Distributed Morphology

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Readings: Downloadable from the course home page,
http://dingo.sbs.arizona.edu/~hharley/courses/ABRALIN/ABRALIN2007/

(Note: Schedule is only approximate! We will deviate from this if we need to.)

Feb. 22 Introduction to (post-)syntactic morphology
Harley and Noyer 2000: "Distributed Morphology"
Bobaljik 2000: "The ins and outs of contextual allomorphy"

Feb. 23 Complex verb structure
Harley, 2006, "On the causative construction"
Travis, 2000, "Event Structure in Syntax"

Feb. 24 Irregularity, blocking and getting morphemes in order
Embick, David. "Locality, Listedness and Morphological Identity"
Barragan, Luis. "Movement and allomorphy in the Cupeno verb construction"

Feb. 25 Phi-features and post-syntactic morphological operations
Williams, Edwin. "Remarks on Lexical Knowledge"
Bobaljik, Jonathan. "Syncretism without paradigms"
(Frampton, John. "Syncretism, Impoverishment and the structure of person features")

Feb. 26 DM as a psychological model
Pfau, R. 2000. "Speech Errors and Distributed Morphology" Chapts 1, 2 and 4 only.
Longtin, C-M et al. 2000"Morphological Priming Without Morphological Relationship"

Feb. 27 Wrap-up: DM and semantics
Marantz, Alec. 1997. "No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon."
Kratzer, Angelika. 1996. "Severing the external argument from its verb"

1 Background: Distributed Morphology and the Syntax-Morphology Interface

Harley and Noyer 2000: "Distributed Morphology"

→ Some morphological terminology:

stem for 'suffix2'

[[prefix[[root]suffix1]]suffix2] root=stem for suffix1

stem for 'prefix'

Example: [[in[[describ]abil]ity]

→ derivation vs. inflection:
inflection is grammatically required, functional, productive
derivation is meaning and often category-changing, optional, can be 'gappy'

→ Some syntactic terminology
terminal nodes
head-movement

The word problem

→ Cranberry morphs, *kit & caboodle, in cahoots with*, idioms in general → "semantic" words, i.e. special, non-compositional meanings, can be of any size.

→ Phonological words: identified by e.g. phonotactic constraints, domain of vowel harmony, stress placement rules (often conflicting criteria)

→ Bracketing paradoxes: transformational grammarian: semantic and phonological bracketings differ.

Does the syntax care more about the phonology or the semantics?

→ Some morphological questions:

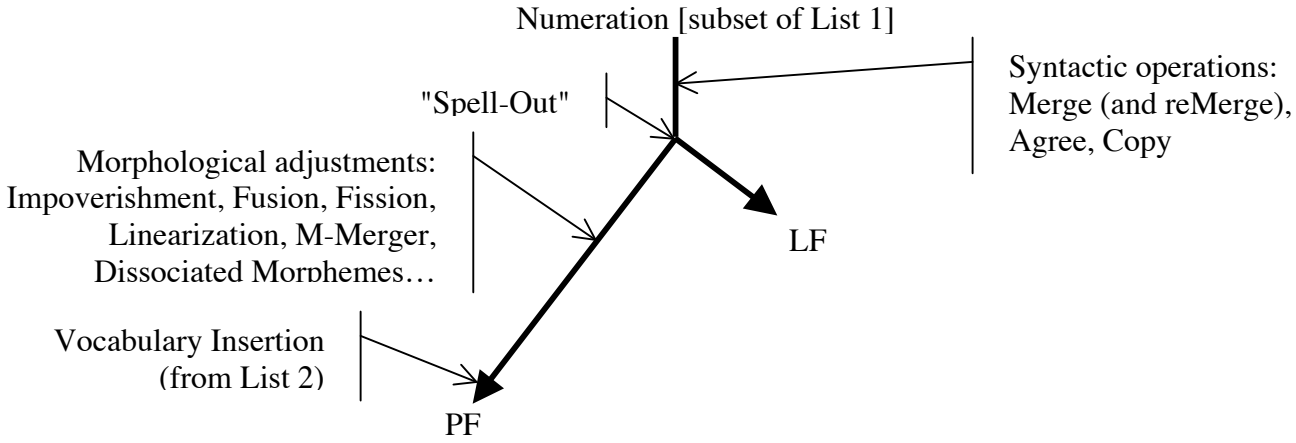
1. What is a word?
2. What are the subparts of words?
3. How are those subparts brought together?
4. Does wordhood (vs. phrasehood) matter for ('narrow') syntax or semantics?

→ Distributed Morphology answers:

1. A unit of (morpho)phonology. Some examples from English:
   conditional, John's, wetter, see 'im, above
2. Vocabulary items—(instructions for) pronunciations of bundles of morphosyntactic features. Some examples from English:
   /-d/ ←→ [$_{T°}$ +past]
   /- ʃən/ ←→ [$_{n°}$ +event] / [$_{nP}$ [… V_{ClassX}] ___]
   /æm/ ←→ [$_{T°}$ BE, +1, -pl]
   /∅/ ←→ [$_{Num°}$ +pl] / [$_{NumP}$ [N $_{ClassY}$] ___]
3. Morphosyntactic feature bundles are hierarchically arranged by the syntax, adjusted in certain ways by morphology, and then realized by vocabulary items.
4. No.
   wetter vs. *more waterlogged*

(1) The model: Syntax-driven morphology

List 1: Feature bundles: Abstract representations of syntactic primitives, both interpretable and uninterpretable, both functional and contentful.
List 2: Vocabulary Items: Instructions for pronouncing terminal nodes containing certain features



→ Derivational procedure:

(2) a. Merge & Move of morphosyntactic features
b. 'Spell-out' (end of syntactic derivation, representation goes to LF)
c. Morphological operations
d. Vocabulary Insertion into terminal nodes
e. Morphophonological operations (PF)

→ 'Full Interpretation' as applied to PF: Each terminal node in the syntax must have some representation at PF—each terminal node represents a "**position of exponence**" which must be provided by the morphological component with some phonological instructions (a 'realization')

→ Terminal nodes do not contain any specific phonological instructions until after the narrow syntax is complete.

→ Theoretical consequences

Syntactic Hierarchical Structure all the way down (including internal to words) (consequence of all structure being built by Merge)

Default situation: Morphological structure isomorphic to syntactic structure. (Mirror Principle falls out)

Underspecification of VIs and competition for insertion (consequence of Late Insertion)

Invisible phonology: Syntax can't 'see' irrelevant differences or similarities between items, e.g. that the elsewhere forms of [+pl] and [+3sg] are identical.

(3) A Distributed Morphology Derivation:

	Operation		**Output**
a.	**Syntax:** Construct Numeration by selecting feature (bundles) (List 1).	a.	{BE, [+1, +sg, +f]$_D$, [+past]$_T$, TALK, [+Prog]}
b.	**Syntax:** Construct interpretable sentence structure by Merge, Move of feature (bundles). (The output of this step is sent to LF for semantic interpretation, and to PF for Spell-Out.)	b.	TP D° T’ [+1] [+sg] T° ProgP [+f] [+past] [+1] Prog° VP [+sg] [+f] V°$_i$ Prog° ~~V~~°$_i$ [BE] [TALK] [+Prog] ~~[TALK]~~
c.	**Morphology:** Manipulate makeup of terminal bundles to conform to language-specific requirements (e.g. by Impoverishment, on which more anon).	c.	TP D° T’ [+1] [+sg] T° ProgP [+past] [+sg] Prog° VP [BE] V°$_i$ Prog° ~~V~~°$_i$ [TALK] [+Prog] ~~[TALK]~~
d.	**Morphology:** Realize (or ‘discharge’) the terminal nodes of the syntactic tree by inserting Vocabulary Items (List 2) into them, giving them phonological content.	d.	[[/aj/]$_D$ [[/wʌz/]$_{T°}$ [[[/tɑk/]$_V$[/ɪŋ/]$_{Prog}$] $_{Prog}$]$_{T’}$]$_{TP}$
e.	**Phonology:** Make morphophonological and phonological alterations to input as necessary to arrive at the optimal phonological form	e.	[ˈajwəzˈtʰɑkɨn]

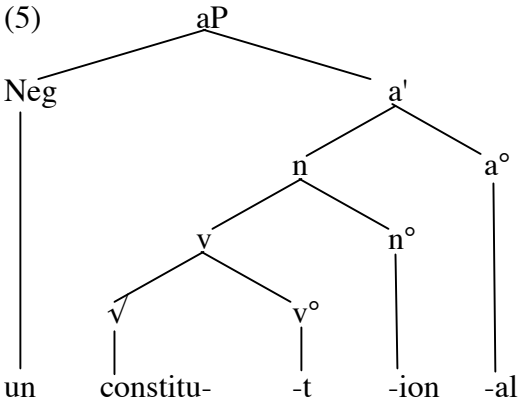
In most realizational morphological theories, including DM, it is a methodological assumption underspecification is the most desirable way to treat syncretism is via underspecification. Only if underspecification fails should more powerful tools of the theory be appealed to, such as an Impoverishment rule (DM) or a Rule of Referral (Paradigm Function Morphology, others).

(4) Loci of crosslinguistic variation:
List 1: Content and structure of feature bundles (interacts with syntax)
List 2: Content and structure of Vocabulary Items
(does not interact with syntax(?))
Language-particular morphological operations

→ Some questions:

- In a projection-based Lexicalist theory, the morphosyntactic features come from the morphemes and words themselves; in DM there's a sort of **double specification**—fully specified syntax and then the matching (underspecified) features on the VIs. Is this redundant?
- What is the relationship between Linearization, Head Movement and M-Merger? Can all of these processes result in the same type of word-formation effects? Example: Do we need to assume head-movement in a complex word like (5) below? Or is (VI-driven) linearization sufficient (and then the bound morphemes recognize their neighbors and just glom together)?

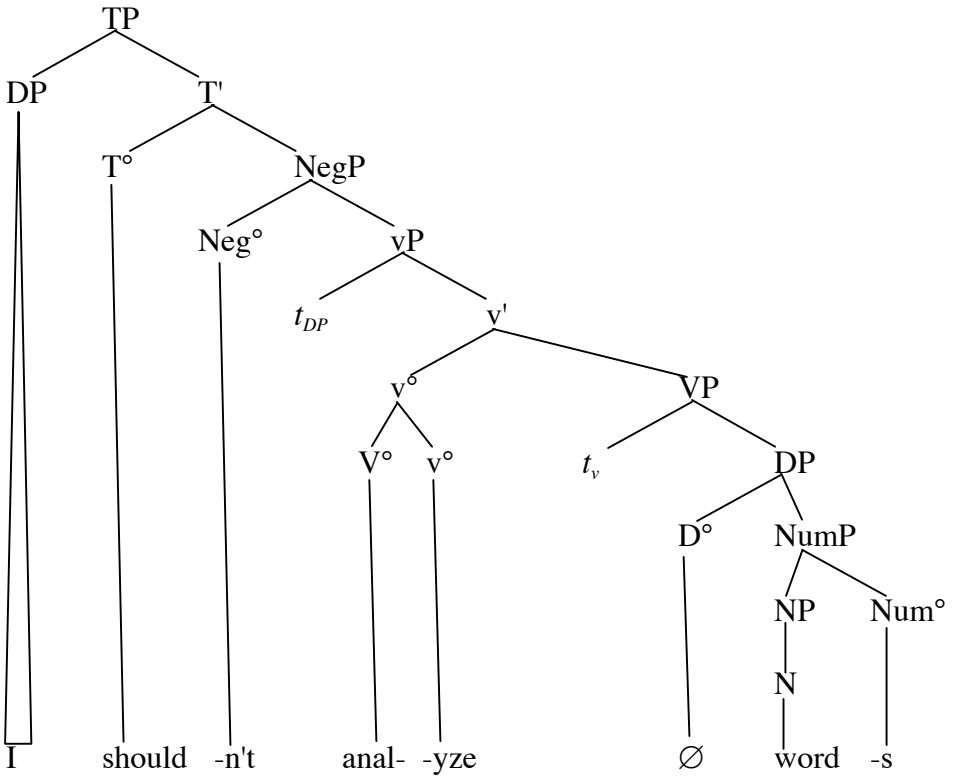
(5)



(constitu-ent, constitu-te)

→ If the above all seems pretty opaque, don't worry about it—the main thing for starters is to be comfortable with thinking of morphemes as leaves on a syntactic tree, for example like this:

(6) I shouldn't analyze words.



→ The importance of the separation of List 1 and List 2, the nature of vocabulary insertion, and the kind of variation that the system allows for and can cope with will hopefully become clear as the course progresses.

2 Bobaljik: An example analysis: Itelmen agreement

I Goals of the paper:

- A: to motivate a certain analysis of Itelmen agreement
- B: on the basis of that analysis, to make the strongest claim about morphological conditioning (allomorphy) that is consistent with the evidence of the analysis
- C: to consider and reject possible empirical counterexamples to the analysis
- D: to consider and reject possible alternative theoretical analyses of the phenomena

(7) a) Key assumptions:
- morphology interprets (spells-out) syntactically-assembled terminal nodes
- **interpretation proceeds root-outwards** (*cyclically*)
- as features are interpreted, they are **erased from the structure** (replaced with phonological material, no longer available to condition allomorphy)
- some 'features' are not morphosyntactic, but rather are 'morphophonological' — inserted as diacritics only with the particular root. In particular, verb and noun class features are like this. (Big question: what about gender?)

b) Example of how key assumptions work:

→ Syntax provides some terminal nodes, e.g.
$[_{Agr}[_{T}[_{V}V]Past]1pl]$

→ Morphology interprets them, spelling them out starting from the most embedded element, erasing the features (Turkish "to come")

$[_{Agr}[_{T}[gel]Past]1pl]$

→ $[_{Agr}[[gel]di]1pl]$

→ [[[gel]di]k]

c) Crucial point: because features are erased as phonology is inserted, allomorphy that depends on morphosyntactic features can only be sensitive *outwards* — to that part of the structure that has not yet been realized.
Allomorphy that depends on morphophonological features can only be sensitive *inwards* — to that part of the structure that has already been realized.

II Itelmen agreement

(8) Organization of the verb:

a)	t'	ləčqu-	(γ)in	
	Prefix	-Verb-	Suffix	
	SubjAgr-V-		ObjectAgr	(transitive)
	1sg:SU		2sg:OB	

b)	t-	k'oł	k(ičen)	
	SubjAgr-	V--	SubjAgr	(intransitive)
	1sg:SU		1sg:SU	

(note: other kinds of morphology may intervene between the verb root and the agreement markers -- Mood, Diminutive, etc..)

c) Note that the paradigm doesn't display true ergative-absolutive marking in the suffixes, as there are no suffixes in which identical features of an intransitive subject and an object are realized by the same morpheme. Agreement markers for objects and intransitive subjects show up **in the same place** but are crucially **distinct**.

d) Salient point: sometimes the choice of suffix even in transitive forms is depends on what features are expressed by the prefix (i.e. what the subject is), but the choice of prefix never depends on what features are expressed by the suffix.

e) For example:
If the object is:.....3sg
and the subject is:.....2pl
the suffix is::.....*-sx*

If the object is:.....3sg
and the subject is:.....3sg/pl
the suffix is:.....*-nen*

(9) More allomorphy: verb class markers:
→ For 16 Itelmen verbs, agreement is preceded by a class-marking morpheme.
→ This class-marking morpheme exhibits LOTS of allomorphy, conditioned by the features of both the subject and the object (in brackets below)

a)	t-	tɸ	-s	**ki**-	čeʔn	
	1sg:SU	bring	pres	**II**(1SU 3OB)	3pl:OB	(1sg:SU)
	"I'm bringing them"					(tasty rotten mouse heads)

(10) What's the structure that would be predicted if the assumptions in 1a) hold?
a) class is sensitive to subject and object, therefore class is spelled out before subject and object, therefore class is more embedded than subject and object:

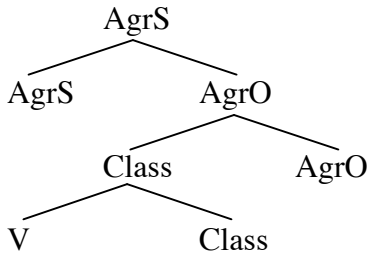
[[V]Class]

b) object is sensitive to subject but not to class; therefore object is spelled out before subject and after class, therefore object is less embedded than subject but more embedded than class:

[[V]Class]Object]

c) subject is sensitive neither to object nor to class, therefore it is the least embedded:

[S[[V]Class]Object]



d) interesting observation: this is exactly the structure that the syntax would produce if the features were assembled via head-to-head movement from V to AgrO to AgrS (assuming that the "Class" node is inserted with the V).

(11) a) Only the set of assumptions listed above, in conjunction with this structure, can *predict* the fact that in Itelmen we never see allomorphy in AgrS morphemes for AgrO features, or allomorphy in AgrO features for Class features.

*It's not as strong as this, actually: since the Class features are features of the individual verb's Vocabulary Item, I think he says that you COULD see inwards-sensitivity for such things — so in theory, conditioning of AgrO or AgrS by class could happen. What definitely *couldn't* happen is for AgrO to condition AgrS).*

b) Note that adjacency, structural or linear isn't enough to cover exactly this range of facts: the Class node is conditioned by AgrS, which is not only not linearly adjacent to it, but also not structurally adjacent to it.

6. No Lookahead:

a) affixation may be *inwards*-sensitive, not outwards-sensitive

e.g. choice of derivational nominalizing affix in English (-tion vs. ation vs. ing) depends on which verb it's attaching too -- it's inwardly sensitive

eg. choice of infinitive marker in French (*-er, ir, re*) depends on which class of verb it's attaching to.

e.g. choice of Germanic tense markers depends on the verb class (±strong)

b) Bobaljik's examples of Itelmen allomorphy are all outwards-sensitive (especially the sensitivity of the class marker to the object).

c) Bobaljik's solution is to say that **inwards-sensitivity to morphophonological features** (including "class" diacritics) is available because of the structure of the grammar; **outwards-sensitivity to morphosyntactic** features is available because of the structure of the grammar, but the reverse kinds of sensitivity are not available . That is, you have to relax the No-Lookahead condition, but only in a particularly constrained way.

d) The only way to ensure that features are unavailable after spell-out to condition allomorphy is to assert that **when spelled out, they are erased**. Note, however, that morphophonological features inserted with the VI that spells them out *may* condition such allomorphy.

e) This is a Very Subtle Distinction: if you see a putative counterexample, where it looks like inner features are conditioning outer allomorphy, is it the morphosyntactic features that are conditioning it? or is the actual affix that spells them out that is responsible?

3. Counterexample -- Chukchi agreement?

(12) Like Itelmen, Chukchi object suffixes are sensitive to the person of the subject:

a) ɬʔu- **-nin**
see- 3sg:OB (3:SU)
"S/he saw him/her/it"

b) te- ɬʔu- **-ɣʔen**
1sg:SU-see- 3sg:OB(1:SU)
"I saw him/her/it" (note typo in gloss in paper)

Unlike Itelmen, when the object is 3 person, the subject 3-sg prefix *ne-* disappears. It appears as if the features of the object are conditioning the realization of the subject prefix. Interestingly, the subject prefix disappears *in exactly the cases where it appears that the object suffix is sensitive to the features of the subject*!

(13) ne- -ɬʔu- -ɣet
3sg see 2sg
She/he/it sees you

(14) Chukchi indicative agreement affixes w/ 3rd person subjects:

Object / Subject	*1sg*	*1pl*	*2sg*	*2pl*	*3sg*	*3pl*
3sg		ne- -mək	ne- -ɣət	ne- -tək	**∅- -nin**	**∅- -ninet**
3pl	ne- -ɣəm	ne- -mək	ne- -ɣət	ne- -tək	**ne- -ɣʔen**	**ne- net**

→ Note systematicity of this pattern, since the same facts obtain with the distinct 3sg subject prefix *əʔ-* in the Hortative mood! (An important point to which we'll return)

(15) Three possible characterizations of this fact:

a) the object suffix is directly realizing both the subject and object features in exactly these cases, *bleeding* the insertion of the subject prefix. (Subject and object nodes might have undergone fusion, for instance)

b) the object features are conditioning allomorphy of the subject prefix: when the object is 3rd person, the subject prefix is realized as a ∅-allomorph. (or the subject features are simply deleted via Impoverishment)

c) the object *suffix* is conditioning allomorphy of the subject prefix: when the object suffix is *-nin* or *-ninet*, the subject prefix is realized as a ∅-allomorph (or the subject features are simply Impoverished).

(16) Bobaljik chooses option c), and has two arguments against b)

(17) First argument: look at the paradigm in 8. again. Notice that the non-appearance of the subject prefix is *not*, strictly speaking, determined by the featural content of the object node.

→ When the object is 3sg, the subject prefix deletes if it is 3sg but not if it is 3pl
→ That is, when the object is 3sg, the subject prefix deletes if the object pref. is *-nin* but not if it's *-ɣʔən*

So on a view where the object node has only the object's features, just looking at the object's features is not enough to determine whether the subject affix deletes or not. Rather, you have to look at the particular affix that realizes the object's features.

12. Second argument: consider a case where the object features are present but not realized by any affix, as in the ditransitive verb *give* when the object is 3rd person and the indirect object is 1st or 2nd person:

ne- jəl- ɣət
3sg- give- 2sg:OB
"S/he/it gave him/her/it to you"

In such a case, the *ne-* subject prefix is not deleted — even though the direct object is 3sg.

4. But what about option 9a)? surely that's more sensible...

He outlines 3 possible approaches to a):

13. Halle & Hale's approach
-nin breaks down into *-n(e)* - + *-in* — so it actually *is* spelling out the subject node, just in the wrong place: the *ne-* is displaced to the right of the root and then the *-e* is deleted by phonological processes.

Objection: what about the Hortative? the 3rd person subject affix in the hortative is *əʔ-*, not *ne-*, but it still deletes when the subject is singular and the object is 3rd person. Halle & Hale would predict that the form of the object suffix in that case should be some version of *əʔ-* + *-in*, but in fact, the suffix is still *-nin*.

14. Anderson's approach:
Disjunctivity among morphemes arises by 2 mechanisms:
a) If two rules are part of the same rule block, only the first (externally ordered) rule may apply.

b) A later rule may be excluded from applying by an earlier rule in a different block if its structural description is a subset of the description of the earlier rule. (We didn't talk about this, but it's just the Elsewhere Principle applying across rule blocks).

a) won't work. Recall: only one affix in any rule block may appear; affixes which compete with each other for insertion are in the same rule block.

→ We know that *ne-* and *-nin* must be in the same rule block, because they are in complementary distribution — they are competing.
→ We know that *-nin* and *-ɣʔən* are in the same rule block, because they are competing.
→ Therefore, *ne-* and *-ɣʔən* must be in the same rule block. BUT -- they co-occur! So they *can't* be in the same block.

b) won't work, because the structural description for inserting *ne-* is not a subset of the structural description for *-nin*. Here's how it would look if it was going to work:

i) [3sg:OB 3sg:SU]
X → X+*nin*
i) would bleed ii) because i) is more specific than ii)
ii) [3sg:SU]
X → *ne*+X

BUT, in fact, recall that the *ne-* prefix only shows up in the indicative (and subjunctive). In the hortative, the prefix *əʔ-* shows up (note discussion of Halle and Hale above). Its features are definitely *not* a subset of *-nin*'s (which is not specified for mood -- *-nin* shows up in all three moods). The features of *əʔ-* are [3sg:SU, HORT] However, it is still deleted in the presence of *-nin*, just like *ne-* is:

(18) Hortative agreement

Object / Subject	*1sg*	*1pl*	*2sg*	*2pl*	*3sg*	*3pl*
3sg		əʔ- -mək	əʔ- -ɣət	əʔ- -tək	**Ø- -nin**	**Ø- -ninet**
3pl	əʔ- -ɣəm	əʔ- -mək	əʔ- -ɣət	əʔ- -tək	**əʔ- -ɣʔen**	**əʔ- net**

So Anderson can't capture it by saying the Elsewhere Principle bleeds the application of the *ne-* and *ðʔ-* rules, and he can't capture it by rule blocks.

15. Other DM approaches: Fission, Fusion:

(Noyer's discontinuous bleeding): the subject features of Arabic imperfects are realized by a combination of prefix and suffix. Noyer proposes that the features of the subject node undergo Fission, are split in two, and then the usual kind of DM Vocabulary Item competition happens for those two nodes — each of which is a part of the subject node.

Bobaljik's response: since we're dealing with both subject and object agreement, there's no reason to suppose that we only have one node — if anything, we'd have to Fuse the two and then split them up again in every person except 3rd, or only Fuse them in 3rd

person. Basically, he says, it's unmotivated to posit one node when the default assumption (and the evidence from the other persons) is that the syntax provides two nodes which must be realized separately.

16. Final piece of evidence for saying that the object allomorphy and subject deletion should not be necessarily connected: In the related language Itelmen, you see object allomorphy conditioned by the subject, with no concomitant subject deletion.

