\text{V}}] \\ \text{SEL} \quad [\{\{D, P\}\}] \end{array} \right]$$

**Problem 2:** Allomorphic rules are too late: these alternations feed wh-movement

(82) The legislature passed the proposal to which we were opposed.

**5.1 Solution: Categorizing heads may have two selectional features**

Categorizing heads select for some roots and not others: these idiosyncrasies are listed as the set of selectional features that a particular category head takes.

$$(83) N_{in} \left[ \begin{array}{l} \text{CAT} \quad [N] \\ \text{SEL} \quad [\{\{\sqrt{\text{PRD}}, \sqrt{\text{TRUST}}, \sqrt{\text{FAITH}}, \dots\}, \text{in}\}] \end{array} \right]$$

$$(84) V_{on} \left[ \begin{array}{l} \text{CAT} \quad [V] \\ \text{SEL} \quad [\{\{\sqrt{\text{PRD}}, \sqrt{\text{RELI}}, \dots\}, \text{on}\}] \end{array} \right]$$

$$(85) A_{of} \left[ \begin{array}{l} \text{CAT} \quad [A] \\ \text{SEL} \quad [\{\{\sqrt{\text{PRD}}, \sqrt{\text{DESIR}}, \dots\}, \text{of}\}] \end{array} \right]$$

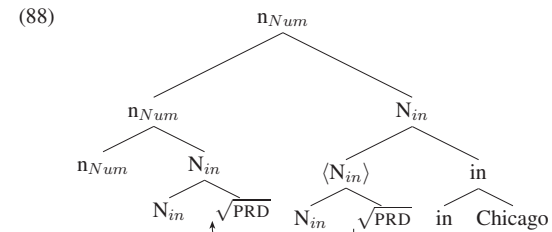
- Merge in (46) applies iteratively: the first selectional feature on the list licenses the construction of the N/V/A + root:

$$(86) \text{Merge}(\ N_{in} \ , \ \sqrt{\text{PRD}} \ ) = \begin{array}{c} N_{in} \\ \text{(in)} \\ \swarrow \quad \searrow \\ N_{in} \quad \sqrt{\text{PRD}} \end{array}$$

- The second selectional feature on the list licenses the Merger of the PP:

$$(87) \text{Merge}(\ N_{in} \ , \ \text{in} \ ) = \begin{array}{c} N_{in} \\ \swarrow \quad \searrow \\ N_{in} \quad \text{in} \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ N_{in} \quad \sqrt{\text{PRD}} \quad \text{Chicago} \end{array}$$

- After merger of additional functional heads in the extended projection of N and head movement (additional operations such as Local Dislocation not represented):



$$(89) \begin{array}{ll} \text{a. } \sqrt{\text{PRD}} \leftrightarrow \text{pride} / \text{\_\_\_} N & \text{c. } \sqrt{\text{PRD}} \leftrightarrow \text{proud} / \text{\_\_\_} A \\ \text{b. } \sqrt{\text{PRD}} \leftrightarrow \text{pride} / \text{\_\_\_} V & \end{array}$$

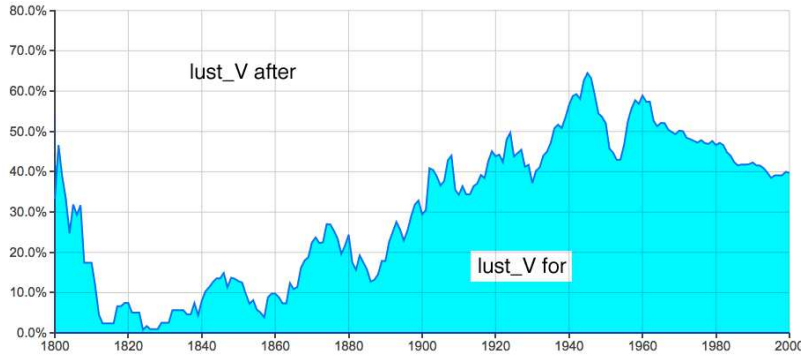
N node realization is not sensitive to selectional features, only to the list of roots (cf. Alexiadou et al. 2007, Adger 2013):

$$(90) \text{reliance on, abundance in, resemblance to: } N_{on}, N_{in}, N_{to}$$

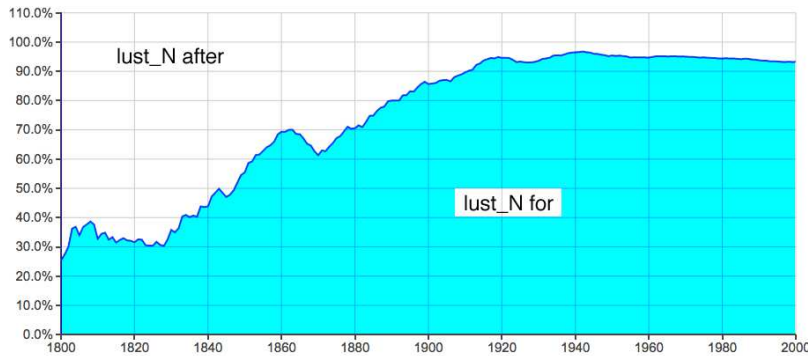
$$(91) N \leftrightarrow \text{ance} / \{\sqrt{\text{RELI}}, \sqrt{\text{ABOUND}}, \sqrt{\text{RESEMBL}}, \dots\}$$

5.2 The history of *lust*

- (92) a. They lust **for/after** chocolate.  
 b. Their lust **for/\*after** chocolate was insatiable.
- (93) Relative frequency of verbal *lust for* vs *lust after*:



- (94) Relative frequency of nominal *lust for* vs *lust after*:



Conclusion: selectional features are **stochastic**

One implementation of a probabilistic CFG ( $G = (N, T, S, R, p)$ ) with subcategorization:  $p$  is a parameter for each rule  $A \rightarrow \beta \in R$ , such that for each  $A \in N$ :

$$\sum_{A \rightarrow \beta \in R(A)} p(A \rightarrow \beta) = 1$$

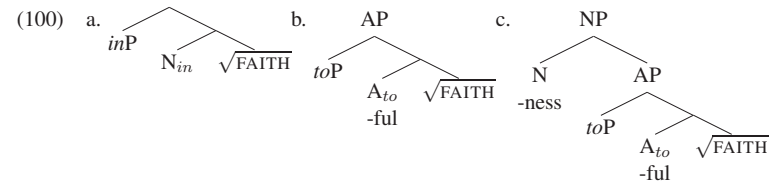
$$(95) V_{for} \left[ \begin{array}{l} \text{CAT} \quad [V] \\ \text{SEL} \quad [\{\{\sqrt{\text{LUST}}^{0.4r}, \dots\}, \text{for}\}] \end{array} \right]$$

$$(96) V_{after} \left[ \begin{array}{l} \text{CAT} \quad [V] \\ \text{SEL} \quad [\{\{\sqrt{\text{LUST}}^{0.6r}, \dots\}, \text{after}\}] \end{array} \right]$$

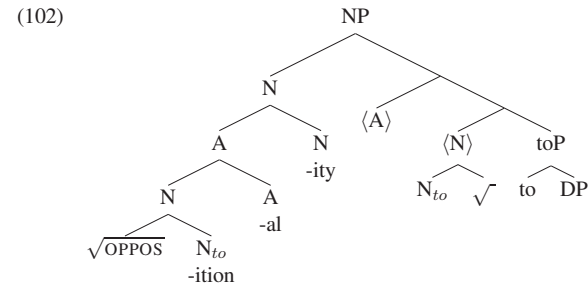
5.3 Inner vs. outer selection

Inner categorizing heads:

- (97)  $\emptyset$ , -al, -ance, -ant/ent, -ed, -ful, -ible, -ing, -ive, -(t)ion, -(u)ous
- (98) **Prediction:** Categorizing heads that take already categorized XPs cannot alter the selectional properties.  
 -ness, -hood, -ity, -ish, -al, (see Lowenstamm 2014 on *-al* as a root)
- (99) a. She exhibits great faith **in** God.  
 b. She is very faithful **to** God.  
 c. She exhibits great faithfulness **{to/\*in}** God.