3 Harley: On the causative construction*

(To appear in *Handbook of Japanese Linguistics*, OUP, ed. by Miyagawa and Saito)

→ Moral of this story A: What a syntactic morphological theory can do that a lexicalist morphological theory has trouble with.
→ Moral of this story B: Motivating a bipartite verb structure, and Late Insertion

3.1 Affixal causatives and architectures

The Empirical Base:

Three kinds of V-*sase* combination:

(1) *(A subset of) Lexical causatives* Miyagawa 1980, 1984
Taroo-ga zisyoku-o niow-ase-ta Jacobsen 1981, 1992
Taro-N resignation-A smell-*ase*-PST Matsumoto 2000
"Taro hinted at resigation." (Lit: 'Taro made resignation smell.')

Special properties:
- monoclausal by all tests (see below)
- can have idiomatic interpretations
- exhibit allomorphy with other lexical causative affixes
- strong speaker sense of 'listedness', non-productivity
- may feed (non-productive) nominalization

(2) *Productive causatives*
a. *Make-causatives* Kuroda 1965, Kuno 1973
Hanako-wa Yoshi-o ik-ase-ta
Hanako-T Yoshi-A go-*ase*-past
"Hanako made Yoshi go."

b. *Let-causatives*
Hanako-wa Yoshi-ni ik-ase-ta
Hanako-T Yoshi-D go-*ase*-past
"Hanako allowed Yoshi to go/Hanako had Yoshi go."

Special properties:
- Biclausal by tests involving scope, adverbial control, binding, disjunction
- Monoclausal by tests involving negative polarity
  - Make-causative monoclausal by tests involving case.
- Causee must be animate/Agentive
- Productive

* I wish to express my gratitude to the workshop organizers, Shigeru Miyagawa and Mamoru Saito, for inviting me to present at this workshop. Takaomi Kato, Hironobu Kasai and Kazutoshi Ohno helped me with some Japanese example sentences and discussion. Any and all shortcomings and mistakes are my fault.

In *make*-causatives, the Case on the Causee alternates between accusative and dative depending on transitivity of embedded verb. When it is dative *-ni*, it is Case *-ni*, not P *-ni* (Sadakane & Koizumi 1995). In *let*-causatives, it seems to be P *-ni*

(3) Properties of all *-sase-* causatives (many from Manning, Sag & Iida 1999)

a. V+*sase* = phonological word for stress, other word-size processes Kitagawa 1986
b. V+*sase* subject to phonological allomorphy depending on coda of V
(if it's a vowel, then *-sase-*, if it's a consonant, then *-ase*)
c. V+*sase* may feed (productive) nominalization with *-kata,* 'way of'
d. *-sase-* by itself may not behave as a lexical verb (stem):[1]
i. may not reduplicated by itself to express repetition
ii. may not bear focus intonation by itself
iii. may not be inflected for subject honorification by itself.
v. may not stand alone as an answer to a yes-no question

An interesting acquisition difference between lexical and syntactic *-sase-*: lexical *-sase-* occurs first—but not as early as zero-derived lexical causative uses of verbs show up (Murasugi 2003)

For a useful summary of most of these properties, see Kitagawa 1994, Manning, Sag and Iida 1999. For surveys of many previous analyses, see Cipollone 2001, Kuroda 2002. For useful discussion of the 'make/let' distinction, see Dubinsky 1994 and citations therein.

1.2 *Theoretical approaches*

This constellation of properties really make one face one's theoretical priorities. Some architectural issues posed just by the productive 'make' *-sase*s:

(4) a. Syntactically monoclausal in terms of case, tense, and negative polarity licensing.
b. Syntactically biclausal in terms of binding, scope, disjunction, control
c. Morphologically and phonologically a single word, in terms of affixation possibilities and prosody.

Resolving these issues usually involves radical replumbing of grammatical architectures

(5) The lexicalist's priorities:

a. Because all terminal nodes in the syntax must correspond to morphophonological words, then causatives must be monoclausal: one verb, one clause.
b. Multiclausal properties of causatives must arise from the (productive) operation affixing the causative morpheme in the lexicon, producing a complex syntactic and semantic word.
c. Conclusion: binding, scope, adjunction and adverbial interpretation and control are relations that depend on lexical operations, not syntactic structure.

[1] Kuroda 1981, 1990 (as cited in Kuroda 2002) presents some examples from negation and intervening particles to suggest that *-sase-* does have an independent existence as a verbal morpheme; Miyagawa 1989:115f, and Kitagawa 1994:184f., followed by Manning, Sag and Iida 1999:47, argues that in fact these are examples of the *-ase-* allomorph suffixed to light verb *s-*, 'do'. Kuroda (2002 n. 14) disagrees, ascribing Kitagawa's position to grammaticality judgment differences.

(Actual proposal of Manning, Sag and Iida 1999; the replumbing part is the inclusion of adjunction and quantifier scope as (separate) lexical operations.)

Biggest Problem: Disjunction (Kuroda 2002)[2]

(6) a. Hanako-ga [[Masao-ni uti-o soozisuru]-ka [heya-dai-o haraw]]-aseru koto ni sita
Hanako-N [[Masao-D house-A clean]-OR [room-rent-A pay]]-*sase* that to do
'Hanako decided to make Masao clean the house or pay room rent'.

sase scopes over OR; Masao has a choice.

b. Hanako-ga [[Masao-ni uti-o soozis-aseru]-ka [heya-dai-o haraw-aseru]] koto ni sita
H.-N M.-D house-A clean-*sase*-OR room-rent-A pay-*sase*
"Hanako decided to make Masao clean the house or she decided to make him pay room rent"
OR scopes over *sase*; Masao won't have a choice.

Puzzle: seems not to be possible with (true) coordination (thanks to Takaomi Kato for these examples and discussion):

(7) a. *Ken-wa [Naomi-ni [kesa hurui huku-o sute]
K.-Top [N.-D [this.morning old clothes-A throw:away]

[sakuban kuroozetto-o soozi]]-sase-ta.
[last:night closet-acc cleaning]]-*sase*-PST
"Ken made Naomi throw away her old clothes this morning and clean out the closet last night."

b. *Yamada kyoozyu-wa [betubetu-no gakusei-ni [toogoron-no ronbun-o yomi]
Yamada professor-Top [different-G student-D [syntax-G paper-A read]

[oninron-no ronbun-o kak]]-ase-ta.
[phonology-G paper-A write]]-*sase*-PST.
"Prof. Yamada made different students read a paper on sytax and write a paper on phonology."
(see Takano 2004 on relevance of *betubetu* for ensuring true coordination).

(Similar examples without the temporal modifiers or *betebetu* seem clearly to involve adjunction, as argued by Manning, Sag & Iida; they get a sequential, 'After Xing, Y', or 'X, then Y' reading. The same is true in Korean, which has an overt coordination particle. It's quite mysterious why coordination is not allowed under -*sase*- but disjunction is—especially since, as Takano 2004 shows, coordination in Japanese can apply to bare verb stems, below, e.g., Tense. See below for speculation.)

Also problematic: Capturing syntactic adjunct/argument asymmetries (Cipollone 2001)

(8) P&P's LF-as-syntax priorities

[2] Watanabe (pc) says that the same problem arises in the true 'light verb' constructions with *suru*.

a. If all scope and coindexation relations (and disjunction, of course) must be syntactically represented, then the causative morpheme must head (and be interpreted in) a separate syntactic projection than the verb stem to which it is affixed
b. Syntactically monoclausal properties of causatives must arise from (deficient) properties of the embedded clausal structure.
c. Morphological and phonological words are not in a one-to-one relationship with syntactic terminal nodes.

Biggest Problems: Where are words made, before or after syntax, or both? What is the constituent structure of the embedded phrase? Does affixation matter to the syntax?

(9) Many proposals within broadly P&P lines:

a. Predicate Raising (e.g. Kuno 1973): Biclausal D-structure collapses to monoclausal S-structure; Syntax feeds word-formation.
b. Parallel monoclausal and biclausal trees. Word-formation feeds syntax (e.g. Miyagawa 1984).
c. LF-excorporation and projection. Word-formation feeds syntax (Kitagawa 1986, 1994) (Proposal could be understood as a variant of Chomsky's 1993 lexicalist checking-theory.)
d. Incorporation (Baker 1988). Syntax manipulates morphemes, feeds word-formation.

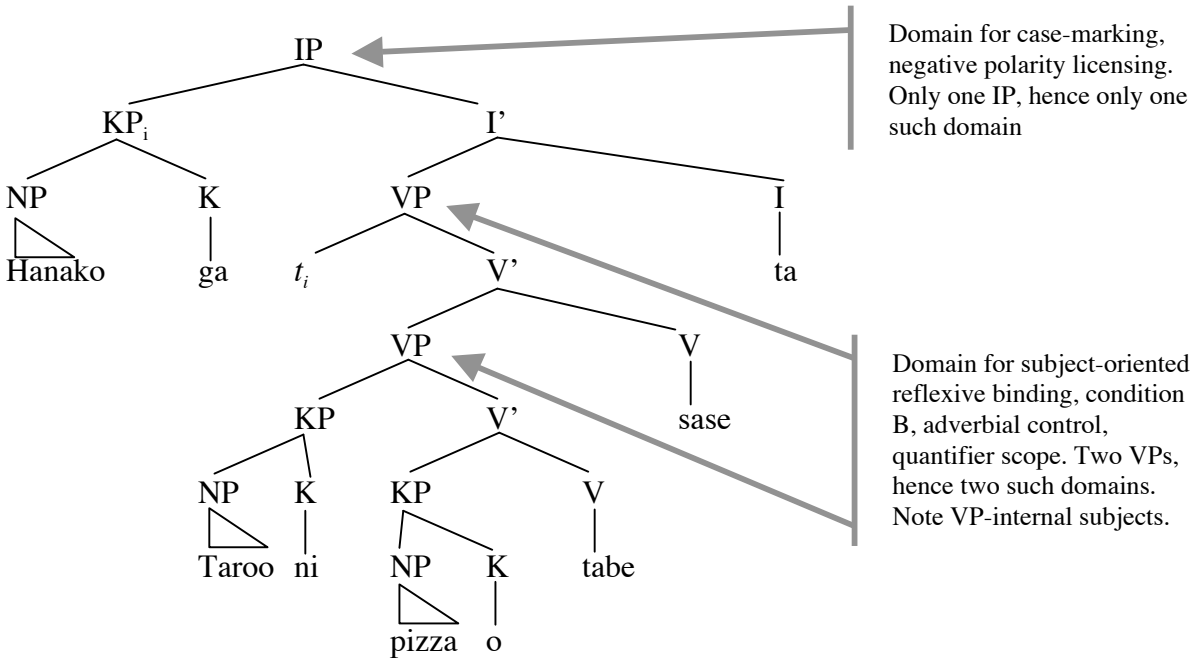
(10) Necessary ingredients to make an Incorporation account work:

a. The VP-internal subject hypothesis (so that an embedded subject argument can be introduced in VP, without Tense or whatever the NPI & nominative Case functional boundary is.)
b. A theory of abstract Case checking in which a clausal Case domain is bounded by a TP projection, to allow the transitivity of the embedded VP to affect the case assigned in the whole clause; similarly for NPI licensing (a 'Dependent Case' account, of the Marantz 1991 type; see, e.g. Miyagawa 1999).
c. A theory of scope that allows quantifiers to scope at the VP level as well as the CP level.
d. A rejection of the Lexicalist Hypothesis at least for productive derivational morphology; i.e. have to allow syntax to manipulate morphemes. (Note: have to allow syntax to derive *-kata* 'way of' nominals, too.)

In the Incorporation approach, the Numeration is assumed to contain actual morphemes, i.e. Vs identified with phonological material. Productive inflectional and derivational affixes can be considered to be input to the syntax, as well as regular words.

(11) Derivation of *Hanako-ga Taroo-ni pizza-o tabe-sase-ta* in such a theory: [3]

Numeration: {Hanako$_N$, Taroo$_N$, pizza$_N$, -ga$_K$, -ni$_K$, -o$_K$, tabe$_V$, -sase$_V$, -ta$_I$}



Nonproductive affixes, however, are not input to the syntax in this approach; they come pre-attached to their stems in a presyntactic morphological component. This explains a) their nonproductivity, since syntax is supposed to be the domain of productivity, and b) the monoclausal behavior of lexical causatives; one V in the numeration, one VP in the derivation.

End result: a type of hybrid account, where productive causatives are combined with their verbs in the syntax, but lexical causatives are treated in a separate, pre-syntactic part of the grammar.[4]

Next: What's wrong with this picture, and what the implications for linguistic theory are.

3.2 Lexical causatives

As in many languages, Japanese derives many semantically related inchoative/causative pairs of verbs with overt morphology attached to a common root. (Even English does this, for some pairs). These pairs have been extensively documented by Jacobsen 1992; the first two examples of each class of pairs he identifies are given below:

[3] (Note: since I have said that such an approach should treat all productive morphology (esp. inflectional morphology) as syntactically attached, I have adopted a 'KaseP' hypothesis for Japanese case particles in this tree. For discussion of how these case morphemes can be licensed against case-marking heads, see Miyagawa 1999.)

[4] This basic picture once established, many questions remain to be solved, concerning the *make*/*let* distinction, the role of unergativity, unaccusativity and agentivity, psych-predicate causatives, restructuring effects, and more. For some discussion of relevant questions, see, among many many others, Dubinsky 1994, Terada 1992…

(12)

Class/#[5]	√	Intr	Tr	Rough √ gloss
I: e/Ø	*hag*	*hag-e-ru*	*hag-ø-u*	'peel off'
30 pairs	*hirak*	*hirak-e-ru*	*hirak-ø-u*	'open'
II: Ø/e	*ak*	*ak-ø-u*	*ak-e-ru*	'open'
44 pairs	*hikkom*	*hikkom-ø-u*	*hikkom-e-ru*	'draw back'
III: **ar/e**	*ag*	*ag-ar-u*	*ag-e-ru*	'rise'
71 pairs	*aratam*	*aratam-ar-u*	*aratam-e-ru*	'improve'
IV: ar/Ø	*hasam*	*hasam-ar-u*	*hasam-u*	'catch between'
8 pairs	*husag*	*husag-ar-u*	*husag-u*	'obstruct (clog, jam?)'
V: r/s	*ama*	*ama-r-u*	*ama-s-u*	'remain'
27 pairs	*hita*	*hita-r-u*	*hita-s-u*	'soak'
VI: re/s	*arawa*	*arawa-re-ru*	*arawa-s-u*	'show (up)'
18 pairs	*hana*	*hana-re-ru*	*hana-s-u*	'separate from'
VII: ri/s	*ka*	*ka-ri-ru*	*ka-s-u*	'borrow/(lend)'
2 pairs	*ta*	*ta-ri-ru*	*ta-s-u*	'suffice/(supplement)'
VIII: ø/as	*hekom*	*hekom-ø-u*	*hekom-as-u*	'dent'
38 pairs	*her*	*her-ø-u*	*her-as-u*	'decrease'
IX: e/as	*bak*	*bak-e-ru*	*bak-as-u*	'turn into/bewitch'
45 pairs	*bar*	*bar-e-ru*	*bar-as-u*	'come/bring to light'
X: i/as	*ak*	*ak-i-ru*	*ak-as-u*	'tire'
8 pairs	*dek*	*dek-i-ru*	*dek-as-u*	'come/bring into existence'
XI: i/os	*horob*	*horob-i-ru*	*horob-os-u*	'(fall to) ruin'
6 pairs	*ok*	*ok-i-ru*	*ok-os-u*	'get up'
XII: Ø/se	*abi*	*abi-ru*	*abi-se-ru*	'pour over (self/other)'
6 pairs	*ki*	*ki-ru*	*kise-ru*	'put on (self/other)'
XIII: e/akas	*obi*	*obi-e-ru*	*obi-(y)akas-u*	'(take) fright(en)'
4 pairs	*hagur*	*hagur-e-ru*	*hagur-akas-u*	'stray/evade'
XIV: or/e	*kom*	*kom-or-u*	*kom-e-ru*	'be fully present/fill'
2 pairs	*nukum*	*nukum-or-u*	*nukum-e-ru*	'warm'
XV: are/e	*sut*	*sut-are-ru*	*sut-e-ru*	'fall into disuse/discard'
3 pairs	*wak*	*wak-are-ru*	*wak-e-ru*	'divide'
XVI: Misc	*nigiwa*	*nigiwa-ø-u*	*nigiwa-s-u*	'(make) prosper'
25 pairs	*nob*	*nob-i-ru*	*nob-e-ru*	'extend'

[5] The number of pairs does not include other pairs derived from a root already on the list even when these are not transparently semantically related; the number of listemes on each list, then, is possibly somewhat larger.

Syntactic and semantic properties of lexical causatives

The causative member of such pairs has one more argument than its intransitive counterpart, and bears a roughly causative reading with respect to it (sometimes one or the other member of the pair having undergone some semantic drift), but shows no obvious symptoms of a multiclausal syntactic structure, as noted above.

Compare, e.g., the available controllers for a *-te-* phrase in a syntactic vs. lexical causative (Dubinsky 1994):

(13) Basic intransitive verb and its syntactic causative:

a. Taroo-wa arui-te it-ta
Taro-T walk-*te* go-PST
"Taro, walking, went."

b. Taroo-wa arui-te Hanako-o ik-ase-ta
Taroo-T walk-*te* Hanako-A walk-*sase*-PST
"Taro made Hanako go, walking"
"Taro, walking, made Hanako go"

(14) Inchoative intransitive and its lexical causative:

a. Hanako-wa nure-te hi-e-ta
Hanako-T wet-*te* cool-*inch*-PST
"Hanako ('s body), getting wet, cooled.

b. Taroo-wa nure-te Hanako-o hi-(y)as-ita
Taro-T wet-*te* Hanako-A cool-*caus*-PST
"Taroo, getting wet, cooled Hanako."
Impossible: "Taroo cooled Hanako, (Hanako) getting wet."

As shown by Miyagawa (1980, 1984, 1989, 1994, 1998), Zenno (1985), lexical causatives share another property with underived transitive verbs: they may appear as part of an idiom. Sometimes their inchoative counterpart also participates (i.e. the idiom alternates), sometimes not. (Examples below are from Miyagawa 1989:126-127)

(15) Lexical causatives in idioms by themselves:

a. kama-o kake- (intr. *kak-ar* not in this idiom)
sickle-A splash on
'trick into confessing'

b. zibara-o kir- (intr. *kire* not in this idiom)
my.stomach-A cut
'pay out of one's own pocket'

c. tenoura-o kaes- (intr. *kaer* not in this idiom)
palm-A return
'do all at once'

(16) Lexical causatives in alternating idioms:

a.	te-ga	kuwawar-	te-o	kuwae-
	hand-N	join	hand-A	add
	'be altered'		'alter'	
b.	hone-ga	ore-	hone-o	or-
	bone-N	break$_{intr}$	bone-A	break$_{tr}$
	'require hard work'		'exert oneself'	
c.	mune-ga	itam-	mune-o	itame-
	heart-N	ache	heart-A	hurt
	'be worried'		'worry (oneself)'	

Oerhle and Nishio (1981) show that lexical causatives can participate in 'adversity' readings, like simple transitive verbs (examples taken from Miyagawa 1989:130).

(17) a. Simple transitive with 'adversity' reading:

Taroo-ga	ie-o	yai-ta.
Taro-N	house-A	burn-PST

'Taro burned his house.'
'Taro's house burned, and he was adversely affected (he didn't cause it.)'

b. Lexical causative with adversity reading:

Boku-wa	kodomo-o	gake kara	ot-os-ita
I-T	child-A	cliff from	drop-*caus*-PST

"I dropped the child from the cliff."
"The child dropped from the cliff, and I was adversely affected."

V+sase: *The same properties as lexical causatives? or not?*

Some V+*sase* pairs behave like the lexical causatives above.[6] They participate in idioms, sometimes with and sometimes without their intransitive counterpart:

(18) Lexical V+sase causatives in idioms:

a.	tikara-o	aw-ase-		
	power	together-*sase*-		
	'pull together'			
b.	mimi-o	sum-ase-		
	ear-A	clear-*sase*		
	'listen carefully'			
c.	hana-ga	saku-	hana-o	sak-ase-
	flower-N	bloom	flower-A	bloom-*sase*
	'be done heatedly'		'engage in heatedly'	

[6] See also Matsumoto 2001.

d.	hara-ga	her-	hara-o	her-ase-
	stomach-N	lesson	stomach-A	lesson-*sase*
	'get hungry'		'fast/wait for a meal'	

These V+*sase* forms also allow adversity causative interpretations:

(19) V+*sase* forms in adversity causatives (examples from Miyagawa 1989:129)

a. Taroo-ga yasai-o kusar-ase-ta
Taroo-N vegetable-A rot-*sase*-PST
"Taroo spoiled the vegetables."
"The vegetables rotted, and Taro was adversely affected."

b. Taroo-ga kaisya-o toosans-ase-ta
Taro-N company-A bankrupt-*sase*-PST
"Taro bankrupted the company."
"The company went bankrupt, and Taro was adversely affected."

But many (probably most) V+*sase* combinations do *not* exhibit these properties. For instance, there is no adversity causative interpretation available for the V+*sase* forms below (Miyagawa 1989:130):

(20) a. Boku-wa kodomo-o gake kara oti-sase-ta
I-T child-A cliff from drop-*sase*-PST
'I caused the child to drop from the cliff.'
Impossible: "The child dropped from the cliff, and I was adversely affected."

b. Kotosi-wa dekinai gakusei-o hue-sase-ta
This.year-T poor students-o increase-*sase*-PST
"This year, we caused (the number of) poor students to increase."
Impossible: "This year, the number of poor students increased, and we were adversely affected."

c. Taroo-wa niku-o koge-sase-ta
Taro-T meat-A scorch-*sase*-PST
"Taro caused the meat to scorch" Pylkkanen 2002
Impossible: "The meat scorched, and Taro was adversely affected."

Similarly, given an intransitive verb that participates in an idiom, like the examples in (18)c-d above, a V+*sase* combination formed on the intransitive is not guaranteed to also participate in the idiom (Miyagawa 1989:126):

(21) a.	kiai-ga	hair-	*kiai-o	hair-ase-
	spirit-N	enter	spirit-A	enter-*sase*
	'be full of spirit'		*'inspire/put spirit into'	
b.	hakusya-ga	kakar-	*hakusya-o	kakar-ase-
	spur-N	splash.on	spur-A	splash.on.*sase*
	'spur on$_{intr}$'		'spur on$_{tr}$'	

The blocking effect and paradigmatic structure

Miyagawa (1980 et seq) and Zenno (1985) show that there is a simple way to predict when a V+*sase* combination can behave like other lexical causatives and when it may only behave as an analytic causative, with no noncompositional interpretation and no adversity causative: *Only intransitive roots with no other transitive form can behave lexically with -sase.*

That is, lexical interpretations of *-sase* are possible only if the root to which it is attached does not have a transitive form derived in another way.

This is a classic example of morphological *blocking*, seen in both derivational and inflectional morphology cross-linguistically. A simple case is the English past tense. Some verbs do not have a past tense formed with *-ed*: **runned, *writed, *feeled, *hitted*. The reason is that they have an independently formed, irregular past tense, which blocks the regular form: *ran, wrote, felt, hit.*

Similarly, in derivational morphology, the same phenomenon is argued to occur. Many English adjectives have a negative form in *un-*, but some do not: **unpossible, *unconsiderate, *uncoherent.* These are blocked by the independent irregular negative forms, *impossible, inconsiderate, incoherent.*

The grammatical mechanism that is responsible for blocking effects, in many theories of morphology (for instance, Paradigm-Function Morphology, most recently discussed in Stump 2001), is that *n*-dimensional grammatical space: a paradigm. The idea would be that every English verbal form is understood to be attached to a paradigm space, defined by the inflectional features of English verbs: past, present participle, 1, 2, 3, sg, pl. Some verbs come with their paradigm space partially filled in— for instance, the past tense space for *write*, the form *wrote* is already entered—but empty slots, such as for the progressive participle, are filled in by a default affix for that slot: *write+ing*.

(22) Paradigm in the lexicon for *write*

V: WRITE	*write*
infinitive	
present ppl	
past ppl	*written*

Before lexical items to the syntax, empty paradigm spaces are filled in by default morphology (underlined in the tables below).

(23) Paradigm in the lexicon for *write*

V: WRITE	*write*
infinitive	*write*
present ppl	*writing*
past ppl	*written*

To apply such an analysis to derivational morphology, one has to have the notion of a multidimensional grammatical space for certain derivational features, such as *negative*, for the *impossible*/**unpossible* pairs. Words with special negative forms will have already filled in their relevant paradigm slots, blocking the insertion of the default form *un-*.

(24)

A: POSSIBLE	*possible*
negative	*impossible*
nominal	*possibility*

A: LIKELY	*likely*
negative	*unlikely*
nominal	*likelihood*

A: HAPPY	*happy*
negative	*unhappy*
nominal	*happiness*

Miyagawa (1980, 1984, 1989) argued that the blocking effect in Japanese causatives showed that a paradigmatic level of structure was necessary; without it, the blocking effect couldn't be captured. In its essential position and function in the grammar, Miyagawa's Paradigmatic Structure is the same level of structure that paradigm-function morphologists work with, (although it seems Miyagawa came up with it independently).

He defined a paradigm space made up of intransitive, transitive, and ditransitive verbs. For many verb stems, an irregular form already occupied the 'transitive' or 'ditransitive' slot in the paradigm; only if one did not could a default *-sase-* form fill up the gap.