- (101) oppose (\*to), opposition to, oppositional to, oppositionality to

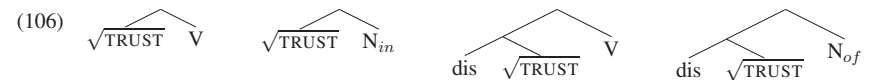


- *-er* attaches to V; therefore, the verbal selectional feature persists:

- (103) a. Sam was the first responder **to/\*of** the accident.  
 b. Abigail is a firm believer **in/\*of** the power of yoga to improve one's life.  
 c. Conscientious objectors **to/\*of** the war were put in prison.
- (104) a. Buckley was the attacker **of/\*on** more than a dozen of the victims.  
 b. Abby is a supporter **of/\*for** equal rights.

*dis-* in *distrust* is root-attaching (cf. *disgust*):

- (105) a. They trust me. Their trust **\*of/in** me is not misplaced.  
 b. They distrust me. Their distrust **of/\*in** me is utterly unfounded.



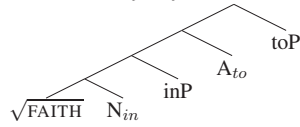


## 5.4 Neeleman's Generalizations (Neeleman 1997)

### 5.4.1 There can be at most one idiosyncratic PP per root

This follows if such PPs can only be selected by the categorizing head; additional PPs (e.g., *about*P) and DP arguments are introduced by *v* (or *Appl*, or *v<sub>Appl</sub>*) heads.

- (107) a. Abby talked to Ben about the weather.  
 b. Abby reported to Ben on the the weather.  
 c. The story/book/article/talk/speech/report was about/on the weather. (Grimshaw and Rosen 1990, Adger 2013:82)  
 d. The report was to Ben, not to you.  
 e. Abby spilled the beans to Ben about the weather.
- (108) a. What blocks *\*faithful in God to his commands*?



- b. Semantic failure:  $[[\sqrt{\text{FAITH}}]] = \lambda x \lambda s [faith(s)(x)] : \langle e, vt \rangle$   
 $\lambda x \lambda s [faith(s)(x)] ([[in\ God]]) \rightsquigarrow \lambda s [faith(s)(god)] : \langle vt \rangle$   
 No way to compose with an additional type *e* argument:  $[[to\ his\ commands]] = his.commands$   
 $(e)$   
 $\lambda s [faith(s)(god)] \circ his.commands \rightsquigarrow \perp$

### 5.4.2 There are no idiosyncratic PP subjects

- (109) a. *\*In jazz will interest everyone here.*  
 b. *\*It would be surprising if on this land abounded (with) high-quality grains.*  
 c. *\*It would be surprising for on this land to abound (with) high-quality grains.*

An embarrassment of riches (possible reasons): 1. Cf. Ramchand's Generalization (Ramchand 2008)? 2. Agree is blocked by PP? (But both *\*It was worked on many alternatives* and *\*There were worked on many alternatives* are bad...) 3. only category heads can l-select; *v*, etc. (the neo-Davidsonian menagerie of argument-introducing heads) cannot select PP without imposing a  $\theta$ -requirement on them (e.g., *v<sub>on</sub>* in *They embroidered stars on the jacket* is  $[[v_{on}]] = \lambda r : r \in LocativeRelations \in [[ori]][r]$

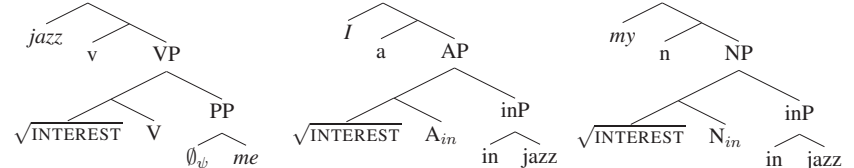
## 5.5 Psych predicates (32 in database)

In case you thought psych predicates (experiencer object verbs) weren't already a big enough problem for the U(T)AH:

- (110) a. I anger him. (*\*He angers at me.*)  
 b. His anger at me is baffling.  
 c. He is angry at me.
- (111) a. Jazz interests me. (*\*I interest in jazz.*) (They interested me in jazz.)  
 b. My interest in jazz has never flagged.

- c. I am interested in jazz. (?I interested myself in jazz.)
- (112) a. Her attitude exasperates me. (*\*I exasperate with/at her attitude.*)  
 b. My exasperation with>at her attitude is unappealing.  
 c. I'm very exasperated with>at her attitude.
- (113) a. That frightens me.  
 b. My fright at/?over/\*in/about his absence was real.  
 c. I am (very/un-) frightened at/?over/\*in/about/by his absence.
- (114) a. (*\*His absence remorsees me.*)(*\*I remorse (myself) at his absence.*)  
 b. My remorse at/?over/\*in/about his absence was real.  
 c. I am quite remorseful at/?over/\*in/about his absence.
- (115) a. The movie upset me.  
 b. (*\*My upset at the movie was fleeting.*) (Cf. The team's upset of/\*at their opponents was amazing.) c. I am very upset at the movie.