(25)

V: AG	*agar* 'rise'
Intr	*agar-*
Tr	*age-*
Ditr	

(26)

V: AG	*sak-* 'bloom'
Intr	*sak-*
Tr	sak-ase
Ditr	

This is all very well, except the extra level of pre-syntactic lexical structure seemed perhaps excessive.

Not only that, Miyagawa saw it *can not be* a coincidence that these V-*sase* combinations are morphophonologically indistinguishable from syntactic causatives. That is, surely, the reason that syntactic causatives are spelled out as *-sase-* is just because *-sase-* is the elsewhere, default form for a causative meaning. If lexical causatives had nothing to do with syntactic causatives, there would be no reason for the same morpheme to be involved in spelling out both.

Consequently, he was led to the conclusion that syntactic causatives had to be created in the lexicon as well. But then all the problems with the lexicalist analyses of syntactic causatives came up all over again, leading to his proposal that causatives are associated with parallel monoclausal and biclausal structures. The theory became ever more complex.

(27) Possible theoretical choices:

A: Treat the lexical and syntactic causatives completely separately. Relegate the V+*sase* lexical causatives to the lexicon with the rest of them. Ignore the morphological identity between the default lexical causative morpheme and the syntactic causative morpheme. That is: Jacobsen just missed class XVI: Ø/-*sase*.

B: Unify the lexical and syntactic causatives by treating them both in the lexicon. Something other than 'in the lexicon' has to distinguish the syntactic and lexical causatives. Parallel structures *may* do it, but it's not clear (how does one allow the projection of a parallel structure for most ditransitive V+*sase* combinations but not for a lexical-causative transitive one, e.g.?)

C: Unify the lexical and syntactic causatives by treating them both in the syntax. Needed: a theory of post-syntactic morphology. Again something other than 'in the syntax' has to distinguish the two types.

Enter Distributed Morphology, Hale&Keyser v°, and Minimalism.

3.3 Late Insertion, the Elsewhere condition, vPs and phases

(Most of the following is a mildly revised version of Miyagawa's 1994, 1998 analysis, which appeared in my thesis in 1995.)

Distributed Morphology and Late Insertion

In Distributed Morphology, the syntax manipulates abstract feature bundles, selected by the grammar of the language from an inventory provided by UG, on the basis of positive influence.

These feature bundles are the terminal nodes of a syntactic derivation.

After the syntax has merged, copied, remerged, probed, Agreed, etc., and Spell-Out is reached, the bundles are sent off to PF/LF for interpretation.

An early step on the PF-side is Lexical Insertion. Vocabulary Items (VIs), specified for certain features, race to realize the terminal nodes that the syntactic derivation has made available.

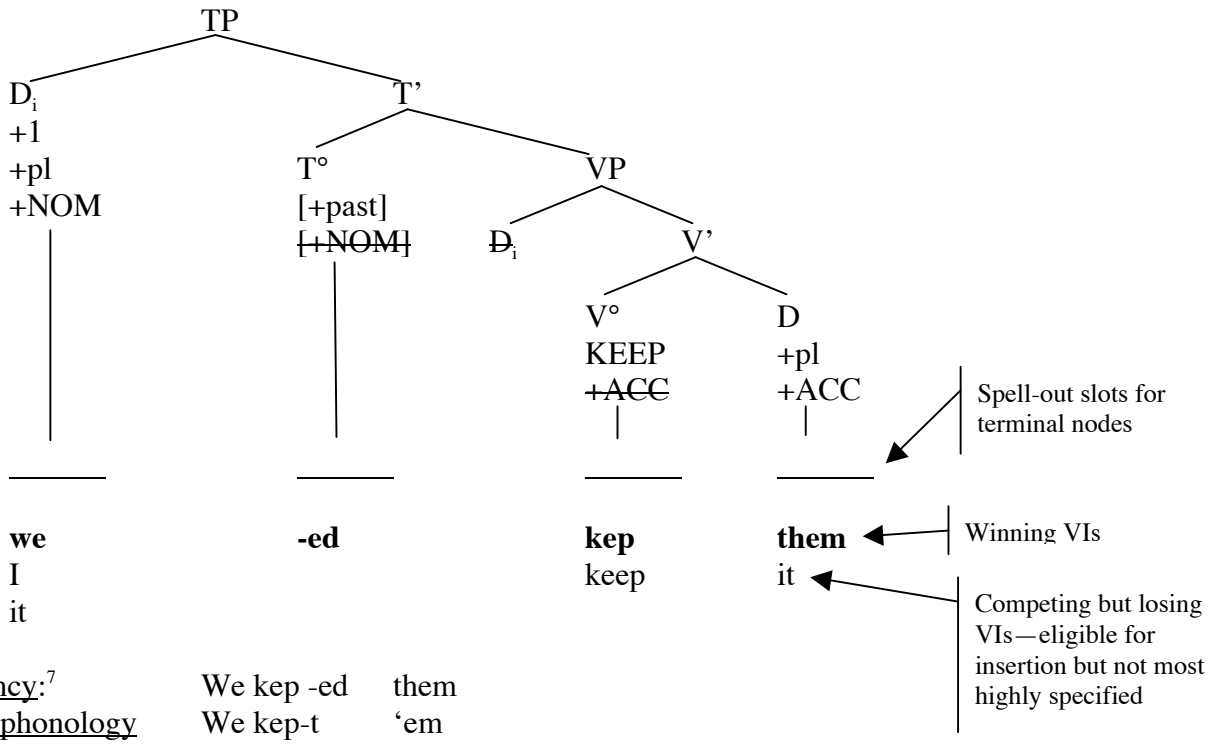
The one with the most compatible features, and no incompatible ones, for a given terminal node, realizes that node.

For example, imagine a Numeration something like the following (imagine theta-features on the appropriate items if you like):

(28) { $[_{D}$+1,+pl, +NOM], $[_{T}$+past, +NOM], $[_{D}$+pl, +ACC], $[_{V}$KEEP, +ACC] }

After the (simplified) syntax is done with it, the following tree is handed off to Spell-Out

(29)

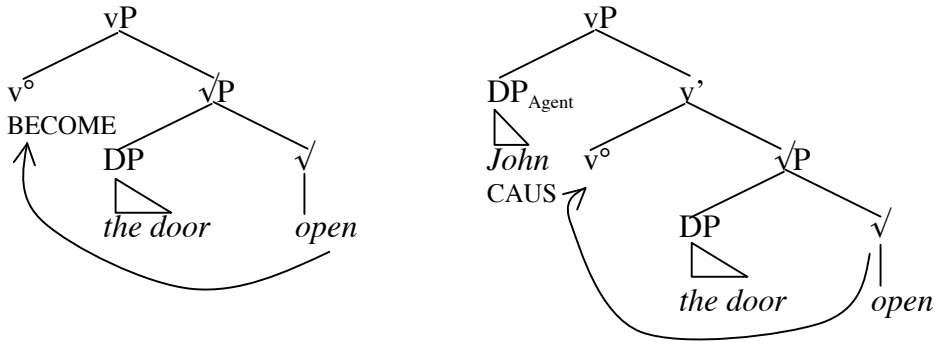


+ Adjacency:[7]	We kep -ed	them
+ morphophonology	We kep-t	'em

Benefits: Mirror principle effects, comprehensible relationship between syntax and morphology, **single generative engine** (no generative lexicon: no paradigmatic structure, no word-formation rules, no rules of referral…)

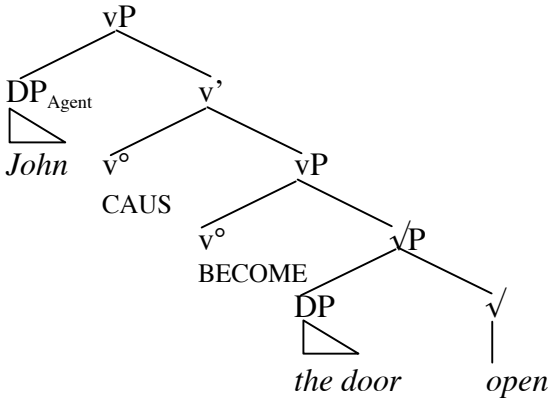
(Modified) Hale and Keyser (1993, 2002)-type vPs for causative/inchoative alternations

(30) a. Unaccusative verbs b. Causative verbs.



[7] Though cf. Takano 2004!

c. Another possibility for causative verbs: Inchoative contained within them
(Miyagawa 1994, 1998)



(I'll argue against this extra layer of structure in causatives)

(31) Hypotheses:

a. External arguments are always introduced by separate v° head
(H&K 1993, Kratzer 1996)
b. Different varieties of v°: minimum unaccusative v° and agentive/causative v°.
c. In languages which show causativizing/inchoativizing morphology, like Japanese, that morphology is a realization of a v° head.

→ In effect, the syntax defines the paradigm space. (Later we'll see that the syntax can also be thought of as establishing the template, in so-called 'templatic morphology' languages)

Late insertion and lexical causatives

(32) Morphemes competing to realize v_{CAUS} in Japanese

-Ø-	↔	CAUS / [$\sqrt{}_{\mathbf{I+IV}}$ ___$_v$]	(38 Jacobsen roots on the list for -Ø-)
-e-	↔	CAUS / [$\sqrt{}_{\mathbf{II+III+XIV+XV}}$ ___$_v$]	(120 roots on list)
-s-	↔	CAUS / [$\sqrt{}_{\mathbf{V+VI+VII}}$ ___$_v$]	(47 roots on list)
-as-	↔	CAUS / [$\sqrt{}_{\mathbf{VII+IX+X}}$ ___$_v$]	(91 roots on list)
-os-	↔	CAUS / [$\sqrt{}_{\mathbf{XI}}$ ___$_v$]	(6 roots on list)
-se-	↔	CAUS / [$\sqrt{}_{\mathbf{XII}}$ ___$_v$]	(6 roots on list)
-akas-	↔	CAUS / [$\sqrt{}_{\mathbf{XIII}}$ ___$_v$]	(4 roots on list)
-sase-	↔	CAUS / Elsewhere	(no roots on list) **Blocking effect!**

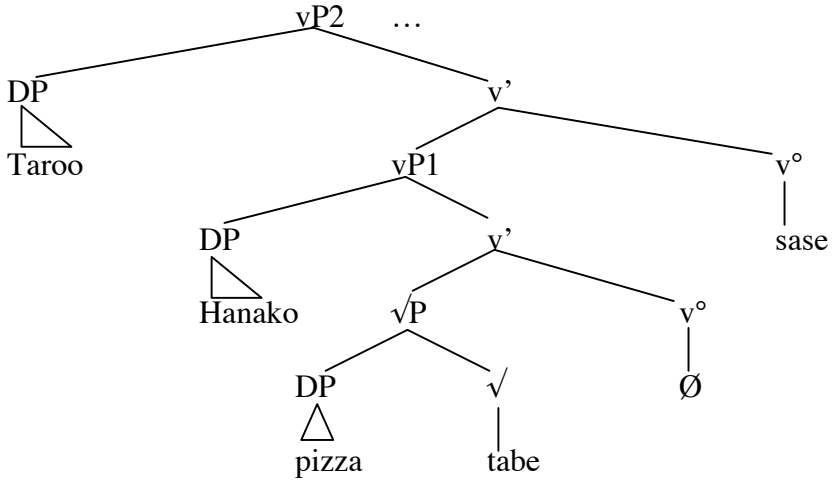
(33) Morphemes competing to realize v_{BECOME} in Japanese:

-e-	↔	BECOME / [$\sqrt{}_{\mathbf{I+IX+XII}}$ ___$_v$]	(79 Jacobsen roots on the list)
-ar-	↔	BECOME / [$\sqrt{}_{\mathbf{III+IV}}$ ___$_v$]	(79 roots on list)
-r-	↔	BECOME / [$\sqrt{}_{\mathbf{V}}$ ___$_v$]	(27 roots on list)
-re-	↔	BECOME / [$\sqrt{}_{\mathbf{VI}}$ ___$_v$]	(18 roots on list)
-ri-	↔	BECOME / [$\sqrt{}_{\mathbf{VII}}$ ___$_v$]	(2 roots on list)
-i-	↔	BECOME / [$\sqrt{}_{\mathbf{X+XI}}$ ___$_v$]	(14 roots on list)
-or-	↔	BECOME / [$\sqrt{}_{\mathbf{XIV}}$ ___$_v$]	(2 roots on list)
-are-	↔	BECOME / [$\sqrt{}_{\mathbf{XV}}$ ___$_v$]	(3 roots on list) Elsewhere (similar to *-sase*?)
-Ø-	↔	BECOME / [$\sqrt{}_{\mathbf{II+VII+XII}}$ ___$_v$]	(88 roots on list) Elsewhere?

Implications for syntactic causatives

If *-sase-* is simply an Elsewhere form of the Agent-introducing v_{CAUS}, and if all syntactic causatives are realized with *-sase-*, then syntactic causatives are the Agent-introducing v_{CAUS}, added onto a phrase bigger than a root—added on, in fact, to another vP shell:

(34)



(Taroo-ga Hanako-ni pizza-o tabe-sase-ta)

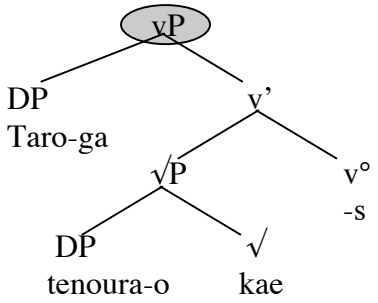
With a syntactic causative, head-to-head movement of the root up through its own v° and into the matrix *-sase-* v° will create a complex structure in which the matrix CAUS v° will not meet the structural description for any special root-conditioned allomorphs of CAUS: The matrix CAUS will be insulated from the root by one layer of bracketing, the embedded v°. (If there's no HM, but it's just adjacency in Japanese, the same remarks obtain: a 'syntactic' CAUS v° will never be adjacent to a root.)

(35) (matrix v° after head-to-head movement): $[\ [\ \sqrt{}_{TABE}\ \_\_\_\__{v}\ ]\ \_\_\_\__{v}\ ]$

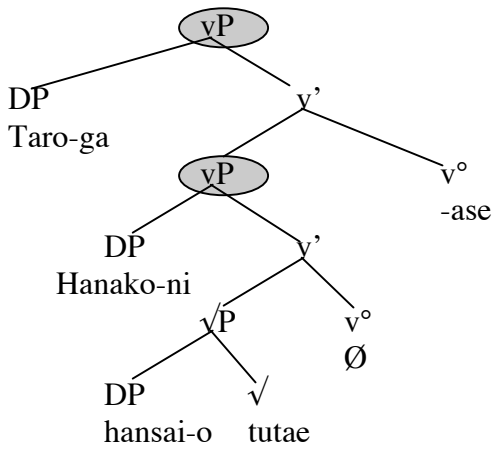
Definition of 'lexical' causative: a CAUS v° that is adjacent to a root.
Definition of a 'syntactic' causative: a CAUS v° that is not adjacent to a root (embeds a vP).

Compare the lexical and syntactic causative structures below:

(36) a.



b.



a. Taro-ga tenoura-o kae-s…
Taro-N palm-A return-CAUS
"Taro did it all at once" (?)
(=(15)c above)

b. Taroo-wa Hanako-ni hanasi-o tutae-sase-ta
Taro-T Hanako-D story-A convey-CAUS-PST
"Taro made Hanako convey a story"

In the lexical causative, there's 1 vP, 1 phase, one domain for Q-scope, adverbial control, binding, and the rest.
In the syntactic causative, there's 2 vPs, hence 2 domains for scope, binding, adverbial control…
Note that even in the syntactic causative there will still only be one TP, so one case domain, one NPI domain

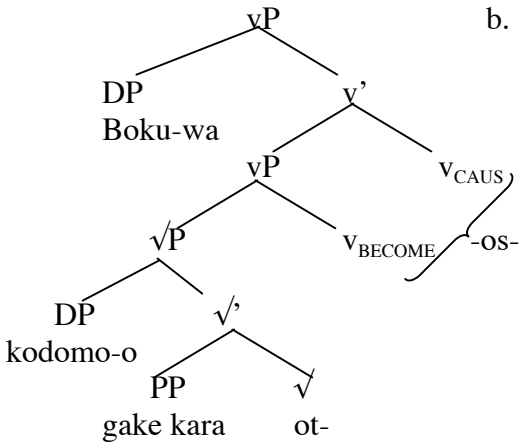
*Why not v_{BECOME} layer in lexical causatives ((30)*c above)*?*

Because it would make it impossible to distinguish between lexical causatives and syntactic causatives of inchoatives. Compare the structures, under the inchoative-inside-lexical-causatives hypothesis, for the following two sentences, from Miyagawa 1989:130, ex. 43a/b:

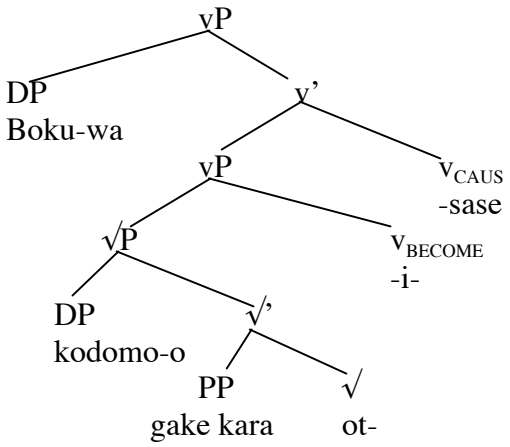
(37) a. Boku-wa kodomo-o gake kara ot-os-ita
I-T child-A cliff-from drop-CAUS-PST
"I dropped the child from the cliff."
"The child dropped from the cliff, and I was adversely affected." **Lexical**

b. Boku-wa kodomo-o gake-kara ot-i-sase-ta
I-T child-A cliff from drop-BECOME-CAUS-PST
"I caused the child to drop from the cliff."
#"The child dropped from the cliff, and I was adversely affected" **Syntactic**

(38) a.



b.



If the lexical causative *ot-os* includes a v_{BECOME} in its structure, then the only difference between the lexical causative and the syntactic causative is whether or not Fusion (a post-syntactic operation) has applied to the v_{BECOME} and v_{CAUS} roots to ensure that they are spelled out by the single *-os-* morpheme. The lexical/syntactic distinction should be more categorical than a mere morphological diacritic, since it has such strong consequences for meaning.

Better if the lexical causative has the structure without the intervening vP_{BECOME}.

Observations:
(Agentive) vP domain for special meaning (Kratzer 1996, Marantz 1997) **LF**
Immediate context of √ is the domain for root-conditioned allomorphy **PF**
(see also Arad 2002 for similar claims in Hebrew)

Even unaccusative v_{BECOME} looks like a phase edge…

(Problem: *-gar-* morpheme in lexical causatives like *iya-gar-ase*, 'bother-BECOME??-CAUS'
(Problem: lexical causative v° morphemes inside idiomatic nominalizations? see Volpe 2005)
(Problem: why does *-sase-* always alternate with Ø? in principle, a root could be on a special list for an unaccusative morpheme like *-r-* or *-e-*, but not for a causative morpheme, and hence alternate with *-sase-*; see Miyagawa 1998 for a proposal.)
(Problem: How does passive in Japanese work on this account? That is, how does it affect the external argument selection possibilities of the verb it embeds (which may include a causative v° morpheme)?)

The beginning of the High/Low Attachment Analysis

This was one of the first high/low attachment analyses. Attachment of a morpheme to a higher functional projection results in regular morphology and compositional meaning, while attachment of the same morpheme to a lower projection (often the √), results in some allomorphy and potential meaning drift.

Other early examples of such an analysis is the approach to English *of*-ing and *acc*-ing gerunds presented in Kratzer 1996, and the approach to Chichewa statives and passives sketched in Marantz 1997.

Since, such approaches have been extremely fruitful in looking at all kinds of morphology on the derivational/inflectional, unproductive/productive cusp, in all kinds of languages:

(39) *High/low analyses from various languages*
Travis 2000 on Malagasy lexical and syntactic causatives.
Embick 2004 on stative, resultative, and passive participles in English
Fortin 2004 on Minnangkabu causatives
Jackson 2005 on statives and resultatives in Pima
Alexiadou and Anagnostopoulou 2005 on adjectival participles in Greek
Svenonius 2005 on causatives in several languages

Conclusions:

Japanese causatives—even omitting the lexical ones—either force one to do more syntax in the lexicon (Manning, Sag & Iida), or more morphology in the syntax (Baker).
A careful examination of lexical causatives forces one to figure out a way to unify traditional idiosyncratic, irregular word-formation with regular, compositional syntax, and yet maintain a principled distinction between the two.
A post-syntactic morphology—the late insertion approach—with recursive vPs, allows a simple, unified treatment of all three types of lexical causatives, with a principled understanding of the nature of the distinction between lexical and syntactic causatives.
Additional evidence for the phasal status of vP, and successive-cyclic QR through vP.

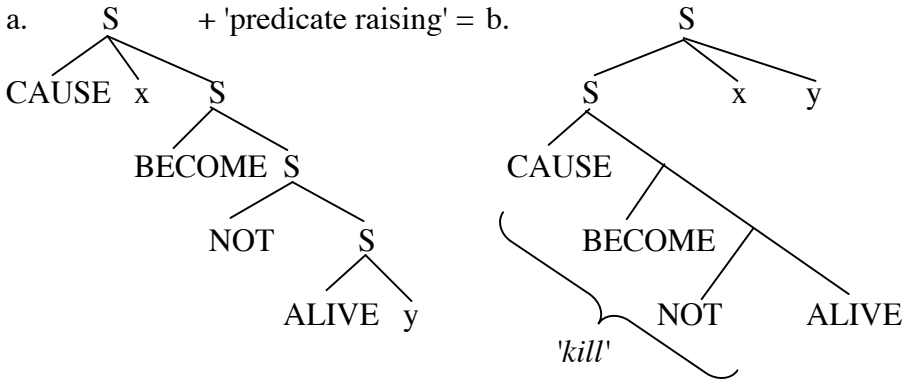
4 Travis: Event Structure in Syntax

→ Moral of this story: A case very much like the Japanese causative, with a few additional twists: a non-volitional v°, an amazing phenomenon demonstrating relevance of syntax for both lexical and syntactic causative morphology, the relationship of semantics to the articulated vP structure

4.1 Background: Semantics in and out of syntax

Generative semantics: Semantically (not morphologically) motivated decomposition of monomorphemic verbs into semantic primitives

(19) a. + 'predicate raising' = b.



→ Interpretivists: No syntactic evidence for these layers of structure; ergo, keep it out of syntax

→ Semanticists: Can't hold 'em back. Bubble comes up in the semantic component

(20) Dowty, within Montague Grammar proposes verb semantics like this:
[[DO (α_1 [π_n (α_1 … α_n)]]) CAUSE [BECOME [ρ_m (β_1 ... β_m)]]]

(21) Parsons: Introduces predicates for sub-events into the verbal semantics, Neo-Davidsonianally
x closed the door
(e) [Cul(e) & Agent (e,x) & e'[Cul(e') & Theme (e', door) & CAUSE (e, e') & s [Being-closed (s) & Theme(s, door) & Hold(s) & BECOME (e', s)]]]

(22) Pustejovsky: Sorts out 'event tier' semantics from other semantics

Sequence of events: Very rich semantic representation (in syntax) to rich semantic representation in lexicon (Dowty) to event-structure representation in lexicon (Parsons) to semantic representations that are nothing but event-structure representations (Pustejovsky)

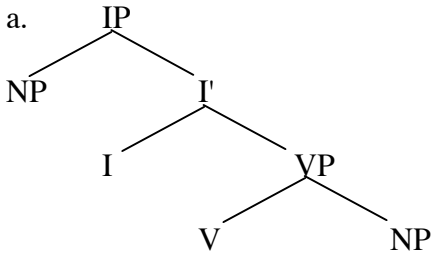
"By allowing some of the richness of meaning to stay within the domain of semantics and extracting that which is particular to event structure, we might return to a version of Generative Semantics that allows syntax to encode bits of meaning without running into the problem of trying to encode all of meaning in syntax."

→ Fodorian conceptual atomism still possible at some level.

4.2 Syntax getting more isomorphic to event semantic representations

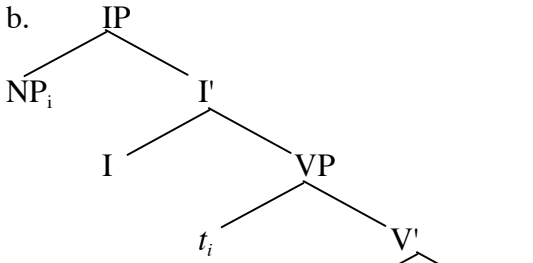
Trend in syntactic representation of verbs went in other direction: from quite impoverished representations to syntactically-motivated richer representations, to semantically and morphologically motivated richer representations yet.

(23) a.



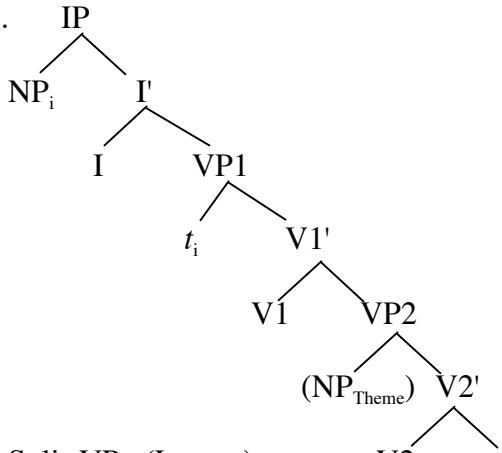
Invention of Infl

b.



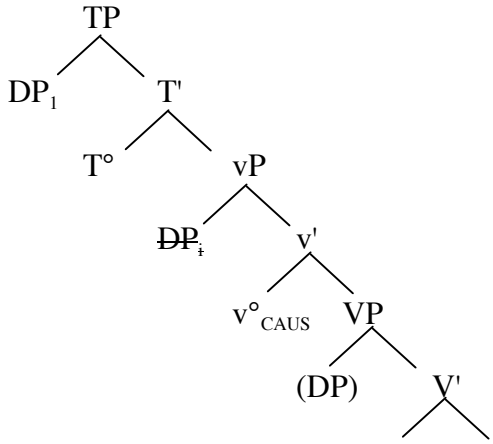
VP-internal subjects
(Koopman & Sportiche)

c.



Split-VPs (Larson)
(DP)

d.



vP=Agent(e,x)

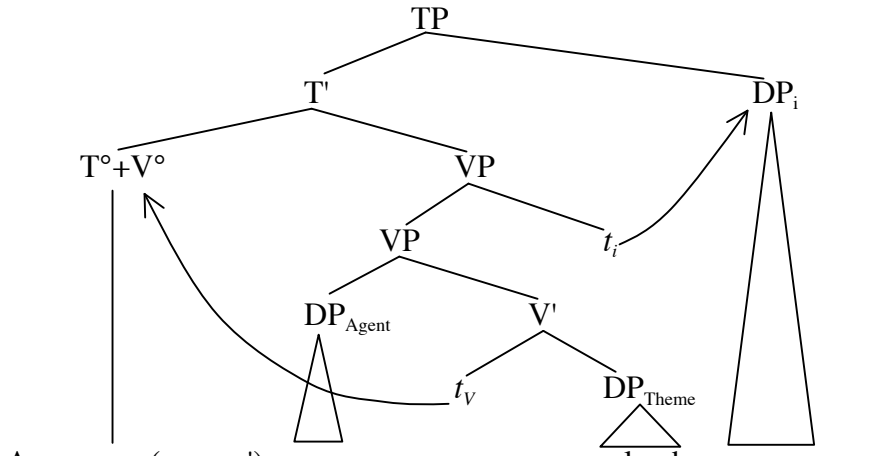
(Hale & Keyser)

→ The Malagasy argument for VP-internal subjects (just to get you thinking in Malagasy structures—it will matter later) looks like this:

(24) a) Malagasy word order is VOS (or VOTop, depending on who you are).
b) Any argument or adjunct may sit in S/Top position—a rightward specifier of TP—triggering agreement with the verb which indicates its role in the sentence.
c) When not in Top position, the Agent argument must occur immediately after the verb, before the Theme. Analysis: Agent remains in spec-vP (formerly Spec-VP, back in the days of (23)b.

Structure something like this:

(25)



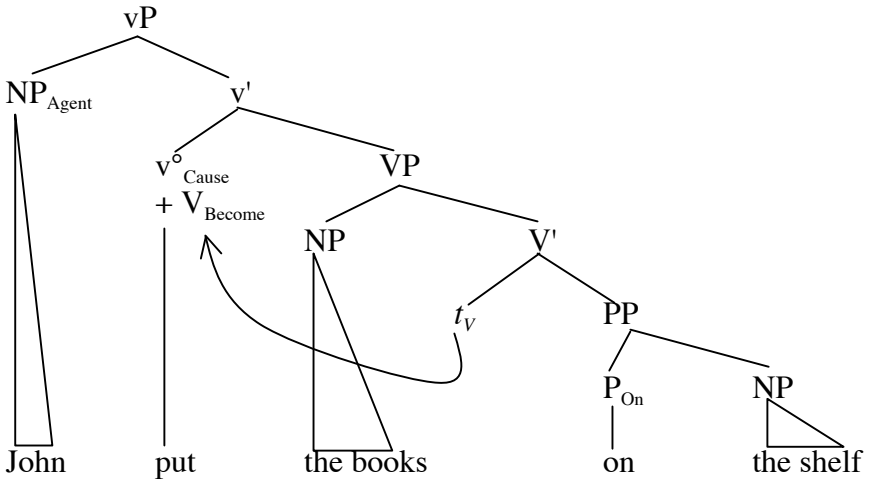
An-sasa-na(anasan') ny zazavavy ny lamba ny savony.
Pres.CT.wash(with) the.GEN girl the clothes the soap
"The soap, the girl washed the clothes with."
Lit, "The soap was washed (with) the clothes by the girl"

In this structure, the instrumental adjunct 'the soap' has moved from its VP-adjoined position to spec-TP, leaving the arguments, particularly the agent, inside the VP where the agent receives a genitive case. ('CT' stands for 'Circumstantial Topic', the agreement for any topic/subject other than the agent (which gets an AT agreement) or the theme (TT agreement). In the split-vP approach to phrase structure, of course, the agent would be represented in spec-vP

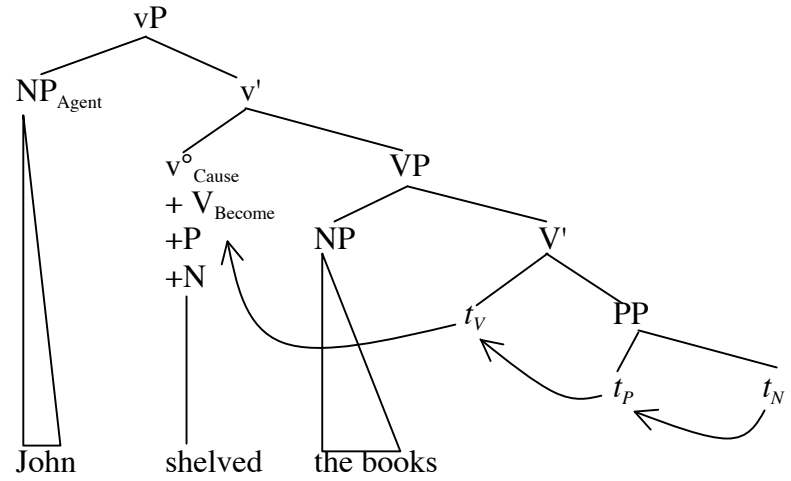
→ When semantic content is added to the verbs of the split-vP structure, as H&K propose, then the reason that the highest argument in the vP is always the Agent has to do with the fact that the highest verbal shell has the meaning CAUSE, and will bestow that interpretation on any NP it composes with.

H&K's structure for English *put the books on the shelf* (26) and *shelve* (27) (I've adapted Travis's VP1 to vP):

(26)



(27)



Travis's goals:

→ show both Malagasy and Tagalog have a morpheme that expresses the lexical causative represented by the v° in the split-vP structure
→ show that although these causatives may stack, only the closest one to the verb is an l-causative; after that they're syntactic causatives
→ show that they are the same morpheme, and show in particular that a syntax-sensitive process that applies to the morpheme in its syntactic version also applies to it in its lexical version, arguing that the lexical version is indeed introduced in syntax
→ Argue for an extra position between the syntactic and lexical causatives, demarcating the boundary between the two, and identifying this boundary with the notion of 'event'
→ argue for a Asp projection that introduces telicity and nonvolitional Cause arguments

4.3 Malagasy and Tagalog lexical and syntactic affixal causatives

Lexical causatives
→ highly productive causative/inchoative alternations marked with overt morpheme in both languages
→ Note: Tagalog Actor Topic *-(u)m* is an infix with the inchoative but a prefix with the causative morpheme
→ Note: Malagasy, like Japanese, has an overt inchoative affix in the intransitive cases, which alternates (does not embed below!) the causative morpheme

Tagalog		**Malagasy**	
Inchoative	*Causative*	*Inchoative*	*Causative*
t-*um*-umba -AT-fall.down	*m*-pag-tumba AT-caus-fall.down	m-i-hisatra AT-inch-move.slow	m-an-hisatra AT-caus-move.slow
s-*um*-abog -AT-explode	*m*-pag-sabog AT-caus-scatter	m-i-lahatra AT-inch-be.orderly	m-an-lahatra AT-cause-arrange
l-*um*-uwas -AT-go.to.town	*m*-pag-luwas AT-caus-take.to.town	m-i-lona AT-inch-soak	m-an-lona AT-caus-soak
s-*um*-abit -AT-be.suspended	*m*-pag-sabit AT-caus-hang	m-i-sitrika AT-inch-hide	m-an-sitrika AT-caus-hide
*	*m*-pag-halo' AT-caus-mix	*	m-an-vono AT-caus-die

Syntactic causatives

→ The very same causative morpheme may be iterated to create a syntactic causative
→ Unlike in Japanese, a morpheme intervenes between the lexical causative prefix and the syntactic causative prefix, which Travis analyzes as an Event head.
→ Like in Japanese, you can embed an inchoative verb under a syntactic causative

(28) Malagasy:

			Syntactic causative
a.	Lexical Inchoative	*m-i-sitrika* AT-inch-hide "X hide"	*m-am-p(i)-sitrika* AT-caus-E-inch-hide "Z make X hide"
b.	Lexical Causative	*m-an-(s)itrika* AT-caus-hide "X hide Y"	*m-am-p-an-(s)itrika* AT-caus-E-caus-hide "Z make X hide Y"

NB: Causative morphology is the same *-an-* for both; nasal assimilation adjusts it. Similar things happen to the initial *-s-* of the root in the lexical causative

(29) Tagalog: a type of haplology

a.	Lexical Inchoative	*s-um-ama* -AT-go.with "X go with Z"	*m-(p)ag-pa-sama* AT-caus-E-go.with "W make X go with Z"
b.	Lexical Causative	*m-(p)ag-sama* AT-caus-go.with "Y bring along X"	*m-(p)ag-pa-sama* AT-caus-E-go.with "W make Y bring along X" **m-(p)ag-pa-pag-sama* AT-caus-E-caus-go.with

NB: again, the morpheme is *-pag-* in both cases; the initial *-p-* on the first fails to show up after the AT *m-*, though.

→ Where did the second (lexical) causative morpheme go, in Tagalog? (It's SO cool, where it went.)
→ Cross-linguistic variation mystery for syntacticocentric morphology: Iteration of

identical affixal causatives is also bad in Japanese and Turkish. In Japanese, if you put a syntactic *-sase-* on outside a lexical *-sase-* , you get the appropriate meaning but lose one of the *-sase-*s to some kind of haplology process. You can't iterate multiple syntactic *-sase-*s at all. Case problems? Nothing wrong with *John made Bill make Sue call him*—why not in Japanese?

→ The Tagalog thing is not just haplology, though—stay tuned

Back to the syntactic/lexical causative distinction:
Syntactic causatives occur outside lexical causatives;
Lexical causatives can receive idiomatic readings with particular roots
Lexical causatives undergo idiosyncratic phonological processes
Lexical causatives are not productive, occurring with a fixed set of roots and not others.

(All just like Japanese.)

"Ideally, the causative morpheme would always appear on verb which have an Agent in their argument structure since this would be the morpheme in V1 which would assign this theta role"

→ In DM, it's not the morpheme, but the abstract features of v° that do the job; we can hypothesize that v° is still there even when realized by a zero morph (just as it is in *Two sheep are/*is…*)

4.4 Tagalog pag-*deletion*

→ Recall that WMP lgs like Tagalog and Malagasy allow Agents, Themes and Obliques ('Circumstantial Topics') to sit in subject position.
→ Recall that the predicted syntactic causative of a lexical causative in Tagalog has two *-pag-* causative morphemes, but only the first shows up:

(30) a. *m-(p)ag-pa-pag-sama
AT-caus-E-caus-go.with

b. m-pag-pa-??-sama
AT-caus-E-??-go.with
"W make Y bring along X" (W = subject)

→ This is the form that would show up when the matrix causer—W—is in subject position, indicated by the AT agreement.
→ But when the embedded causer—the object of the matrix cause—is in subject position, indicated by TT agreement, the lower lexical causative morpheme reappears, and the matrix syntactic causative morpheme disappears!

(31) ??-pa-pag-sama-in
??-E-caus-go.with-TT
"Y be made to bring along X by W" (Y=subject)

→ And this happens with TT forms of lexical causatives too! Til now, all the lexical causatives we've looked at have been AT forms (like (32)a below, repeated from (29)b), so the agent of the causative would have been in subject position. If the Theme of the causative is in subject position, indicated by the TT suffix in (32)b, the causative morpheme disappears (but the inchoative morpheme does not pop up in its place):

(32) a. m-(p)ag-sama
AT-caus-go.with
"Y brings along X"

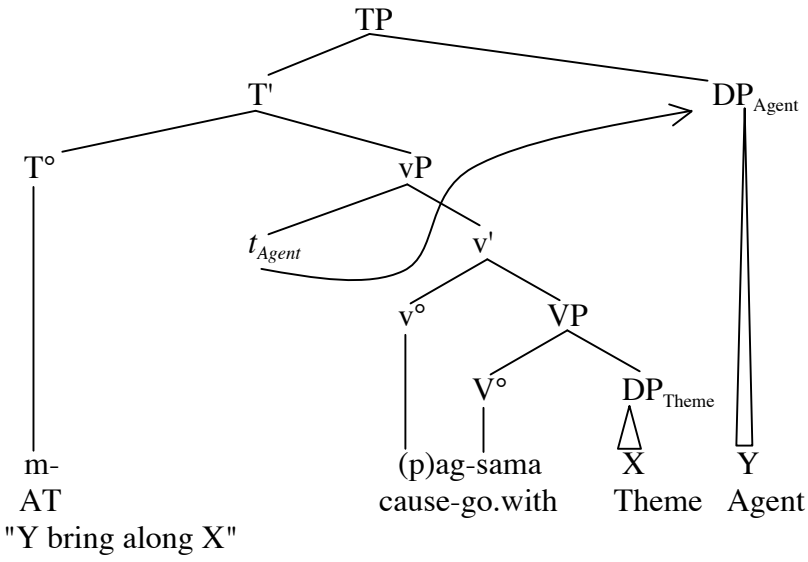
b. ??-sama-(h)in
??-go.with-TT
"X is brought along by Y"

→ So in (32)b, the object of the lexical causative is in subject position, and the causative morpheme disappears.
→ The clincher is what happens when, in the syntactic causative of the lexical causative, the Circumstantial Topic option is exercised, putting the embedded Theme into subject position but leaving the matrix causative agent and the lexical causative agent in situ inside the nested vPs. In these circumstances, *both* causative affixes disappear.

(33) pina-buksan ko kay Pedro ang kahon
pst.pa-open 1sg.GEN kay Pedro the.NOM box
"The box was made to be opened by Pedro by me"
"The box, I had Pedro open."

→ The generalization: When the specifier of v_{cause} is filled by its agent argument—when that argument does *not* externalize and become the subject—the causative morpheme in $v°_{cause}$ deletes.
→ This is (sort of) an example of the Doubly-Filled X Filter in action.

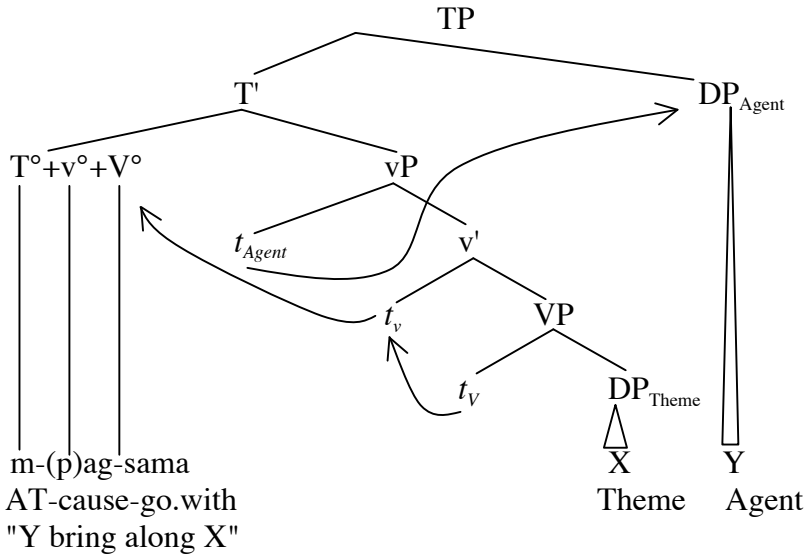
Trees:
(34) AT lexical causative



"Y bring along X"

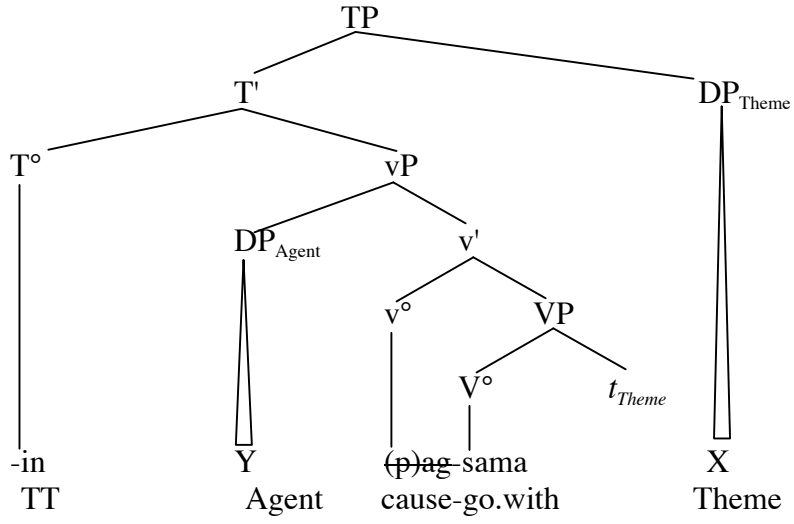
→ Notice Doubly-filled v filter ok in this structure—the Spec-vP is vacated by the Agent DP, so it's ok for the v° to be spelled out.
→ But also notice that I haven't indicated head-movement applying to this sentence—crucial for deriving V Ag Theme Obl order in CT constructions as in (25).
→ If head-movement applies, the structure would look like this:

(35)



→ But now notice—if head-movement to T° applies, it looks like the Doubly-Filled v Filter can't apply ever, since v° will *never* be 'filled'. Notion of 'filled' for v° must mean 'spelled out anywhere in chain'—but notion of 'filled' for Spec-v° *cannot* mean that.
→ In this case, it might not matter—if head movement did not apply, all the morphemes would still be in the right order–perhaps they could just do M-Merger under adjacency.
→ But check out the lexical causative in the TT case. Recall that in *this* case, the Agent will remain in Spec-vP, so the Doubly-Filled v° Filter needs to apply and delete the -*pag*- causative morpheme in v°:

(36) TT lexical causative

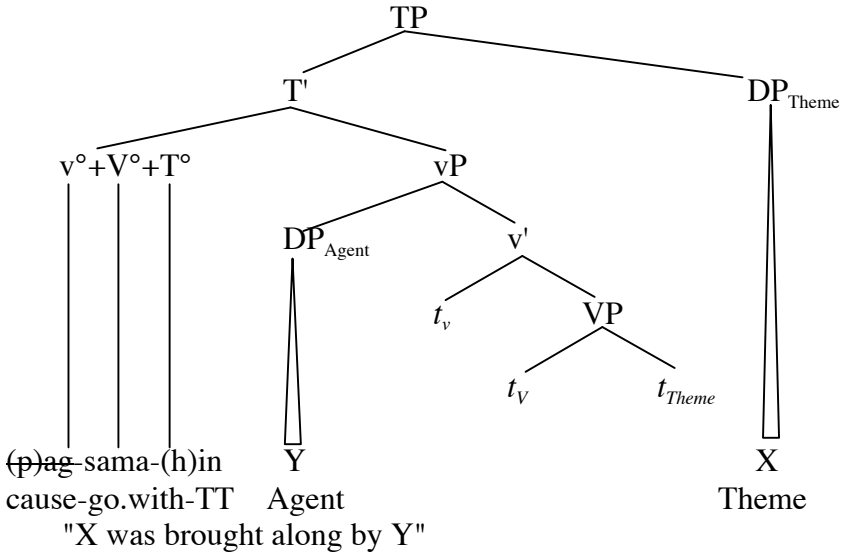


"X was brought along by Y"

→ Here there's a major word order problem if HM does not apply. The Doubly-Filled-v Filter can apply correctly, since both Spec-vP and v° are occupied at PF, but then the verb

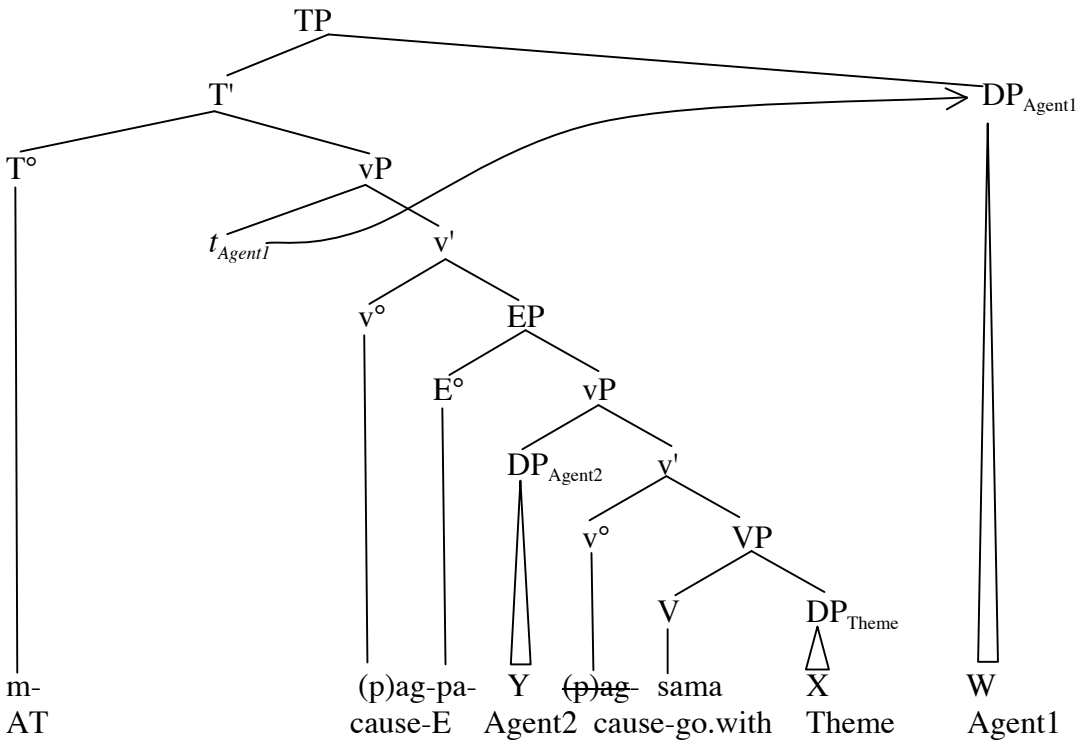
is stuck to the right of the Agent, and the TT suffix is stranded in T. HM must apply, and the structure must be like this:

(37) TT lexical causative



→ So the null version of the causative, triggered by the filled spec-vP, is required even though the causative head has itself vacated the v° position. The Doubly-Filled v° Filter has some peculiar properties.
→ We see the same problem in the causatives of lexical causatives, whether AT, TT, or CT

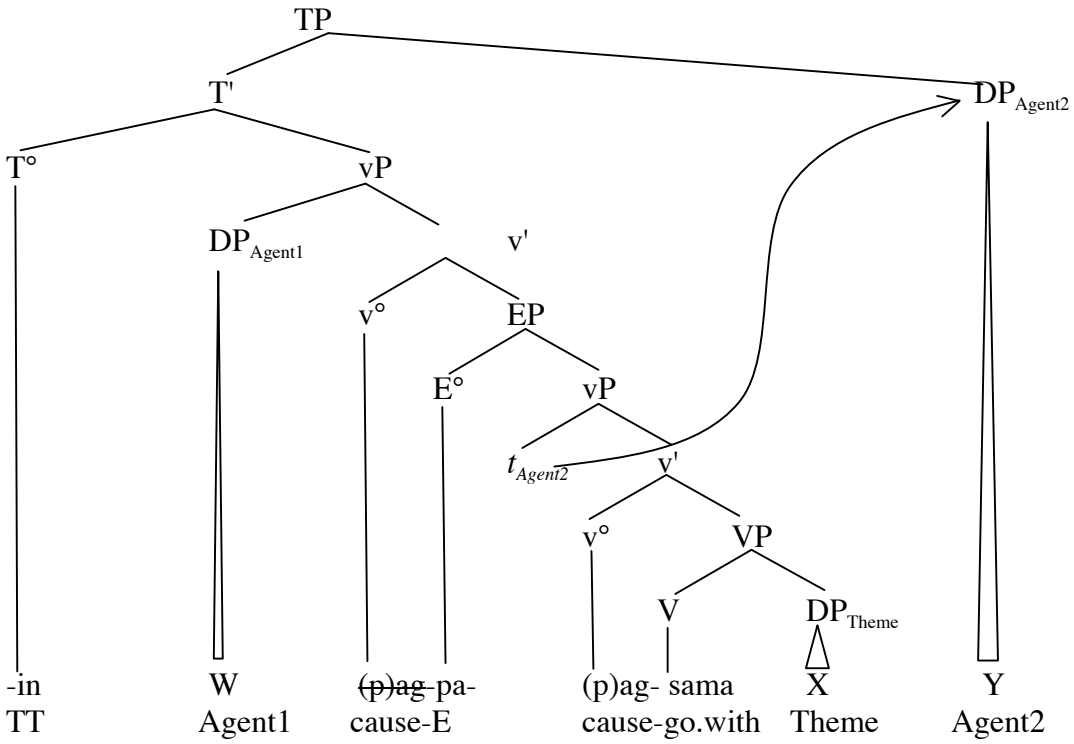
(38) AT syntactic causative of lexical causative



→ There's a word order problem between the verb root and the Agent2 subject of the embedded lexical causative, which is remaining in situ and triggering the Doubly-Filled v Filter.