### (116) Modifying Landau 2010 (Object experiencers are PPs):

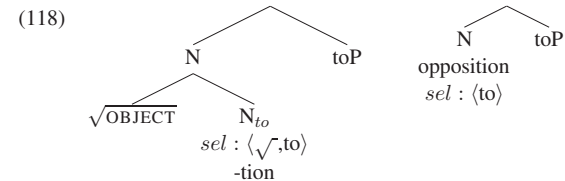


## 5.6 Uniform selection

- (117) rely on, reliance on, reliant on

### • Possibilities:

1. Some selectional features go on the 'root' after all? (Some nouns come categorized?)



Worst of all possible worlds? Loses the parallel of *object:ion::opposition:tion*.

2. In a traditional lexicalist theory, "Regularities involving only selectional features might in principle be stated as redundancy rules of the lexicon" (Chomsky 1970:213)

- (119) a.  $V[\dots X \dots] \leftrightarrow A[\dots X \dots]$   
 b.  $V[\dots X \dots] \leftrightarrow N[\dots X \dots]$   
 c.  $N[\dots X \dots] \leftrightarrow A[\dots X \dots]$

(120) Elsewhere case:  
 $[...X...]_{\alpha} \leftrightarrow [...X...]_{\beta}$   
 $[SEL[< F_1, \dots, F_n >]] \quad [SEL[< F_1, \dots, F_n >]]$

(121)  $rely_V \leftrightarrow reliant_A$   
 $[SEL[< on >]] \quad [SEL[< on >]]$

- There is ‘joint selection’, with selectional features activated on roots by higher category nodes (cf. V-movement feature on T activated by matrix C in Scandinavian; Case feature on p/P activated by Voice[act] in pseudopassivizing languages)
- These cases all involve layered categorizers: additional affixes on low (presumably verbal) categorized stems (so *reliance* and *resemblance* have differing amounts of structure; cf. Bruening 2014 on adjectival passives):

(122)

- The generalizations (and predictive power) are over larger chunks of structure: spanning (Merchant 2015a), fragment grammars (O’Donnell 2015).

(123)

## 6 Conclusions

- There is category-sensitive selection: the lexical category can determine the idiosyncratic, non-semantically predictable preposition that a complement PP is headed by
- A morphological timing solution to the Warner/Lasnik facts can’t account for the code-switching data
- Categorizing heads are separate from roots (as category-sensitive selection shows) and vice versa (as resolution of ineffable ellipses shows): there’s more to a word than meets the ear

## References

- Adger, David. 2013. *A syntax of substance*. Cambridge, Mass.: MIT Press.
- Alexiadou, Artemis, Liliane Haegeman, and Melita Stavrou. 2007. *Noun phrase in the generative perspective*. Berlin: Mouton de Gruyter.
- Borer, Hagit. 2005. *Structuring sense (vols. 1. and 2)*. Oxford: Oxford University Press.
- Bruening, Benjamin. 2014. Word formation is syntactic. *Natural Language and Linguistic Theory* 32:363–422.
- Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English transformational grammar*, ed. R. A. Jacobs and Peter S. Rosenbaum, 184–221. Waltham, Massachusetts: Ginn-Blaisdell.
- Chung, Sandra. 2013. Syntactic identity in sluicing: How much, and why. *Linguistic Inquiry* 44:1–39.
- Collins, Chris, and Edward Stabler. 2016. A formalization of Minimalist syntax. *Syntax* 19:43–78.