→ Ditto for the TT version of the syntactic causative of a lexical causative:

(39) TT syntactic causative of lexical causative



→ Here, W, the matrix Agent, will intervene between the suffix in T° and the rest of the verb complex, so again HM is necessary, and again, the Doubly-Filled-v Filter must be referring to some level of representation in which phonologically HM doesn't count but XP movement does.

→ Now, in DM, it would be extremely easy to write up an extra Vocabulary Item for the v_{Cause} terminal node that would spell out v_{Cause} as ∅ only under certain structural conditions—when the v° checks genitive case against an in-situ DP in its specifier, for example—and as *-pag-* elsewhere.

→ But really it would just be a description. There would be no connection to the syntactic fact of XP-movement, and it would just be coincidence that the v° morpheme is ∅ just in case its spec was filled— it could just as easily work the other way around, where it was *-pag-* when its spec was filled and ∅ when the spec is vacated by movement. The connection to the Doubly-Filled Comp filter would be lost.

→ It's possible that these facts are telling us something more profound about the relevance to the syntax of HM and XP movement. If HM is somehow 'phonological', when XP movement is syntactic, then maybe the Doubly-Filled v° Filter applies 'before' HM but after Spell-out.

→ Travis hints at a different solution on p. 164, in which vocabulary insertion is cyclic; it's not clear to me how this will help (it'd end up being a version of the phonological HM account, I think).

…but it's a VERY interesting problem.

→ Ironically, the phenomenon really is brought up in order to make a simple but profound point: because the syntactic *-pag* and the lexical *-pag* are both subject to this filter, they're clearly the same item (we've got better evidence than just morphophonological identity, as in Japanese), further supporting the notion that causative iteration is just stackng of v°s.

4.5 Relationship between the 'lexical' domain and the phonological word

"M-words vary from language to language, depending on the morphological/lexical entries. S-words, represent at most one event, are formed in the l-syntax [below the first vP] and are universal. The universality of s-words and the language variation found in m-words lead to mismatches. For example, *mampanasa*, cause-cause.be.washed, "make wash" is one m-word in Malagasy, two m-words in English, and two s-words in both. *Sùá dé*, push fall, "push down", is two m-words in Edo, two m-words in English, one m-word in French (*renverser)*, and one s-word in all three languages.

→ The S-words—one event—nonetheless have at least a bipartite structure: v° and V° (where I think V° is actually not a V but a stative predicate).
→ With many verbs you apparently can't see this in English…
→ … but you can in Japanese and Malagasy, where you can see the v° morpheme, and in Edo, where there's even two separate M-words within one S-word.

→ BUT—English has a very prolific verb-particle family—these are bipartite verbs if ever there were any. These would again be cases where one S-word goes with two M-words, right here at home

→ What is the difference between the English type and the Japanese/Malagasy type?

→ Ramchand (and maybe Svenonius?) suggests a parameter: Contentful (√) material appears in the top half of the structure in English, but in the bottom half of the structure in languages like Japanese and Malagasy (and Persian and Inuktitut, as we'll see).

→ They implement this in a three-part structure: v°, V°, and Rv° (= P° in my world). Encyclopedic material (√s) go in V°. In Japanese and Malagasy, Rv and V° would tend to combine to make a contentful verb root, and v° is realized separately. In English, on the other hand, V and v° tend to combine to make the contentful verb part, and Rv is realized separately as a particle.

→ Their insight I think is a profound one—the difference has to do with where and how the √ can be inserted into the structure—though I disagree with the particular implementation.

4.6 Causes vs. Agents and Telicity

→ The final Malagasy twist has to do with a group of morphemes that are apparently in complementary distribution with the v° morphemes we've seen so far, namely the inchoative *-i-* and causative *-an-*.

→ These come in three variants, rather than just two: 'active' *maha* (for transitive agentive verbs, AT), 'passive' *voa-* (for transitive verbs, TT), and inchoative *tafa* (for inchoatives and adjectives.)

→ They all have the effect of entailing telicity—they're like the particle *up* in English, or aspectual uses of reflexive *se* in Spanish and *si* in Italian. Like Italain, Malagasy transitive predicates don't entail telicity in the past tense; it's just a defeasible implicature. With these prefixes, however, telicity is entailed:

(40) √vory = 'meet'
m-an-vory = 'X gather Y'
m-i-vory = 'Y meet'

a. namory ny ankizy ny mpampianatra
past.caus.meet the children the people
"The teachers gathered the children
..nefa tsy nanana fotoana izy
but neg pst.have time they
..but they didn't have time."

(="were gathering the children", "started to gather the children")

b. Nivory ny olona
pst.inch.meet the people
"The people met
..nefa tsy nanana fotoana izy
but neg pst.have time they
..but they didn't have time."

c. **Naha**vory ny ankizy ny mpampianatra
past.AT.telic.meet the children the people
"The teachers gathered the children
*..nefa tsy nanana fotoana izy
but neg pst.have time they
..but they didn't have time."

d. **Tafa**vory ny olona
pst.inch.telic.meet the people
"The people met
*..nefa tsy nanana fotoana izy
but neg pst.have time they
..but they didn't have time."

→ Because of their aspectual effects, Travis analyzes them as heading an Inner AspP, situation just below vP and above VP.

→ Interestingly, the subject of a *maha-* prefixed verb loses its agentivity. It gets more of a "caused involuntarily/accidentally" meaning. They are compatible with inanimate causes, or with non-volitional animate causes

(41) **Maha-**tsara ny trano ny voninkano/*Rabe
AT.Telic-beautiful the house the flowers/*Rabe
"The flowers/*Rabe made the house beautiful"

(*Rabe* ok if nonvolitional, just beautifying with his presence.)

(42) a. (Nanao fanahiniana) n-an-tisaka ni biby kely Rabe.
(made spirit) pst-caus-footprint the animal small Rabe
Rabe (deliberately) stepped on the insect.

b. (*Nanao fanahiniana) naha-tisaka ni biby kely Rabe.
(*made spirit) pst.AT.telic-footprint the animal small Rabe
Rabe (*deliberately) stepped on the insect.

→ Travis concludes that Cause theta-roles are assigned in Spec-AspP.

→ Another possible interpretation: v° may contain different feature bundles, differentiating between Cause and Agent.

→ Folli & Harley 2005 found evidence also suggesting a link between a Cause role and telicity, with verbs of consumption. When such verbs have an inanimate external argument, they tend to require telicity-ensuring structure around them, in both English and Italian:

(43) a. The sea destroyed the beach
'The groom destroyed the wedding cake'
b. *The sea ate the beach
'The groom ate the wedding cake'
c. Il mare ha distrutto la spiaggia
The sea has destroy.PST the beach
Lo sposo ha distrutto la torta nunziale
The groom has destroy.PST the cake nuptial
d. *Il mare ha mangiato la spiaggia
The sea has eat.PST the beach
Lo sposo ha mangiato la torta nunziale
The groom has eat.PST the cake nuptial

(44) a. The sea ate away the beach
*The sea ate the beach
b. The wind carved away the beach
*?The wind carved the beach
c. Il mare si é mangiato la spiaggia
The sea REFL is eat.PST the beach
*Il mare ha mangiato la spiaggia
The sea has eat.PST the beach
d. Il vento si é ritagliato pezzo di spiaggia
The wind REFL is carve.PST a piece of beach
*Il vento ha ritagliato un pezzo di spiaggia
The wind has carve.PST a piece of beach

→ F&H concluded that Cause necessarily selected a small clause complement, ensuring telicity; whatever the underlying cause, however, there is clearly a robust connection.

→ Also interestingly, *tafa-* prefixed inchoatives can co-occur with an external argument, very uncharacteristically. The external argument gets an abilitative reading, interpreted as the subject of a modal of ability.

4.7 Moral so far

→ Robust confirmation of bipartite verb structure proposal,
→ Causative pattern very similar to that of Japanese
→ edge of vP as edge of 'l-syntax', 's-word', 'idiom', whatahveyou
→ Languages vary in what's an m-word, where in the bipartite structure √ meaning is encoded, but not in the s-word as a domain/phase/unit of interpretation
→ Beginnings of suggestion that there's more fine-grained semantic distinctions to be made in the v° area to do with volitionality, ability, telicity

5 Embick: "Locality, Listedness and Morphological Identity"

5.1 Introduction

→ Trying to distinguish between systematic homophony (i.e. syncretism) and accidental homophony.

→ Asserts that the spell-out conditions for a given bundle of features can depend on the syntactic environment -- whether the bundle is sister to a √root or not (like Japanese causatives). 'Substantive identity' exists when two bundles have the same feature content, no matter where in the tree they are.

→ Adjacency also matters.

→ Tricky distinction:
Substantive identity = identity of terminal nodes
Syncretic identity = same vocabulary items inserted in two places (*not* the same as substantive identity, because of underspecification — see Hupa pronoun case)
Accidental identity = two vocabulary items that sound alike

(45) a. *Substantive identity*: terminal node headed by *-sase* in lexical causative
sak-ase, 'bloom-CAUS' — lexical causative next to root
ik-ase, 'go-CAUS' — syntactic causative next to v

b. *Syncretic identity*: terminal nodes have different features but realized by same VI, as in Hupa pronouns:

	Subj	Obj
1s	W-	WI-
2sg	n-	NI-
1pl	dI-	noh-
2pl	oh-	noh-

c. *Accidental identity*:

English 3sg.pres	*-s*	= /z/ in 'She sees'
English plural	*-s*	= /z/ in 'The seas'

5.2 English participles

→ Question: is the adjectival *-en* in *The rotten apples* the same as the passive verbal participle *-en* in *The paper was written*?

→ Many have assume that the verbal passive and adjectival particples are always identical in English

→ That would make *rotten* a case of accidental homophony, since its verbal particple, which can also be used adjectivally, is *rotted*. (*The apples have rotted*/**rotten*).

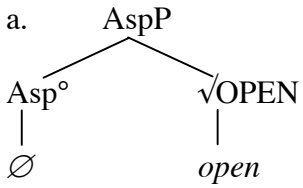
(46) Cases in which adjectival form and passive ppl form of verb are distinct:
a. *rotten* / *rotted*
b. *sunken* / *sunk*
c. *drunken* / *drunk*
d. *open* / *opened*

→ Crucial distinction: Eventive verbal passive (including a v°) vs. resultative ppl (no v°), and state (just a √)

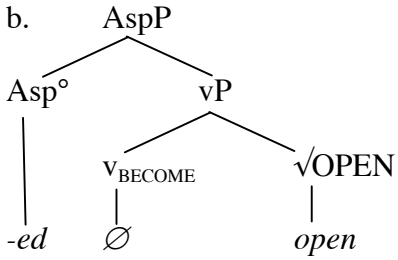
(47) a. The door is open.
b. The door is opened.
c. The door was opened by John (at 2:00).

→ Claim: All of the above involve a resultative-y aspectual head, Asp, just attached at different layers of structure

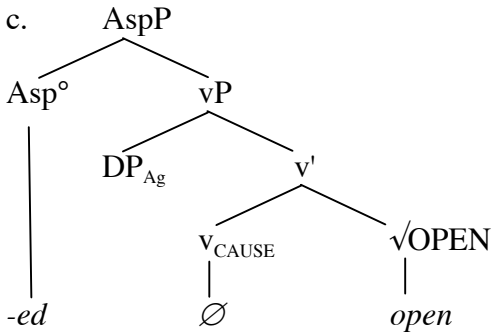
(48) a.



b.



c.



5.3 The generalization about allomorphy

→ Empirical explanadum

ALLOMORPHY GENERALIZATION: A 'stand-out' participial allomorph (like *-en* in *rotten*) is found only in the 'stative' syntactic structure.
→ Claim is that there's a special list of Asp° VIs for accessing on the first 'cycle' (i.e. in the environment of √ROOT); another list of Asp° VIs is accessed on the second cycle (in the environment of v°

→ Really just 'secondary exponence' / morphologically conditioned allomorphy of the type we're familiar with.

→ Notion of 'cycles' captures idea (from causatives paper) that such conditioning must be *local* — that it can't 'see through' v°. In causatives paper, this was just captured because the conditioning environment only happened to specify √ROOT environments; special morphemes conditioned by both √ROOT and v° were theoretically possible but didn't happen to exist. Here, they will be **ruled out** by this theoretical claim about cyclicity.

→ notion of phases could capture this idea as well

→ Same idea applies in cases like *horr-ible* and *formaliz-able*, or *feroc-ity* and *break-abil-ity* — same affix being attached in the first case to a simplex structure containing just a √ROOT, and in the second case to a complex structure containing at least one other head — high/low attachment.

(49)

Examples	*Stative*	*Participial*
bless	blessèd	blessed
age	agèd	aged
allege	allegèd	alleged
rot	rotten	rotted
sink	sunken	sunk
shave	shaven	shaved
drink	drunk(en)	drunk
open	open	opened
empty	empty	empted
dry	dry	dried

→ Complicated and interesting question in fn. 12 re attributive vs. predicative position: *rotten tomatoes/tomatoes are rotten* but *the sunken ship/the ship is sunk(en)*

5.4 Structures and allomorphy patterns

→ Distinguishing statives from resultatives: Verb of creation + test form:

(50) The door was built open / *opened
The door was built tall / *destroyed

→ Productive *un-* prefixation — yes with resultatives, no with statives

(51) The door was unopened / *unopen
The door was undestroyed / *untall

(52) *unrotted / *unrotten*
*undrunk / *undrunken*
*unsunk / *unsunken*
*unblessed / *unblessèd*

→ Key point: when there is a 'special' form — one that is distinct from the other — it's always the Stative meaning that gets the special form, never the resultative or passive participial meaning

5.5 The nature of the pattern

→ Analytical options:

A: No relation between special Stative form and verbal participle at all
√SPINACH and *√SPIN* (see Longtin et al article in a few days)
√ROTTEN and *√ROT*

B: '*rotten*' and '*rot*' are stem-allomorphs of *√ROT*, like '*broke*' and '*break*' are stem-allomorphs of *√BREAK*

C: '*rotten*' derived from '*rot*' realizing *√ROT* + '*-en*' where '*-en*' is the realization of some stative-forming head that is just accidentally homophonous with the '*-en*' that realizes the partcicipial-forming head.

D: '*rotten*' derived from '*rot*' realizing *√ROT* + '*-en*' where '*-en*' is the realization of the *same* head that appears in participials elsewhere, but which has some special allomorphs in the contexts of certain √ROOTs

→ A: Reject out of hand. Basis: lots of cases where the stative and resultative participle, related by the same kind of meaning relation as *open* and *opened*, are homophonous, e.g. *closed* and *closed*

→ B: Reject on the assumption that if learners see pieces, they break the forms up, 'learners prefer a piece-based analysis'. The Aggressive Parser (again, see Longtin et al)

→ C: Reject on the assumption that accidental homophony is problematic, from the learner's perspective; needs lots of independent distributional and morphological evidence to distinguish it. Not available in these cases; they have generally similar distributions and meanings

→ Why not assume that stative ASP has a slightly different but overlapping featural makeup with participial ASP? This would take care of the *-èd* problem, below… though not problem with *-ly* forms)

5.6 Locality and cycles of insertion

A preliminary treatment of the allomorphs of Asp in the passive and resultative participles:

(53)

ASP_{PRES}	↔	*ing*	
ASP	↔	*-en*	/ ____ {√SPEAK, √BREAK, etc…}
ASP	↔	∅	/ ____ {√HIT, √SING, √SHRINK…}
ASP	↔	-t	/ ____ {√BEND, √BUY,…}
ASP	↔	-d	

→ Consider the difference with the Japanese case: if Embick's structures are correct, these allomorphy lists must mention roots and be sensitive to root contents, but still be insulated from the roots by one layer of v°-ness. So v° is no guarantee that allomorphy is blocked.

→ If you just tucked the Stative *-en* forms (or other irregular forms) into this list, you'd get them in the Resultative/Eventive participle environment as well as in the Stative environment. Not correct!

→ Could mark certain roots as having their conditioning effect only when the affix is immediately adjacent to it, so e.g. insert √ROT into the list for *-en* with a diacritic attached… but then the stative *-èd* morpheme would only have roots like that in its list

→ (Is the existence of the stative *-èd* morpheme a problem for the whole approach that assumes the ASP heads are the same, perhaps?)

→ Claim (against the *-sase-* insight): the default *-ed* is only the default in the outer domain, not the inner.

→ Whole thing of dismissing the syntactically-conditioned allomorphy idea happens a bit too quickly for me. So what if there's a suffix that only shows up in √ROOT environments? That's exactly the kind of accident that you'd expect… you'd also expect similar accidents for suffixes that only show up in v° environments as well…

→ Embick's solution: have one list of VIs competing for ASP on the Root cycle, and another list of VIs competing for ASP on later cycles

→ The list for *-en* on the Root cycle has a different set of VIs on it than the list for *-en* on the later cycles

→ Are these the same *-en*? Have we got anything better than accidental homophony now?

→ Items are identical except in their lists — that is, except in their secondary exponence

→ Embick is distinguishing essentially 'primary exponence' from 'secondary exponence' with these cases, making a distinction between cycles

→ If you had a single exponent and a single feature bundle with two different lists within the same cycle, the lists would collapse into one and you'd have a single VI

→ Across cycles, though, this doesn't happen (*rotten* vs. *rotted*). But you can still define a notion of identity: two instances of the same VI with the same primary exponence but different lists across cycles count as exhibiting SUBSTANTIVE IDENTITY.

5.7 Global Root Visibility

→ Note: it remains unexplained why the 'special' form is always the Stative, Root-attached one. Why do things get more regular as you move up the tree? In the Japanese case, it was easy because the cut-off was so clear: root-embedding = allomorphic, regular = vP

embedding. Here you have an intermediate degree of root-embedding, with an intermediate degree of allomorphy.

→ is it weird to have intervening morphemes not actually 'intervene'? Do we have to allow the root to be visible all the way up the tree? (Something like this seems to be true in some polysynthetic languages).

→ At least for English, Embick says it's not necessary, as long as we're willing to allow adjacency to play a role too.

→ Note that this won't help with clear-cut-ness the Japanese case, where root-attached=allomorphic and v-attached = regular…

6 Barragan: Cupeño verb morphology

6.1 Where we are

→ have seen lots of examples of bipartite structure of verbs crosslinguistically (√+v)
→ the morphemes realizing the upper level of the structure can be sensitive to various kinds of semantic content
- cause, become (Japanese and basically all the other languages)
- agency vs causation, 'control' of unfolding event (Malagasy/Tag., St'atimcets)
- self-directed action (reflex) vs. indefinite nonspecific object (St'atimcets)
- state vs event (Persian)
- activity vs. semelfactive (Persian)
- all of the above + negation, creation, receiving… (Inuktitut)

→ have seen that morphologically v° morphemes are subject to blocking (Japanese)
→ in languages with affixal causatives, diff between first v° (local to root, allomorphic, idiomatic, 'lexical') and subsequent v° (separated from root by first v°, regular, productive, 'syntactic') even though they're clearly the same item (morphophonologically identical (Japanese), subject to the same morphosyntactic processes (Tagalog)).

Questions:

Does affixation matter?

→ can't stack affixal causatives ad-nauseum, unlike independent causative Vs

→ seems like 'manner incorporation' phenomena correlate with ∅ v°—languages with visibly bipartite verb structures don't seem to allow it (though we haven't looked at this in depth—it may well not be true. Japanese, Hiaki, Korean have affixal 'go' verbs that can form compounds with manner-modifying verb stems (and in Korean, even verb phrases, according to Zubizarreta and Oh):

(54) Hiaki:

Ume o'owi-m kamion-po hap-saka.
The man-pl bus-in stand.pl-go.pl
"The men are going along standing up in the moving bus."

→ Persian vs. Inuktitut—free vs. bound light v°s…

How does affixation happen?

→ must be head-movement ('syntactic' affixation) in head-initial languages (Malagasy, Tagalog)

→ Maybe just adjacency in head-final languages ('morphological' affixation)? Persian vs. Japanese?

→ Next: looking at a case where we'll (kind of) recognize the pieces (V/√, v°, agreement, tense, aspect, etc.) but where the ordering seems way off: Cupeño

6.2 Cupeño

→ The Cupeño verb may appear bare:[8]

(55) ne€'-ne-pe tukuma€y neti'iv-a-y 'asra€'
1SG-1SG-IRR tomorrow 1SG-clothes-PSD-OBJ put.on
"I will put on my dress tomorrow."

→ Object agreement appears in the leftmost position affixed to the verb, even to the left of the subject agreement if it's prefixal (see 3c):

(56) a. Mú=ku'ut 'áye pe-ná'aqwa-nm-i **mi**-kwáw-pe-n
And=REP then 3SG-child-PL-OB **3PL.OB**-call-3SG-IN
"And then it is said he called his children (Faye Creation 119)"
b. pe-srúun-i **pi**-kúlu-lu-pe-n-ngiy
3SG-heart-OB **3SG.OB**-drag-RDP-IN-motion.away
"He went away dragging his heart"
c. tu€ku='ep **'i**-che€'-max
yesterday-R **2SG.OB**-1PL-give
"Yesterday we gave it to you"

→ Subject agreement: Two positions (3a vs 3c)! Only in past tense! (Agr+T being realized together? cf. Romance?)

→ Intransitive verbs: Past perfective—no other affix, subject prefixal

(57) a. pe-tewá-lu
3SG.Pst-see-go.to
"He went to see"
b. pem-'aÛ'chiwi
3PL.pst-make
"They made"

→ Agreement interacts differently with the three different classes of verbs

→ Salient point: (Tense-conditioned)Subject agreement appears *suffixal* to the verb root in the *-in*/*-yax* classes, but *prefixal* to the verb root in the zero class.

(58) Cupeño verb classes:
a. Zero-affixed stems: mostly intransitive unergatives
Subject agreement prefixal to root

ne-túl
1SG.PAST-finish
"I finished"

[8] I apologize for the way the data looks! I don't have the right fonts.

b. Stems taking the *-in* suffix
Subject agreement suffixal to root
yút-**ne**-n
raise-**1SG.PAST**-IN
"I raised"

c. Stems taking the *-yax* suffix
Subject agreement suffixal to root

hét-**pe**-yax
crouch-**3SG.PAST**-YAX
"He crouched"

→ Note: "IN" morpheme allomorphic depending on number of subject (contrast ex. in (59))

(59) a. wíchax-ne-**n**-qal
throw-1SG.PAST-**IN**-IMP.PAST.SG
"I was throwing it"

wíchax-pe'-**men**-wen
throw-1PL.PAST-**IN.PL**-IMP.PAST.PL
"They were throwing it"

→ Aspectual/Tense morphology: suffixal to the whole schmozzle
→ Past perfective null; past imperfective not null. All overt tense morphemes (past imperfective, present imperfective, future) conditioned by subject number.

(60) PAST IMPERFECTIVE
a. túku='ep mi-wíchax-ne-n-**qal** temá-t'a-yka
yesterday=R 3PL.OB-throw-1SG-IN-**IMP.PAST.SG** ground-ACC-TO
"Yesterday I was throwing them to the ground"
b. túku='ep mi-wíchax-che'-men-**wen** temá-t'a-yka
yesterday=R 3PL.OB-throw-1PL-IN.PL-**IMP.PAST.PL** ground-ACC-TO
"Yesterday we were throwing them to the ground"

(61) PRESENT IMPERFECTIVE
a. "Né-ye 'apú=sre='ep tew-**qá'** ne-'ách-i?"
1SG-mother already=DUB=2SG.ERG see-**IMP.SG** 1SG-pet-OB
"Mother, did you perhaps just now see my pet?"
b. "Hereryaa! axwé-sh 'axwá-'aw ngáq-yax-**we** 'ishmí'i!
Hey! that-ABS that-at perch-YAX-**IMP.PL** something(pl)
"Hey! That's something sitting there on top"

(62) CUSTOMARY IMPERFECTIVE
a. 'atíre qwe-l mélen naxáni-sh kwew-kwáw-ya-**na**
very can-2/3.ABS-IRR much man-NPN RDP-shout-YAX-**CUS.SG**
"The man is too noisy"

b. qáy-em-pe mi-nélin-**wene** súq-ta-m-i
NOT-2/3.ERG-IRR 3PL.OB-look.at-**CUS.PL** deer-NPN-PL-OB
"They won't be seeing any deer"

(63) FUTURE IMPERFECTIVE

a. tukumáy=ne=pe ne-má-'aw nengú-**nash**
tomorrow=1SG=IRR 1SG-hand-?? hold-**IMP.FUT.SG**
"Tomorrow I will hold it in my hand"

b. tukumáy=che=pe che'-má-'aw nengú-**wene**
tomorrow=1PL=IRR 1PL-hand-?? hold-**IMP.FUT.PL**
"Tomorrow we will hold it in our hands"

→ Upshot: in *-in* suffixed past imperfective forms, you get **three** morphemes that are sensitive to subject number: the suffixal subject agreement morphology (absent in nonpast forms), the *-in*/*-men* contrast in the IN morpheme, and the *-qal*/*-wen* contrast in the aspect/tense morpheme (see (60)a,b)

→ 'Multiple exponence'?!

→ Templatic representation of ordering of info on the Cupeño verb:

(64) a) Zero class:

Subj.Agr.Tense > Verb.Root > Asp.SubjNum/Tense (57), (58)a

b) IN class:

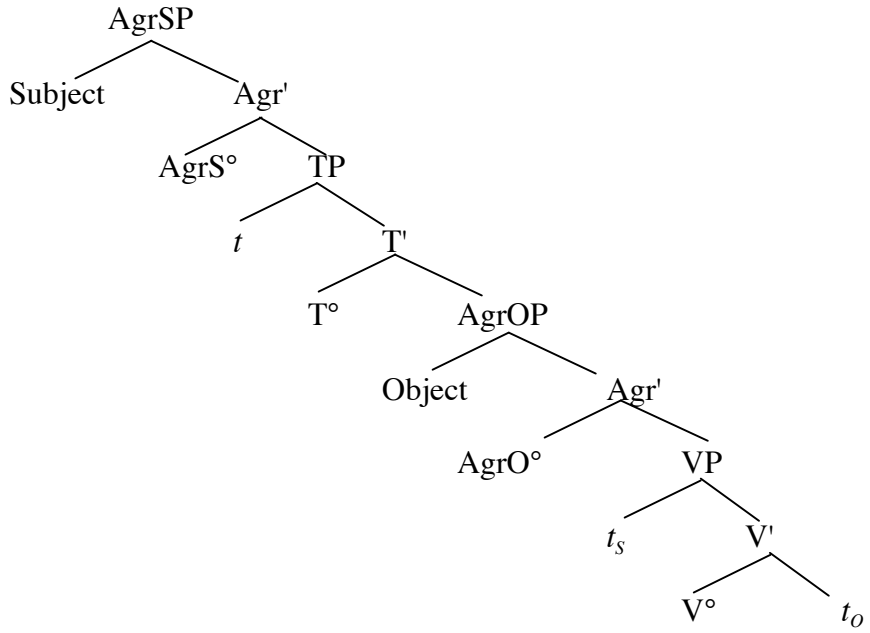
OBJ.Agr > Verb.Root > SubjAgr.Tense > IN.Subj.Num > Asp.SubjNum/Tense

c) YAX class (same as IN except with YAX in place of IN, usually intransitive):

(OBJ.Agr) > Verb.Root > SubjAgr.Tense > YAX > Asp.SubjNum/Tense

→ Mirror principle nightmare!

→ Consider the Chomsky/Pollock arrangement of Infl positions:



→ Regular head movement of V to AgrS, with left-adjunction will predict the following order in the final complex AgrS° head:

(65) [[[V° AgrO°] T°] AgrS°]

→ Alternative: Let's say we adopt the split-VP with Koizumi, Runner, and Lasnik's proposals for AgrO occupying the spit between v° and V°. Then head-movement predicts the following morpheme structure:

(66) [[[[V° AgrO°] v°] T°] AgrS°]

→ There's no getting around the fact that AgrS should be farther from the verb root than AgrO, no matter whether you have left- or right adjunction for any given affix—that is, no matter whether a given affix is prefixal or suffixal. (This holds even if you assume with various authors that T dominates AgrS rather than the other way around).

→ BUT: further information—phonologically the object agreement is a clitic, not as tightly phonologically connected to the verb word as the affixal AgrS° morpheme (Barragan p.10). Conclusion: Maybe it's not in its initial position via head movement, but via XP movement (perhaps to spec-AgrOP), followed by Cliticization? Let's just assume this for now.

→AND: how can we capture the two positions of the (same) subject agreement morpheme? Prefixal to root in zero-class, but suffixal to it in the IN and YAX classes?

→ Well, what *are* IN and YAX?

→ Further question: what about the direction of subject-conditioned number allomorphy here? Innermost affix (subj agr) to outermost affix (tense)? Given Bobaljik's spell-out of contextual-allomorphy account—featurally conditioned allomorphy appears down, not up, the tree from the conditioning feature, because of bottom-up cyclic spell-out—this is

mighty peculiar.

→ Also consider the distribution of the subject agreement morphemes—conditioned by past tense features. Looks like conditioning goes both out (subject # → tense) and in (tense → subject #)

6.3 What are -in- and -yax-?

→ Verb classes (zero, *-in-* and *-yax-*) correspond roughly to unergative, transitive, and stative/unaccusative respectively:

→ *-in-* and *-yax-* -class verbs often alternate with each other, in a standard causative/inchoative kind of pairing:

(67)

a.	cha€sr-in	cha€sr-yax
	POLISH-IN	POLISH-YAX
	"polish something"	"something shines" (Hill 2000a)
b.	ca€qe-in	ca€qe-yax
	FLAT-IN	FLAT-YAX
	"to flatten"	"to be oblique"
c.	ce€ne-in	ce€ne-yax
	ROLL-IN	ROLL-YAX
	"roll something"	"something rolls"
d.	ci€lyi-in	ci€lyi-yax
	JINGLE-IN	JINGLE-YAX
	"jingle something"	"something jingles"
e.	hi€we-in	hi€we-yax
	LUKEWARM-IN	LUKEWARM-YAX
	"heat to lukewarm"	"something is lukewarm"
f.	pu€ve-in	pu€ve-yax
	ROUND-IN	ROUND-YAX
	"make round"	"something is spherical"

→ Conclusion: they're light verbs, realizations of v°, corresponding to v_{CAUS} and v_{BECOME} respectively

→ With that information, we can revise our templatic representation of the Cupeño verb as follows:

(68) a) Zero class:

T/Agr > Verb.Root > Asp

b) IN class:

(OBJ.Agr) > Verb.Root > Tense/SAgr > v > Asp

(Bearing in mind that v° and Asp° show allomorphy conditioned by subject number).

→ Back to the Mirror Principle:

→ Let's further assume that AgrS and T° are fused together. This gives the following:

(69) [[[V] v°] T/AgrS°]

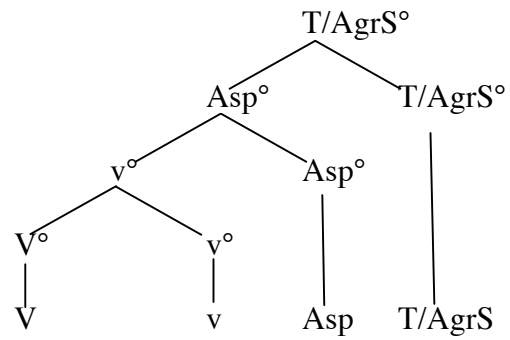
→ Finally, what about Aspect? That's usually (Mirror-principle-wise) between T and v°, giving this kind of structure:

(70) [[[V] v°] Asp] T/AgrS°]

→ But here Asp (conditioned by Tense) is at the end of the verb form.

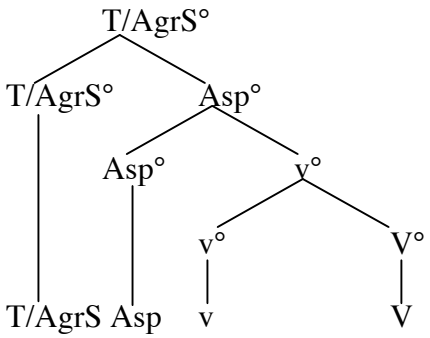
If we assume head-movement to form the complex head in (70), AND we assume that any given morpheme can be either a prefix or an affix (the famous 'mobile' idea about syntactic structure—Vocabulary Insertion linearizes, at least for affixal material), we get the following possible orders, trying every linearization idea:

(71) a. Everything suffixal



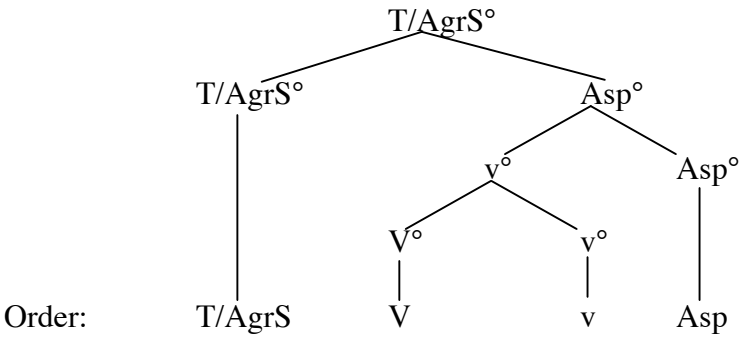
Order:

b. Everything prefixal

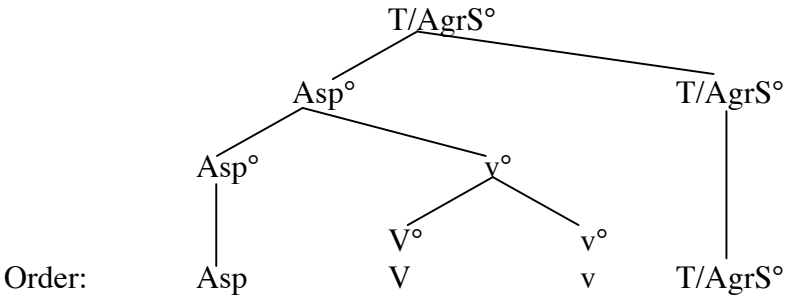


Order:

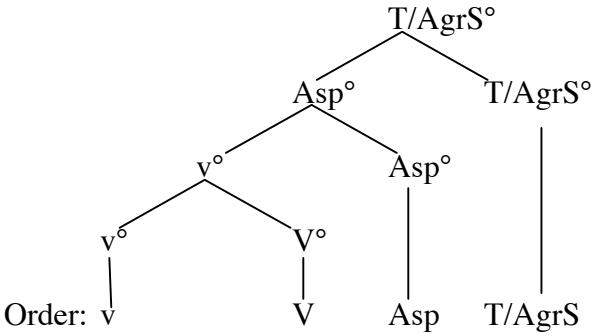
c. Everything except T/AgrS suffixal, T/AgrS prefixal



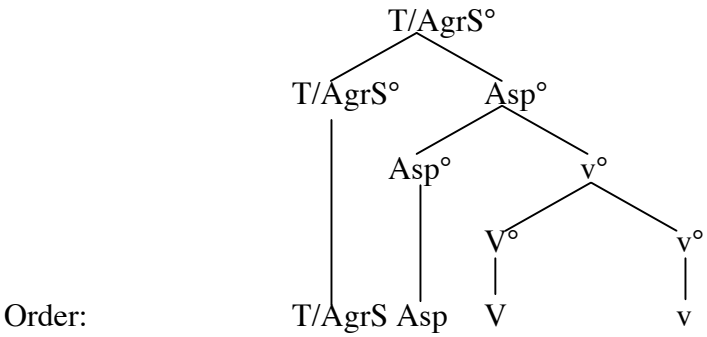
d. Everything except Asp suffixal, Asp prefixal



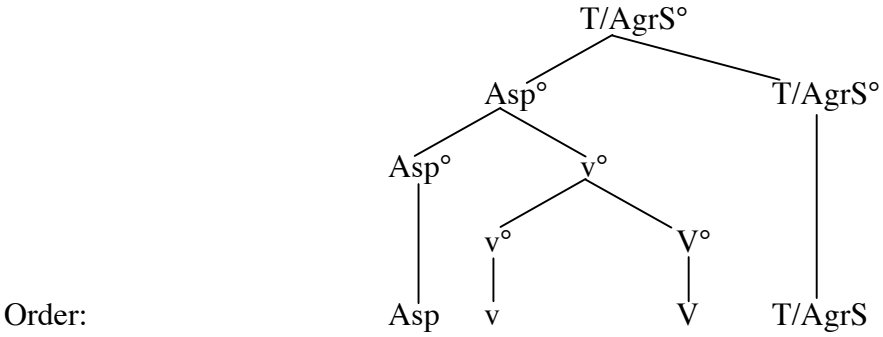
e. Everything except v° suffixal, v° prefixal



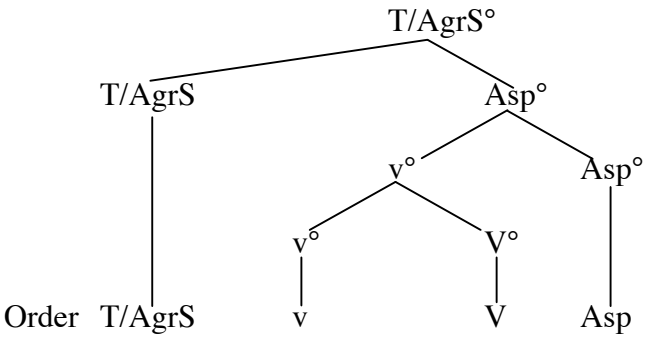
f. Both T/AgrS and Asp prefixal, v° suffixal



g. Both Asp° and v° prefixal, T/AgrS suffixal



h. Both T/AgrS and v° prefixal, Asp suffixal:



→ No other orders are possible. v must always be adjacent to the V. When Asp and v are on the same side of V, v must occur closer to the V than Asp. When Asp and T/AgrS are on the same side, Asp must occur closer to the V than T/AgrS.

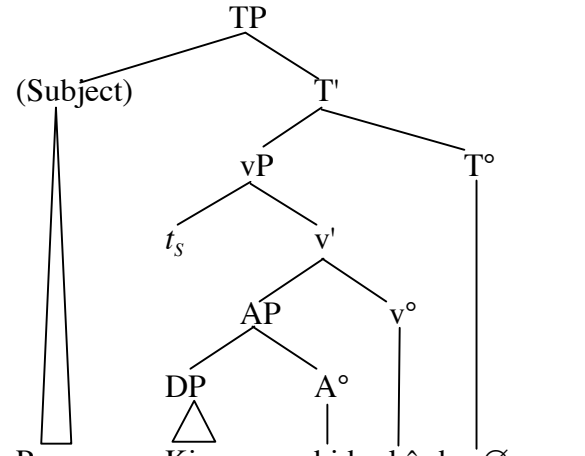
→ In particular, the Cupeño ordeing— V-T/AgrS-v-Asp, is impossible on any permutation.

→ Also, the variable ordering of T/AgrS with respect to V is problematic. How can the same affix be prefixal with one class of verbs and suffixal with another?

6.4 The solution: Assume VI-driven linearization (prefix/suffix). Use both HM of v° to T/AgrS, AND Merger under adjaceny to create verb word, with V movement to v° in the case of the zero class, but not the IN/YAX classes.

→ Consider Persian heavy vs light verbs: When a light verb is present, it's inflected for subject agreement and tense; contentful downstairs predicate remains unincorporated and without inflection/verbhood of any kind. Could be a structure like this, with, let's say, head-movement of v° to T°, stranding the √ in A:

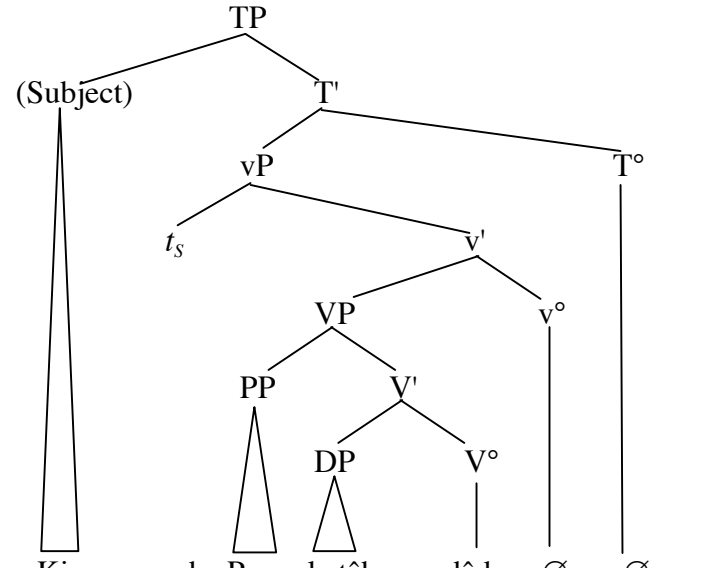
(72)



"Papar woke Kimea."

→ With heavy verbs, which bear the inflection directly themselves, it must be because there is incorporation of the verb root to v° (which verbalizes it) and thence to T°.

(73)



'Kimea gave book(s) to Papar.'

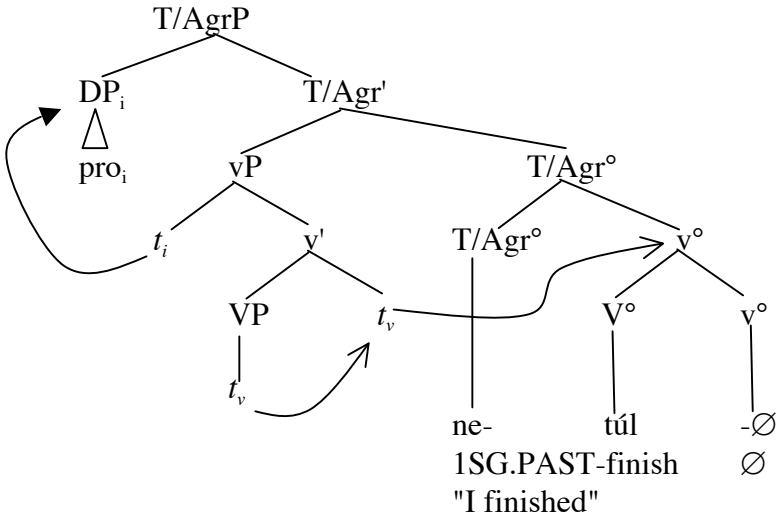
→ Here, the heavy verb starts out as the verb root and moves up through v° to T° and gets inflected.

→ Barragan's proposal is that essentially the same thing happens with the Cupeño verb, with the independent factor that the subject agreement/tense morpheme is prefixal, not suffixal, AND the verbal root is affixal. When there's an overt v°, the v° moves up and gets the subject prefix. When there's no v° (in the zero class) the V° moves to v° and thence v° to T°, so the subject prefix appears to the left of the verb root in that case. There's an additional stipulation, which is that the verb root is necessarily bound, no matter what syntactic operations it undergoes (unlike in Persian): If the verb root does not move to T°, it'll Merge Under Adjacency with whatever is on its right:

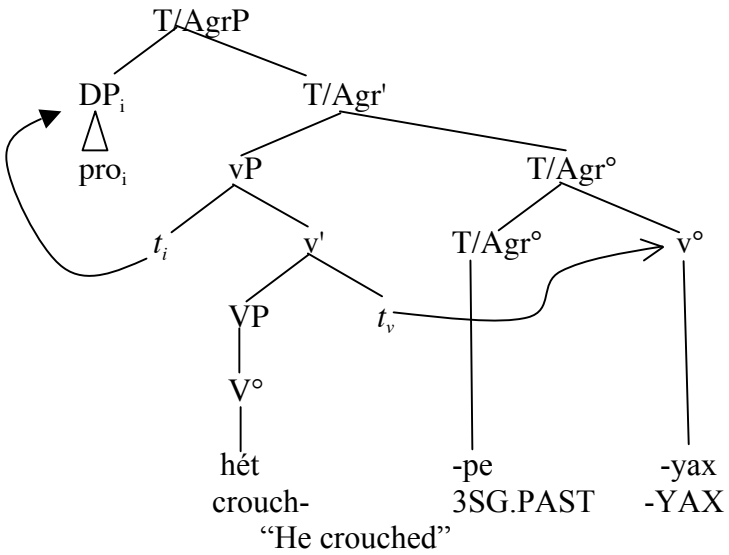
→ Essentials:

- Subject agreement/Tense is prefixal
- v moves through Asp to T/Agr
- In zero verb class, V moves to v°. In in/yax classes, this does not happen
- V is bound no matter whether it head-moves or not
- Object agreement is cliticized to the front of the verb word.

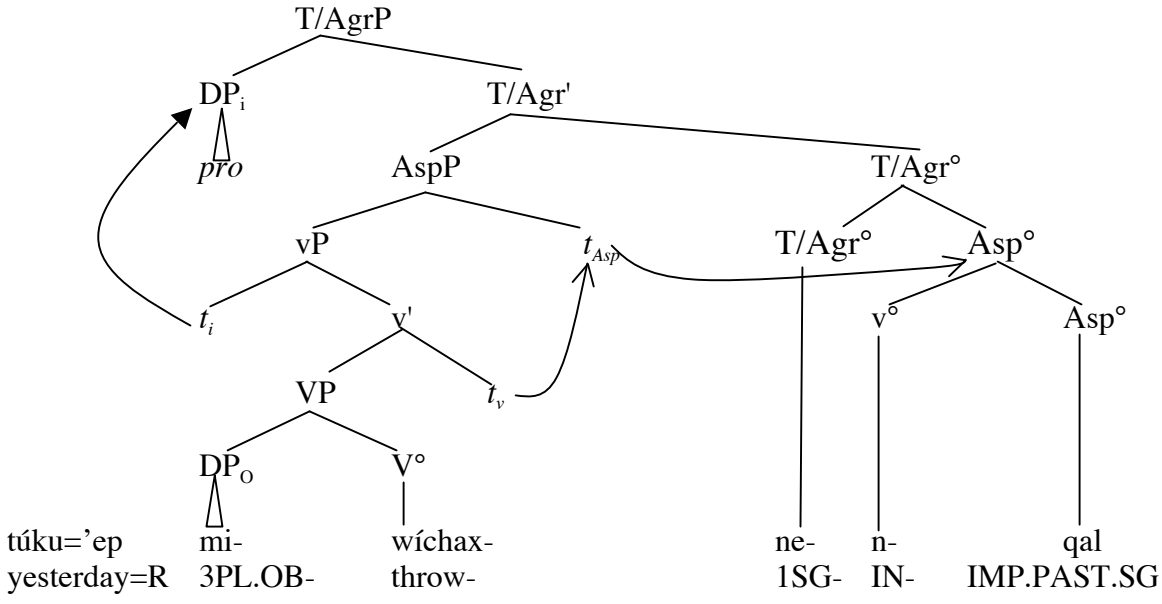
(74) Derivation of a zero-class inflected form:



(75) Derivation of a *yax*-class inflected form:



(76) Derivation of a *-in*-class inflected (imperfective) form:

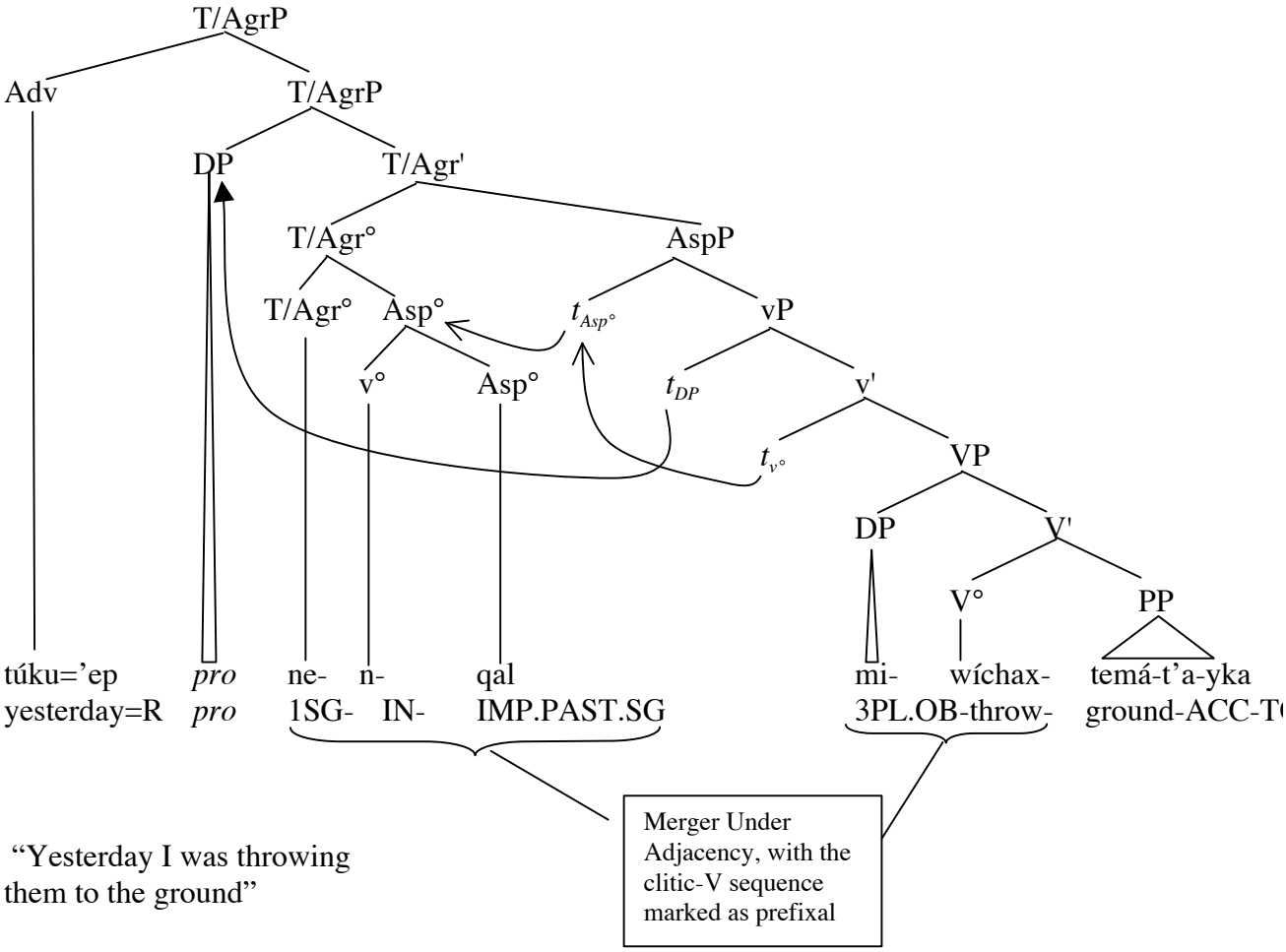


“Yesterday I was throwing them to the ground”

→ Recap: T/AgrS° attracts the v°, which head-moves up to it.
→ The V root may or may not be in v°. If v° = ∅, it is; otherwise, it's not
→ This derives the variable position of the subj agreement/tense prefix w/r to the root
→ Object prefix is a clitic, attaching to the root

→ BUT: Goal PP seemed to be out of place—should have been within the VP.
→ Possibility 1: Cupeño head-initial
→ Possibility 2: PPs right-extraposed

(77) Illustration of consequences given possibility 1:



"Yesterday I was throwing them to the ground"

→ Alternatively, the head-final ordering could be maintained with PP extraposition (same structure as the last time. More info about the word order properties of Cupeño needed to decide between options.