- Dahl, Östen. 1973. On so-called sloppy identity. *Synthese* 26:81–112.
- De Belder, Marijke, and Jeroen van Craenenbroeck. 2015. How to merge a root. *Linguistic Inquiry* 46:625–655.
- Erlewine, Michael Yoshitaka, and Hadas Kotek. 2016. Tanglewood untangled. In *Proceedings of SALT 26*.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. Cambridge, Massachusetts: MIT Press.
- Fox, Danny, and Howard Lasnik. 2003. Successive-cyclic movement and island repair: the difference between Sluicing and VP-ellipsis. *Linguistic Inquiry* 34:143–154.
- González-Vilbazo, Kay, and Sergio Ramos. 2012. A morphosyntactic condition on sluicing: Evidence from Spanish/German code-switching. Ms., University of Illinois at Chicago. To appear in *Linguistic Inquiry*.
- Griffiths, James, and Anikó Lipták. 2014. Contrast and island sensitivity in clausal ellipsis. *Syntax* 17:189–234.
- Grimshaw, Jane, and Sara Thomas Rosen. 1990. Knowledge and obedience: The developmental status of the binding theory. *Linguistic Inquiry* 21:187–222.
- Hardt, Daniel. 2005. Inference, ellipsis and deaccenting. In *Proceedings of the Fifteenth Amsterdam Colloquium*, ed. Paul Dekker and Michael Franke, 107–112. ILLC/Department of Philosophy, Amsterdam: University of Amsterdam.
- Harley, Heidi. 2014. On the identity of roots. *Theoretical Linguistics* 40:225–276.
- Huddleston, Rodney. 1978. On the constituent structure of VP and Aux. *Linguistic Analysis* 4:31–59.
- Kobele, Gregory M. 2012. A derivational approach to phrasal spellout. Slides from a presentation at BCGL 7, Brussels.
- Landau, Idan. 2010. *The locative syntax of experiencers*. Cambridge, Mass.: MIT Press.
- Lasnik, Howard. 1995. Verbal morphology: Syntactic Structures meets the Minimalist Program. In *Evolution and revolution in linguistic theory*, ed. Hector Campos and Paula Kempchinsky. Georgetown: Georgetown University Press.
- Lohndal, Terje. 2014. *Phrase structure and argument structure: A case study of the syntax-semantics interface*. Oxford: Oxford University Press.
- Lowenstamm, Jean. 2014. Derivation affixes as roots: Phasal Spell-out meets English Stress Shift. In *The syntax of roots and the roots of syntax*, ed. Artemis Alexiadou, Hagit Borer, and Florian Schäfer, 230–258. Oxford: Oxford University Press.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In *Topics in ellipsis*, ed. Kyle Johnson, 132–153. Cambridge: Cambridge University Press.
- Merchant, Jason. 2013. Voice and ellipsis. *Linguistic Inquiry* 44:77–108.
- Merchant, Jason. 2015a. How much context is enough? Two cases of span-conditioned stem allomorphy. *Linguistic Inquiry* 46:273–304.
- Merchant, Jason. 2015b. On ineffable predicates: Bilingual Greek-English code-switching under ellipsis. *Lingua* 166:199–213.
- Messick, Troy, and Gary Thoms. 2016. Ellipsis, economy, and the (non)uniformity of traces. *Linguistic Inquiry* 47:306–332.
- Neeleman, Ad. 1997. PP-complements. *Natural Language and Linguistic Theory* 15:89–137.
- O’Donnell, Timothy J. 2015. *Productivity and reuse in language: A theory of linguistic computation and storage*. Cambridge, Mass.: MIT Press.
- Pesetsky, David. 1991. *Zero syntax: Vol. 2: Infinitives*. Ms., MIT.
- Potsdam, Eric. 1997. English verbal morphology and VP ellipsis. In *Meeting of the North Eastern Linguistic Society*. GLSA.
- Pykkänen, Liina. 2008. *Introducing arguments*. Cambridge, Mass.: MIT Press.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1972. *A grammar of contemporary English*. New York: Seminar Press.
- Ramchand, Gillian. 2008. *Verb meaning and the lexicon*. Cambridge: Cambridge University Press.
- Takahashi, Shoichi, and Danny Fox. 2006. MaxElide and the re-binding problem. In *Proceedings of Semantics and Linguistic Theory*.
- Thoms, Gary. 2015. Syntactic identity, parallelism and accommodated antecedents. *Lingua* 166:172–198.
- Warner, Anthony. 1985. *The structure of English auxiliaries: A phrase structure grammar*. Bloomington, Indiana: Indiana University Linguistics Club.
- Williams, Edwin. 1997. Blocking and anaphora. *Linguistic Inquiry* 28:577–628.