(78) Cupeño Vocabulary Items:

a. v°

yax	↔	v_{BECOME}
men	↔	v_{CAUS} / [[___]… +pl]
in	↔	v_{CAUS} / Elsewhere
∅	↔	v_{DO}

b. Asp°

wen	↔	+Impf / [[___] +pl, +pst]
we	↔	+Impf/ [[___] +pl, +present]
wene	↔	+Impf / [[___] +pl]
na	↔	+Impf / [[___] +present]
qatVm	↔	+Impf / [[___] +pl, +irr]
qat	↔	+Impf / [[___] +irr]
nash	↔	+Impf (Immediate Future being neither +past, +irr, or +present)

c. T/AgrS°

pe-	↔	[+past, +3sg]
ne-	↔	[+past, +1sg]
pem	↔	[+past, 3pl]
	…	
∅	↔	Elsewhere

Also of course a block of VIs for the object clitics, etc.

7 Williams 1994: Remarks on lexical knowledge

(79) 2 theories of the 'Lexicon'
a) list of all irregular sound/meaning correspondences (Bloomfieldian)
(=DM's 'Vocabulary List' + DM's 'Encyclopedia')
b) theory of the linguistic object the 'word' ('grammatical lexicon)
(Includes a generative component that assembles morphemes in accordance with universal & lang-specific principles)

→No logical connection between the two.
→ In fact, idea that 'word' necessarily = 'irregular' is plainly false
(Cf Pinker's 'Words and Rules')

→ Williams' conclusion: "...both the word formation and the syntactic system are 'clean' streamlined systems, independent of the [Bloomfieldian] lexicon."

(Aside: Williams does not question the received wisdom (created in part by his own earlier work) that the word-formation system and the syntactic system are separate; accepts wholesale the 'two-engine' theory of grammar. The DM idea is to meld the two engines into one; could think of it as doing morphology with the syntactic system, or as doing syntax with the morphological system. But because the theory of syntax is considerably more developed & well-understood than that of morphology, DM is usually seen as using an accepted syntactic system to do morphology, rather than the other way around. In any case, one-engine, all else equal, is better than two.

Worth noting that it's regularly accepted by psycholinguists that they're looking at the general 'rule' system of a language — at a part of the system that's conceptually *syntactic* — when they're looking at regular morphology.)

7.1 Idiom interpretation and syntax

(80) Idiom: "any defined unit whose definition does not predict all of its properties'
e.g. *kick the bucket* but also *transmis-sion.*
(By the regular word-formation system, the latter should mean 'the event or result of transmitting', which it can (like *kick the bucket* can mean 'kick the bucket'), but it can also mean 'car part which transmits power & shifts gears'; if this were compositional on *transmit* it should be *transmitter*, if anything).

(81) 'it has been commonly assumed that idioms are well-formed structures...What rules do idioms obey?'
Rules of interpretation: 'no'; this corresponds to the general idea of 'idiom'
(modulo McGinnis 2002's point about 'structural' aspects of meaning)
Rules of form: Williams claims idioms violating these do exist.
(The kind of meaning McGinnis discusses could be taken to be about the rules of form, rather than rules of meaning — that is, it's constructed from functional items, not from roots.)

(82) Ways of violating rules of interpretation:
→ argument structure violated ('kick the bucket' has an intransitive meaning)

(thinking about things from a 'linking rules' point of view)
→ rules of reference violated (no bucket around in 'kick the bucket')

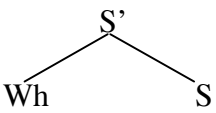
(83) What about violating rules of form?
"...it is an overwhelming fact that idioms obey the basic rules of form in a lg."
McGinnis' argument: meaning that is dependent on those rules of form is present in idioms

(84) Usual assumptions about idioms:
a. idioms are listed
b. idioms are well-formed phrases
c. idioms have empty parts
d. to get idioms into syntax, you insert the idiom, then fill in the parts

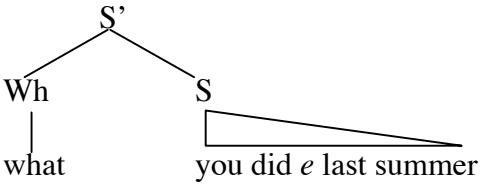
(85) Conclusion (particularly from (84)d above): maybe that's *all* syntax is — insert structure with blank bits, structure having an 'idiomatic' meaning, then fill in the blanks.
→ Gleitman's 'frames'
→ This is the fundamental idea behind Construction Grammar
→ Kind of a natural way to think, coming from a phrase-structure-grammar perspective (the EST, e.g.)
→ not at all natural coming from a projectionist perspective

(86) Some illustrations to support the point, some better, some worse:
(Goldberg's CG book has many many more examples)

(87) Illustration 1: Embedded questions:
→ What if the meaning 'embedded question' is not computed from the parts, but is just attached to the following frame? ("To give an example, consider the fact that embedded questions in English must begin with a WH word. It is well known that this is not to be described by making WH movement obligatory in English.")
→ To satisfy the 'embedded q' subcategorization of a verb like *know*, you'd just insert the following frame:



→ and then fill it in with lexical items, in a way exactly parallel to the way the X is filled in, in '*The cat has got X's tongue*'



→...well, not *exactly* like that! there has to be some way of ensuring that the S, which may be arbitrarily large, has a gap in it in a place whose subcategorizations match

those required by the wh-word (*what, who, when, where*... (10c)); not only that, the gap (which can be arbitrarily far away (10a-b)) has to be related to the position of the Wh in a certain kind of locally licensed way (the relationship can't cross islands (10d))

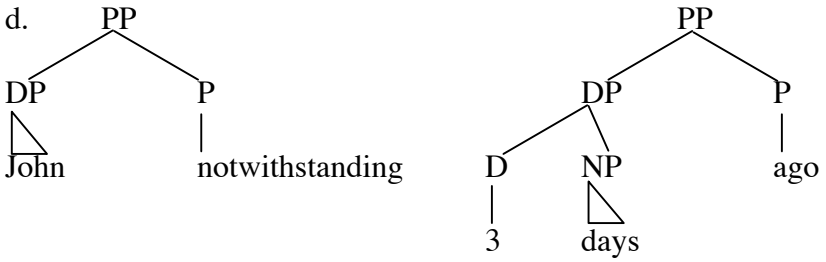
(88) a. I know [$_{S'}$ what [$_{S}$ John says [$_{S}$ you did *e* last summer]]]
b. I know [$_{S'}$ what [$_{S}$ John says [$_{S}$ Bill thinks [$_{S}$ you did *e* last summer]]]]
...
c. *I know [$_{S'}$ when [$_{S}$ you put *e* on the table]]
d. *I know [$_{S'}$ what [$_{S}$ John heard [$_{NP}$ Bill's claim [$_{S}$ that you did *e* last summer]]]]

→ a derivational, compositional theory can guarantee this, *and* get the 'embedded question' semantics right automatically (we have a good one on offer); I don't see any way that the idiom-based theory can without recapitulating the derivational one.

(89) A non-example: Fillmore's form-violating Ps in English
a. *notwithstanding* [John notwithstanding], we will go tomorrow
b. *ago* John left [3 days ago]

c. Fillmore: Perhaps these are idiomatic postpositions, although English is otherwise rigidly prepositional?

d.

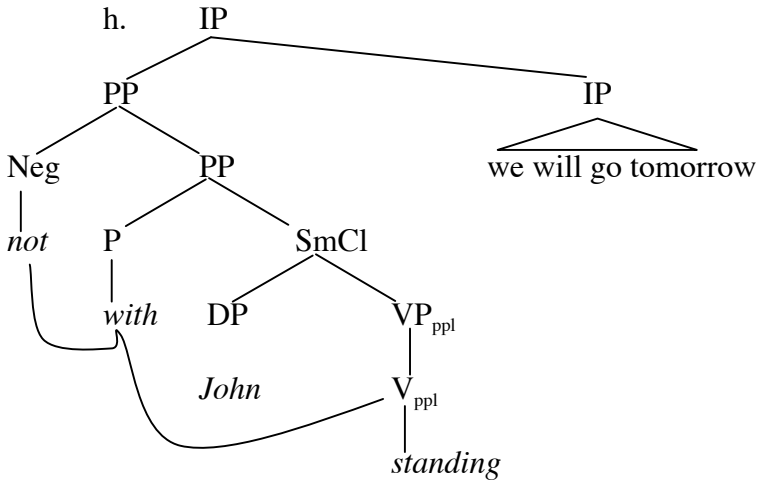


e. Williams: That's not right; there are intransitive prepositions in English
→ These are just intransitive prepositions with a specifier — small clauses
→ other cases: *John aside; That noted*, *Bill having left,*
→ Intransitive prepositions can be modified/specified like transitive ones:
I threw the ball [completely across the street]
I pushed John [completely aside]
f. Trick with 'notwithstanding' — it only goes in these kind of absolutive small clauses, not anywhere else. (*I think John's notwithstanding)
g. Williams' proposal: 'notwithstanding' is attached to some structure, like an idiom, which restricts it to a certain syntactic environment
h. At this point, these 'idioms' are starting to look like subcategorization frames... as long as they don't predict special results for composition, an innocuous addition to the morphosyntactic info attached to particular lexical items. 'Notwithstanding' is interpreted compositionally in this structure...

(90) An alternative proposal for 'notwithstanding'
a. In fact, 'notwithstanding' has a very clear morphemic breakdown
b. It's not an accident that it is restricted to these 'absolutive' contexts
c. 'With' + participle is the usual way to introduce such contexts in English
d. [With [[his entourage] [clearing the way]]], the star navigated the party.

e. It's not even much of a metaphor to think that 'standing' can be understood as 'in the picture', 'actively present', 'relevant'.
f. 'Not standing' is then 'not in the picture' 'irrelevant' 'aside'
g. Semantics aside, assuming the morphemes project a normal absolute and undergo a little incorporation/lowering to became a phonological word, we don't have to assume much of anything special to explain the distribution of 'notwithstanding' — absolute phrases *quite generally* only occur in that presentential position — it's not a fact about this one in particular.

h.



i. One possible objection: you can't normally negate an absolute clause:
* Not with Mary sleeping, I am free to play the piano
j. This might be a fact about their semantics, though... exchanges like this are definitely extremely frequent:
A: I'm going to play the piano.
B: Not with Mary sleeping, [[you're not] [going to play the piano]]

→ anyway, whether or not *notwithstanding*'s distribution is part of a larger pattern of facts about English absolute clauses, Williams doesn't think it's really an example of a 'form' idiom
→ ditto for 'ago' (which I also think has a more decompositional analysis, but I'll spare you it)

(91) Williams adopts the view attributed to Jackendoff by McGinnis: that the semantic interpretation of an idiom violates theta structure.
(92) Idioms differ in their transpacency:
a. *They kicked the buckets. (but ok 'bucket', sg.)
b. We'll cross those bridges/that bridge when we come to it.
(McGinnis's passivizable idioms, too)

(93) For Williams, this is not arbitrary; it's because the 'meaning of kick the bucket' is intransitive — the 'gloss' of 'kick the bucket' is an intransitive v, while the 'gloss' of 'cross those bridges' is transitive.
→ Really need a good survey of idioms and their interpretations to justify this
What about cases like 'keep tabs on X'? 'pass the buck'?
a. **The FBI kept a tab on Jane Fonda.* (intended: a little watch)

b. *keep tabs on* = 'watch' 'survey'
c. *tab* not modifiable, no place in argument structure of gloss for some metaphorical interpretation of *tab*
d. Yet: *Tabs were kept on Jane Fonda* is generally accepted
e. **John passed the bucks on every difficult decision he was handed*
f. Yet: The buck kept getting/was passed all the way to the president.

→ might be some correlations, but really needs investigation. What *is* the cutoff between metaphor and idiom, anyway?
→ McGinnis argued that such questions were irrelevant w/r to whether the aspectual consequences were still there or not.

(94) 'Idioms' as morphological irregularities
pluralia tantum
→ all words for 'lower trunk wear' are marked for mandatory pl
(note annoying bathing-suit example... at least half the populations' bathing suits never have been lower-trunk wear...though no doubt that's just an accident of cultural mores)

(of course, there are other pluralia tantum, mostly to do with tools of a certain bipartite shape; that'd just be another idiom

→ this kind of information (like subcategorization frames) is usually thought of as 'idiosyncratic' morphological information, connected to individual morphemes. Williams is noting that the idiosyncracies are connected to meaning patterns, which makes them 'idiomatic'...

→ possible connection to Wedel's neighborhood-connections research?

→ this seems to be an *exceptionless* property of pants-nouns -- a paradigm effect?

A silly example:
"Fish names, with some exceptions, are all unmarked plurals or have that as an option: *trout, bass, perch, bream, yellowtail, mahimahi*. The exceptions are not really fish, by and large: *whale, guppy, minnow*. Other animal families are untouched by this idio- syncracy: *bee, wasp, ant*. As far as I can tell, this is an unpredictable, but very general fact about English, and counts as 'idiomatic' information about the language."

More to do with food animals than with fish in general.

(95) Grammatical idioms:

→ French allows V-N agentive idioms 'wipe-window'
→ English doesn't 'window wipers'
→ Williams takes this to be an 'exploitation of the syntactic system' -- these are VP NPs
(Some kind of strange leakage between the syntactic & morphological systems here)
→ in a one-system theory, the question of why English does things one way & French another can't be answered by saying that English builds compounds in the lexicon while French builds them in the syntax

→ some other locus of difference must be postulated
→ getting to a very broad idea of 'idiomatic' now -- much closer to 'idiosyncratic' properties of grammar.

(96) Syntactic idioms

→ Free relatives built on [what N' S] have a 'not much' reading
→ Free relatives without the N' don't have such a reading

a. I gave him what food I had ≠ 'the food I had'
b. I gave him what I had = 'that which I had'
c. I put what money I saved in a savings account. ≠ 'the money which I saved'
d. I put what I saved in a savings account. = 'that which I saved'

If in the relative paraphrases in a & c we inserted the word 'little', the synonymy would be good.

→ "This is a learned fact about this structure"

[What [N' S]] ← : the little [N' S]

→ This is an interesting example.
→ One wonders about parallel structures in other languages — do they have this implication?
→ To me, this has the feeling of an implicature kind of thing; don't know if that's remotely plausible. What about, “That which I had”?

(97) Another interesting example

Conditional inversion:
→ Had I been there, this would not have happened
= "If I had been there, this would not have happened"
→Were I a better person, I'd write more thank-you notes
= "If I were a better person, I'd write more thank-you notes"

Inversion for yes/no or exclamative purposes can normally apply to all auxiliaries
→ Can he talk?
→ (Boy,) Can he (ever) talk!
→ Could she write?
→ (Boy,) Could she (ever) write!
→ Will she go?
→ (Boy,) Will she (ever) go! (a little odd in the future, but ok given enough context)
→ Did he sing?
→ (Boy,) Did he (ever) sing!
→ Would she help in that situation?
→ (Boy,) Would she (ever) help in that situation!

But for conditional inversion, it's restricted to *had* and *were*.

→ *Could I write poetry, I would not be a linguist (actually ??, or +literary, for me)

If I could write poetry, I would not be a linguist
→ *Did I sing, I would not have been allowed to dance. (ditto)
If I sang, I would not have been allowed to dance.
→ *Can he go, I should be allowed to go too.
If he can go, I should be allowed to go to.
→ *Would she help, I would help too. (ditto)
If she would help, I would help too.

'What is learned is that not all the formally allowed possibilities are realized'

He introduces the 'instance principle'

If a form to which a meaning is assigned has listed subinstances, then those subinstances are exhaustive.

→ this is confusing to me. I think it applies to the inversion case as follows:

$[V\ S]_s$ ← 'conditional' iff V = {had, were}

the 'instance principle' adds the 'only if' part to the entry.

(98) Idiom families

→ Language-particular idiom patterns, e.g N_x P N_x

side by side
one on one
man to man
minute to/by minute
head to head
house by house
layer on layer
dollar for dollar

('Japanese lacks them entirely' -- of course in Japanese they'd be N_x N_x P, because Japanese has postpositions; I imagine that Everaert controlled for that)

cheek by jowl
pillar to post

... not sure why he finds these so structurally unusual, settling on a bipartite structure
...after all, he pointed out above that prepositions can have specifiers
...though certainly the lack of determiners is both characteristic & very odd in English
...though 'bare location Ns' are a common enough phenomenon

→ "their properties are not entirely explicable in terms of the general principles of the grammar...So these remain idiomatic; however, they are idiomatic as a class, not as individuals."

(99) Another example: the HUNT ANIMAL construction
hunts bear *hunts sleepy bear
John snares monkey
traps rabbit
(??fishes salmon)

→ you get to use a bare NP as long as a) the verb is untensed/habitual? (*?Bill hunted bear this morning*.) b) the verb is a hunt-type verb and c) the NP is an appropriate animal

→ though i'm not sure I agree with this exactly. 'Bear are holed up here for the winter' sounds fine, as does 'Rabbit come around in the winter time' ... seems like the idiomatic info is just that game animals have available bare plurals; the 'hunt' verb isn't necessary.

→ kind of like the pluralia tantum cases

→ We're beginning to touch on what Kiparsky called the 'Canonical Use Convention'

(100) One final note: positing suffixes (section 4)
happy, dainty, pretty, crabby, surly...
fishy, lumpy, lucky, wriggly...

'-y' is a good clue to adejectivehood even when it's not attached to an independent stem

altitude, attitude, platitude..

'-tude' is an unmistakable clue to nounhood, though it's not attached to an independent stem

[Aside: Despite not being attached to any independent stems 'officially', it's totally productive:

" The concept of "**Coolitude**" of course parallels that of **'Negritude'**, pioneered by Clive James and other African and Caribbean intellectuals in the 1950s. "
(from a site about Indian labor — 'coolies')

"**Groovitude**: A Get Fuzzy Anthology" by Darby Conley

from an online fanfic website:
"*Parallels*, in which Sirius attempts to explain the **jerkitude** of fifteen-year-old boys to Hermione."

From another online story website:
The first, and much more numerous of these types were the grumps.... This second type were the imps.... As with anything, there are only degrees of **impitude** or **grumpitude**. The great majority of people possess a tendency towards either impism or grumpism.

→ why should the independence of the stem matter?
→ Surely the point of *transmission* or *kick the bucket* and especially *kit and **caboodle*** is that 'formal' interpretive properties aren't dependent on having an independent encyclopedic interpretation
→ *-ion* is still a noun-forming suffix even in *transmission,* just as *kick* is still a verb even in *kick the bucket*.
→ Why shouldn't *-y* be the adjective-forming suffix even in *happy*, despite the fact that the stem *happ-* isn't anything on its own?

→ In DM, root morphemes can be so defined that they have interpretations *only in a certain context*; their semantic independence isn't necessarily the only clue to their morphosyntactic status.
→ sound/structure correspondences are probably at least as good.

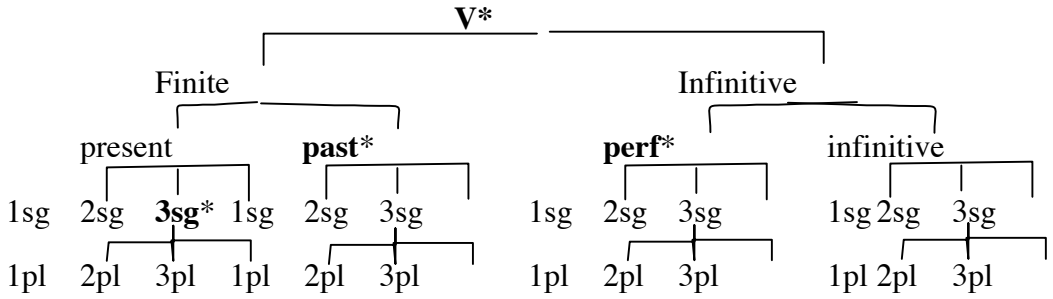
7.2 On to the real matter at hand: Paradigms:

"To consider only the first of these: if there are two rules for filling a slot in a paradigm, only one may be used; thus, we have *bit,* not *bited,* and in general, only a single past tense form for a given verb, despite multiple ways to form past tenses. This reveals that there is a target slot to fill, which is independent of the rules for filling it, and that slot is given by the paradigm."

→ Argument that syncretism motivates realization (via underspecification). DM equivalent is the notion that positions-of-exponence are necessarily associated with each terminal node in a tree.

→ Williams' treatment of features: hierarchical arrangement of features, plus specification of 'entry points'. Terminal nodes not specified for entry points will be syncretized (i.e. impoverished) to the next highest distinct 'entry point' on the tree.

(101) *Write*

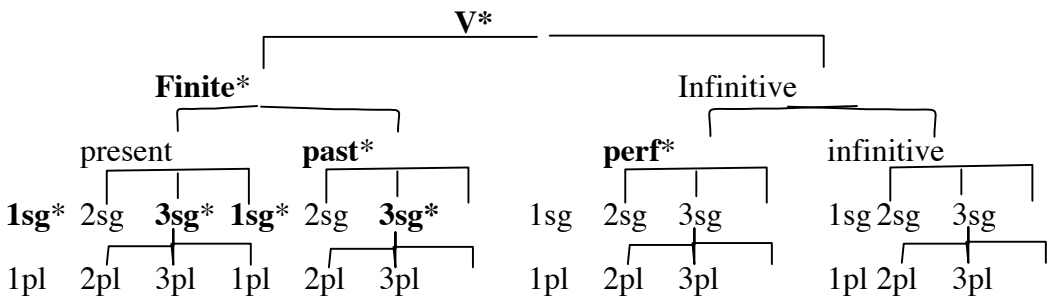


V* = *write*, past*=*wrote*, 3sg* = *writes*, perf*=*written*

→ his example 'run' is badly chosen (no entry point at perf*, since perf. ppl = *run*)!
→ Also, note that he's omitted *writing* from the paradigm — presumably that would fit under 'Infinitive' somewhere.

What about for *be*, the most complex English verb?

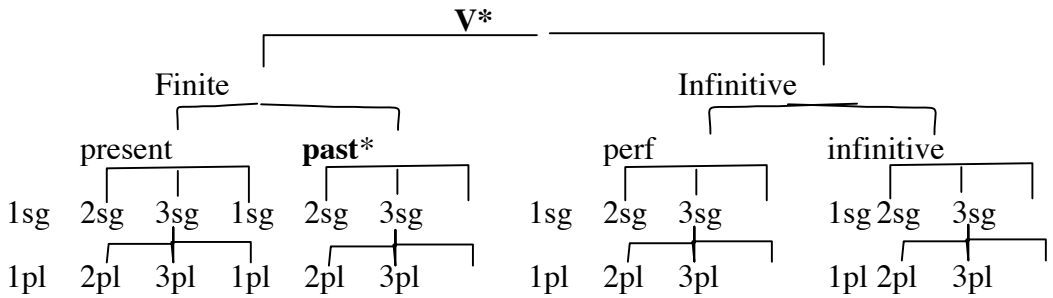
(102) *Be*



(pres) 1sg* = *am*, (pres) 3sg*=*is*, (past) 1sg*=*was*, (past) 3sg*=*was*, past*=*were*, finite*=*are*, perf*=*been*, V*=*be*.

→ All other English verbs take a subset of these entry points for their own use:

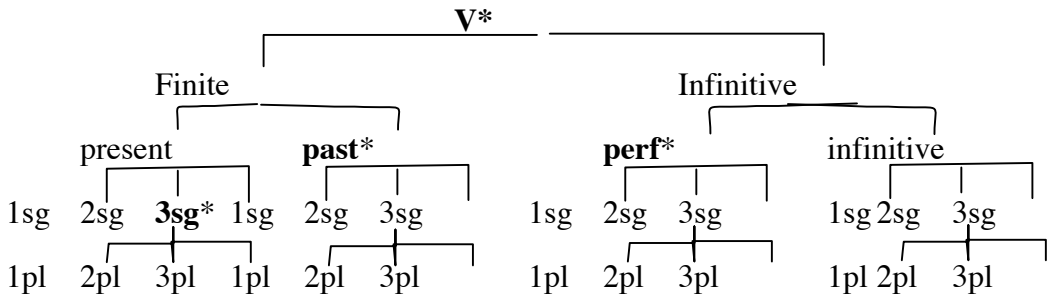
(103) Modals:



V* = *can*, past*=*could*

→ (note peculiar problem with absence of infinitive forms entirely, not 'inheritance')

(104) Go, regular verbs



V* = *go*, 3sg*=*goes,* past*=*went*, perf*=*gone*
V*=*walk*, 3sg=*walks*, past*=*walked*, perf*=*walked*

→ (as with 3rd past forms of *be*, problem with uncaptured syncretism between past and perfective forms).

Williams writes:

"As can be seen, the sets of entry points form a nested set; the verb *be* shows the most distinctions, and consequently has the most entry points, but all other verbs, including all irregulars, have some subset of the entry points of *be*. It is far from obvious that such a relation should exist - if a verb is going to be irregular, why should it not be irregular in having a different pattern of syncretism, a different set of entry points? But this does not happen, even irregular verbs respect the pattern of the language as a whole. In fact, even suppletive verbs, the limiting case of irregularity, respects the pattern of syncretism; the verb go has went as its past tense form. Things could have been different: *went* could have been the third past plural form, with *goed* (or something else) for all the other forms; but then, *go-went* would have violated the language-wide pattern of syncretism."

→ All paradigms within a given class in a langauge, then, should be like nested boxes: one big box with some distinctions (e.g. the modals), containing littler boxes that might make other distinctions (e.g. the regular verbs), containing littler boxes making more distinctions (e.g. the verb *be*) etc.

→ Because of the way he thinks acquisition works, he thinks there will always have to be a most-specified paradigm, that is, that some verb should exist in the language that makes every featural distinction that that language uses. He calls this the 'Instantiated Basic Paradigm' requirement.

8 Bobaljik (2002): Syncretism without Paradigms

→ What can a theory with paradigms do that a theory without paradigms can't?

→ Williams (1994) says that a language can have a *meta-paradigm*, a sort of maximal feature-space that captures patterns of syncretism across different paradigms of the same lg. Consider:

(105) Russan meta-paradigms for nominative & dative pronouns, and nominative adjectival inflection:

3rd person NOM pronouns

	Sg	Pl
Masc	on	on-i
Fem	on-a	on-i
Neut	on-o	on-i

3rd person DAT pronouns

	Sg	Pl
Masc	emu	im
Fem	ej	im
Neut	emu	im

NOM adjectival endings:

	Sg	Pl
Masc	-yj	-ye
Fem	-aja	-ye
Neut	-oe	-ye

Notice that no matter what the actual vocabulary items are, there's a generalization about the paradigms: gender distinctions are neutralized in the pl. Williams' idea is that there is such a thing as a *meta-paradigm*, which Russian stores as a constraint on its inflectional structure for nominal agreement:

(106) Russian nominal agreement Meta-Paradigm

	sg	pl
masc		
fem		
neut		

(aside: unlike many theories, including his own of 6 years earlier, Williams 1994 is also an 'interpretive' morphologist, in this instantiation—his vocab items realize syntactic feature structures, they don't provide them).

→ Williams thinks this is a problem for Vocabulary-Based theories of inflection, because all the vocab items that are being spelled out in the different paradigms are distinct. Consequently, the fact that the lists of vocab items which are suitable for realizing a particular slot all have exactly the same structure is just a coincidence. Below is the analysis given in Halle 1997:

(107) Russian nom. agreeement VIs:

3rd person NOM pronouns			3rd person DAT pronouns		
/i/	↔	[+pl]	/im/	↔	[+pl]
/a/	↔	[+Fem]	/ej/	↔	[+Fem]
/o/	↔	[+Neut]	/emu/	↔	Elsewhere
/∅/	↔	Elsewhere			

NOM adjectival endings

/ye/	↔	[+pl]
/aja/	↔	[+Fem]
/oe/	↔	[+Neut]
/yj/	↔	Elsewhere

Here there are two big questions.
(A) First, it's crucially the ordering of [+pl] before the gender-specific affixes that leads to the syncretism of gender in the plural, but according the usual feature-counting metric for deciding ordering, the non-elsewhere forms have identical numbers of features.

(B) Second, William's question: it really looks like a non-accidental property of Russian that *in general*, gender is gone in the plural. But here it's an accident. Any one of these groups of forms could either re-order some of these VIs, or introduce a new one with no consequences for the other forms. Is there any equivalent of a Meta-Paradigm in DM?

It could be the case that the ordering of VIs realizing [+pl] features before VIs realizing gender features could arise from either a feature hierarchy à la Noyer (1997), or from a feature geometry like Harley&Ritter (2002). That would answer both of the above questions at once, with no paradigms necessary. But that won't help with some more complicated cases. Consider Macedonian verbal agreement:

(108) Macedonian paradigm for *padn-*, 'fall' (from Stump 1993):

	present	past(impf)	past (aorist)
1sg	padn -am	padn-e-v	padn-a-v
2sg	padn-e-ʃ	padn-e -ʃe	padn-a
3sg	padn-e	padn-e -ʃe	padn-a
1pl	padn-e-me	padn-e-v-me	padn-a-v-me
2pl	padn-e-te	padn-e-v-te	padn-a-v-te
3pl	padn -at	padn-e-a	padn-a -a

Here, across multiple suffixes, 2nd and 3rd person sg—distinct in the present—become syncretized in the past. So for two separate suffix positions in a single paradigm, this syncretism holds. Further, it's not clear that a feature hierarchy could help here.

→ The DM equivalent to Williams' Meta-Paradigm: Impoverishment Rules

→ if the morpho-syntactic terminal nodes are subject to language-wide Impoverishment rules prior to vocabulary item insertion, then we expect syncretism of this type to be in effect language-wide.

(109) Russian Impoverishment:

Gender → ∅ / [___, +pl, +NOM]

(110) Macedonian Impoverishment:

2 → ∅ / [+sg, +past]

This will have exactly the same effect as the postulation of a Meta-Paradigm. Adding Meta-Paradigms to your theory vs. adding Impoverishment Rules to your theory is really six of one, 1/2 dozen of the other. Same gain in explanatory adequacy, same degree of additional complication.

H&M's Potawatomi analysis showed a similar 'bleeding' effect of an Impoverishment rule.

(111) Any arguments for paradigms *qua* paradigms out there?

Williams: the Basic Paradigm Requirement

> When there are multiple related paradigms, there will be one instantiated paradigm, and all others will have its syncretic structure, and perhaps some more. But no other related paradigm will have a contrary syncretic structure, making distinctions where that one does not. We will call that one paradigm the **basic** paradigm.

In essence, this says that all the related paradigms of a lg. will be modelled on one paradigm which makes the most distinctions. No other paradigm will make more or different distinctions than the basic one.

(112) **Prediction**: In a language where a paradigm-specific syncretism creates a pattern of forms as in (a), there will *always be some other paradigm* as in (b) that makes the full three-way distinction—there will always be a 'basic' paradigm.

a)

	F4	F5
F1	A	C
F2		D
F3	B	

Here, the morphological evidence for an F2 distinction is an intersection of the patterns in F4 and F5 — there is no form which realizes F2 unambiguously.

b)

	F6
F1	A
F2	B
F3	C

Here there is an unambiguous form which realizes F2 unambigously

(113) Bobaljik's Counterexample: Russain Nominal Declension:

	m.sg.N anim	m.sg.N inan	pl anim	pl inan	pl.Adj anim	pl.Adj inan	f.N	f.poss. pron.	f.Adj
NOM	-∅	-∅	-y	-y	-yje	-yje	-a	-a	-aja
ACC	-∅	-a	-y	-∅	-yje	-yx	-u	-u	-uju
GEN	-a	-a	-∅	-∅	-yx	-yx	-y	-ej	-oj
INST	-om	-om	-ami	-ami	-ymi	-ymi	-oj	-ej	-oj
DAT	-u	-u	-am	-am	-ym	-ym	-e	-ej	-oj
PREP	-e	-e	-ax	-ax	-yx	-yx	-e	-ej	-oj

→ Notice: there's no Basic Paradigm: in the f paradigms, where Nom and Acc are unambiguously distinguished, the Dat and Prep distinction is neutralized. In the m. paradigms, where Dat and Prep is distinguished, Nom and Acc are cross-classified.

Conclusion:

Meta-paradigms and Impoverishment rules accomplish the same thing with the same degree of additional cost to the theory

One independent argument for the presence of paradigms, the Basic Paradigm Requirement, can be directly falsified.

9 Longtin: Morphological Priming Without Morphological Relationship

Priming studies:

Visual only: masked visual prime, not perceived consciously
→ get purely morphological effects
→ even pseudo-morphological effects ('affix stripping')
(Forster et al)

Cross-modal: auditory prime, perceived consciously
→ don't get pseudo-morphological effects, or affix-stripping effects
→ only seem to get morphological effects when they're semantically useful
(Marslen-Wilson)

→ This study: do both kinds of priming
→ Innovation: compare 'truly affixed' but opaque forms (morphological 'idioms', e.g. *lax~laxative*) with 'pseudo-affixed' but opaque forms (back-formed 'idioms' e.g. *corn~corner*) with orthographic primes (matching substring e.g. *dial ~ dialect*) (as well as affixed and compositional forms, e.g. *white ~ whiten*)

(1) Transparent:	gaufrette/GAUFRE	''wafer/waffle''.
(2) Opaque:	fauvette/FAUVE	''warbler/wildcat''.
(3) Pseudo-derived:	baguette/BAGUE	''little stick/ring''.
(4) Orthographic:	abricot/ABRI	''apricot/shelter''.

> "In order to ascertain the semantic relationship between primes and targets in the initial selection, we first used ''Le Nouveau Petit Robert'' dictionary (Rey-Debove & Rey, 1993) with the following criteria: definitions of the derived transparent words had to include either their morphological base word, or the word(s) used in the definition of this base. Conversely, definitions of opaque and pseudo-derived words could not include their etymological or apparent base word, nor could they include the words used to define that ''base''."

TABLE 2
Experiment 1: Average RT (ms) and errors rate according to relation type and to priming relation, and priming effect in ms. Standard deviations are shown in parentheses

		Priming relation				
		Unrelated		Related		Difference
Relation type		RT	Errors	RT	Errors	
Transparent	gaufrette/GAUFRE	650	3.48%	612	1.45%	38
		(86)		(70)		
Opaque	vignette/VIGNE	653	2.03%	610	1.69%	43
		(90)		(64)		
Pseudo-derived	baguette/BAGUE	639	4.04%	613	3.85%	26
		(81)		(77)		
Orthographic	abricot/ABRI	672	7.58%	698	11.42%	-26
		(92)		(82)		

→ Orthographic relatedness slowed them down; all other relatedness including pseudo-derived sped them up.

Those results show that in French, there is no effect of semantic opacity in masked priming, since both transparent and opaque pairs behave the same way, as in English or Hebrew. Pseudo-derived pairs behave the same way as opaque pairs do, and not as orthographic controls. The marginal inhibition effect obtained for orthographic controls suggests that the effects for transparent, opaque, and pseudo-derived pairs are morphological in nature and not ortho-graphic. … The simultaneous presence of a root and a suffix seems to be critical to obtain a facilitation effect in masked priming.

TABLE 3
Experiment 2: Average RT (ms) and error rates according to relation type and to priming relation, and priming effect in ms. Standard deviations are shown in parentheses

		Priming relation				
		Unrelated		Related		Difference
Relation type		RT	Errors	RT	Errors	
Transparent	gaufrette/GAUFRE	666	3.88%	628	0.62%	38
		(104)		(93)		
Opaque	vignette/VIGNE	642	(3.66%)	651	1.53%	-9
		(82)		(105)		
Pseudo-derived	baguette/BAGUE	651	(4.57%)	662	3.23%	-11
		(89)		(111)		
Orthographic	vendredi/VENDRE	693	6.35%	705	5.32%	-12
		(120)		(109)		

→ Crucial conclusion: the auditory prime lasts longer, is consciously perceived and correctly interpreted. Other words whose semantic entry is not related to the prime might have had their morphological similarity trigger a brief activation, as in the masked priming paradigm, but the auditory prime lasts long enough for that activation, since it's not semantically useful, to be suppressed again by the full activation of the correct lexical entry. Consequently by the time the target is presented, only semantically related words will still be primed.

> We propose instead a prelexical decomposition process which, crucially, is sensitive to the simultaneous presence of a root and of an affix, that is, which is potentially triggered by surface level morphology.

→ Tricky thing: Despite Marslen-Wilson's original results, later findings show that Semitic lgs seem to show cross-modal priming even for morphologically opaque pairs.

→ something to do with having to look up roots no matter what (encyclopedic knowledge attached to roots?) Or because the writing system mostly annotates consonants—literate speakers have a LOT of training on extracting the consonantal root?

10 Pfau 2000: DM as a psychologically real model

(114) Errors as evidence about the grammar? Aren't we supposed to exclude from consideration, during theory-construction…

> "such grammatically irrelevant conditions as [a] memory limitations, [b] distractions, shifts of attention and interest, and [c] errors (random or characteristic) in applying his [i.e. the speaker/listener's] knowledge of the language in actual performance." (Chomsky 1965:3)

a) Don't want to build the grammar in such a way as to exclude a 2000-word sentence, though they don't occur. Ditto for center-embedding: *The rat the cat the dog chased bit died.*

b) Don't want to build the grammar in such a way as to predict that an utterance of the form *Without this kind of—*[speaker interrupted by a loud crash, stops talking] is fully grammatical as it stands.

c) Don't want to predict in the grammar of the phonology of English that [ʃp] clusters are grammatical, just because they occur, e.g., in the speech of drunken English speakers. Similarly, we wouldn't want to say that an English sentence of the form *They're just clouds that are been diverting* is well-formed even though it might occur in spontaneous speech on some occasion.

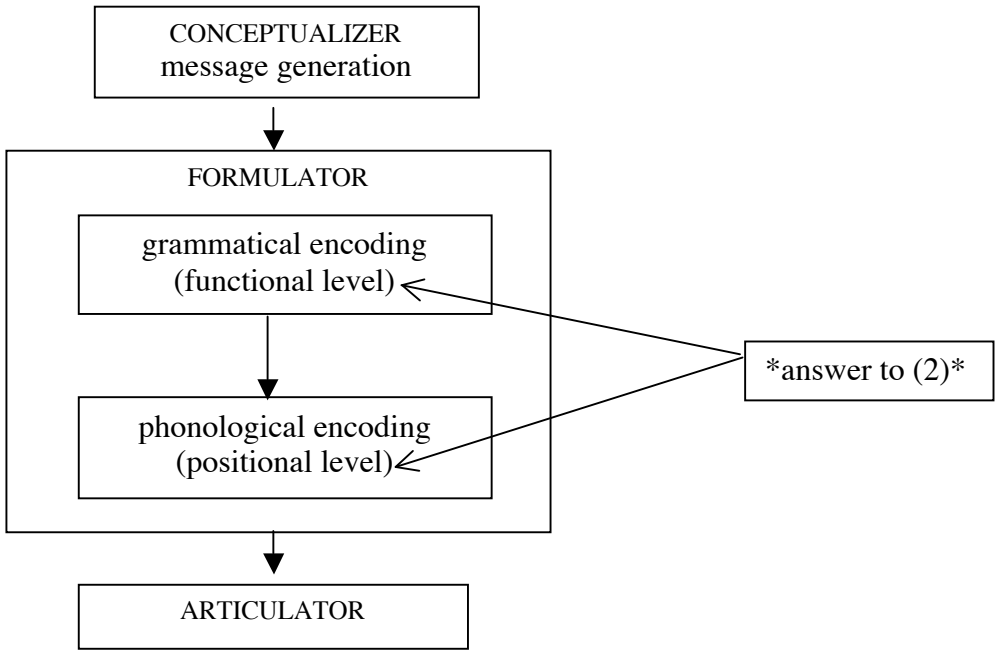
→ BUT — presumably we would like to understand the relationship between competence and performance in such a way that we can *explain* a), b) and c). The cases in a), b), and the first in c) are pretty intuitively understandable. Pfau is about proposing a particular production model -- complete with a competence model built in -- that can explain errors of the second kind in c).

10.1 Production models and speech errors

Extant models of language production: Garrett (1975), Levelt (1989): phonological encoding is the last step of the production process.

After you 'conceptualize' what you want to say, production proceeds by selection of lemmas — abstract morphosyntactic features & concepts, computation with them, and then 'phonological encoding' —spell-out.

(115) Levelt 1989:



→ Motivation for Garrett, Levelt: errors in the production process can occur at the pre-phonological level (the 'lemma' level of grammatical encoding), implicating syntactic and semantic features, and at the phonological level, implicating phonological features.

Lemmas: units which are only semantically and syntactically specified

Garrett's original motivation: different kinds of exchange speech errors: 'Word exchanges' respect category and cross phrase boundaries; 'sound exchanges' don't care about category and happen within phrases. (*answer to 1*)

(116) a. this spring has a seat in it ← this seat has a spring in it.
b. he **c**aught **t**orses ← he **c**aught **h**orses

Idea: these exchange errors happen at different levels: one where grammatical info (like category) is processed; one where phonological info (like onset/rhyme structure) is processed.

(117) A **maniac** for **weekend**s ← A **weekend** for **maniac**s

Here, the stem has been substituted without the pl. suffix, so obviously the unit of exchange is not the phonological word. Not only that, the pl. suffix changed its pronunciation appropriately, according to the phonological allomorphy rules of English — phonological processing happened after the switch.

→ more broadly: it's clear that substitutions can be triggered by semantic similarity, or by phonological similarity:

(118) *semantic*:

a.	Alkohol	for	Kalorien
	alcohol		calories
b.	belt	for	collar
phonological:			
c.	Urwald	for	Urlaub
	jungle		holiday
d.	apartment	for	appointment

Errors at the lemma-retrieval level were like a-b, errors at the phonology level were vocabulary-retrieval errors, like c-d.

Look familiar?

10.2 A typology of speech errors:

exchange errors: some element is switched with some other element from the same utterance (when phonological, these are Spoonerisms)
John saw the **mall** at the **movie** ← ..the **movie** at the **mall**
You have **h**issed ten of my **m**ystery lectures ← **m**issed ten of my **h**istory lectures

substitution: a wrong element shows up, replacing the intended element
He got hot under the **belt** ← ...under the **collar**
I've got an **apartment** now ← ...an **appointment**

anticipation: an intended element shows up sooner than it should have.
The bonsai did**n't** die because I watered it ← ...died because I did**n't** water it
Ils ont co**l**vo**l**é en justes noces ← ils ont co**n**vo**l**é en justes noches
"they have married in correct weddings"

perseveration: an intended element from earlier in the sentence is repeated later in a wrong place
er hat fünf Punkt**-e** Vorsprüng**-e** ← fünf Punkt**-e** Vorsprung
he had five point-s lead-s ← five points lead
W**o**hnt er in K**o**sel, äh, in Kassel?
lives he in Kosel, er, in castle?

(SVA) agreement errors: the wrong DP triggers agreement on some agreeing element, e.g. a verb
The full **impact** of the **cuts have**n't hit hard yet ← ...**has**n't hit hard yet

→ Side note: The early discussion of agreement errors suggests interesting possibilities with respect to the notion of 'workspace'-based processing—relative clauses or adjunct PPs (with plural DPs inside Johnson 2004's 'renumerated' complex phrases) might be predicted to trigger fewer SVA errors than argument PPs or complement clauses, perhaps…

10.3 Key support: 'accomodation':

→ Different kinds of accommodation:

(119) Cases of phonological accommodation (German, French, Dutch)

a. wohnt er in Kosel, äh, in Kassel ?
lives he in Kosel, er, in Kassel

b. ils ont colvolé en justes noces
← ils ont convolé en justes noces (Rossi & Defare 1995:7)
they have married in right wedding(celebrations)

c. pankeren ← kamperen (Cohen 1965:183)
to camp

(120) Cases of morphological accommodation (German, English)

a. er war nur darauf aus, seine Befriedig-**ung** zu bedürf-en
he was only interested in his satisfy-N to need-INF
← sein Bedürf-nis zu befriedigen
← *his need-N to satisfy-INF*
"He was only interested in satisfying his need."

b. I think it's care-**ful** to measure with reason
← it's reasonable to measure with care (Fromkin 1973a:31)

c. ge-monat-ete Arbeit-**en** ← gearbeitete Monat-e
month-PART work-PL ← *worked month-PL*

(121) Cases of morphophonological accommodation (English, Arabic, Turkish)

a. track cow-**s** [z] ← cow track-s [s] (Fromkin 1973a:27)

b. give **the** nipple **an** infant ← the infant a nipple (Garrett 1976:238)

c. fii _aay fi **s**-sukkar ← sukkar fi _-_aay
there tea in ART-sugar ← *sugar in ART-tea*
"there is sugar in the tea"
(Abd-El-Jawad & Abu-Salim 1987:149)

d. ev-**in** adam-~~**i**~~ ← adam-~~i~~n ev-i
house-GEN man-POSS.3.SG ← *man-GEN house-POSS.3.SG*
"the house of the man"

(122) Cases of morphosyntactic accommodation (German, Spanish, English)

a. wie man **eine** Nadel in **den** Faden kriegt
how one a.f needle(f.) in the.m thread(m.) gets
← einen Faden in die Nadel
← *a.m thread(m.) in the.f needle(f.)*

b. **un** duro de veinte moneda-s
a.m 5.pesetas(m.) of twenty coin-PL
← una moneda de veinte duro-s
← *a.f coin(f.) of twenty 5.peseta-PL*
"a one hundred pesetas coin" (Garcia-Albea u.a. 1989:152)

c. sie war 21, als ich gestorben **bin**
she was 21 when I die.PART be.1.SG
← ich war 21, als sie gestorben ist
← *I was 21 when she die.PART be.3.SG*

d. you'**re** too good for that
← that's too good for you (Stemberger 1982a:344)

→ Note that within the theory of these errors that Pfau is going for, morphological and morphosyntactic accommodation are of the same basic type.

→ Given the structure of the model, errors made at the lemma level should result in accomodation, i.e. spell-out and pronunciation of the terminal nodes by vocabulary items appropriate for the environment created by the error, rather than for the intended environment.

(123) Zillions of cases of this, of lots of different kinds

number (and umlaut)

a.	ein	Buchstabe	ist	vier	W**ö**rt-**er**	lang
	a	letter	is	four	word-**PL**	long
		for				
	ein	W**o**rt	ist	vier	Buchstabe-**n**	long
	a	word	is	four	letter-**PL**	long

b. ge-monat-ete Arbeit-**en**
PRT-month-PRT work-PL

for

ge-arbeit-ete monat-**e**
PRT-work-PRT month-PL

gender

c. igrendwie habe ich heute ein**e** Zunge **im** Knoten
somehow have I today a.FEM tongue.FEM in.the.MASC knot.MASC

for

…ein**en** Knoten **in der** Zunge
…a.MASC knot.MASC in the.FEM tongue.FEM

'negation'

d. er hat **nicht** gesagt, dass es möglich ist, ich meine,
he has not said, that it possible is, I mean,

er hat gesagt dass ess **un**möglich ist.
he has said that it impossible is.

e. I **dis**regard this as precise for I regard this as **im**precise

do-insertion

f. The bonsai did**n't** die because I watered it
for
The bonsai died because I did**n't** water it.

tense-conditioned stem changes

g. I don't know that I'd **hear** one if I **knew** it
for
I don't know that I'd **know** one if I **heard** it.

suppletion

h. you**'re** too good for that
for
that'**s** too good for you

tense-conditioned allomorphy

i. they're just clouds that are be**en** divert**ing**
for
…that are be**ing** divert**ed**

nominalizing, adjectivalizing, verbalizing affixes:

j. er war nur darauf aus, seine Befriedig-**ung** zu bedürf-en
he was only interested in his satisfy-NOM to need-INF

for

… sein bedürf-**nis** zu befriedig-en
…his need-NOM to satisfy-INF

k. I think it's care**ful** to measure with reason.
for
I think it's reason**able** to measure with care.

count-mass substitutions

l. Soll ich schon **die Brötchen** aufsetzen?
Shall I already the roll.PL put-on?
for
….**den Kaffee**…
…..the coffee

m. …viele **Briefkästen** in meiner **Post**
…a lot of mailbox-PL in my mail
for
….viel **Post** in meinem **Briefkasten**
a lot of mail in my mailbox.SG

This type of error accomodation falls out naturally in a DM-based/Levelt-style framework—the stems/roots or other terminal nodes are exchanged in the morphosyntax, and the attendant effects on vocabulary item insertion fall out.

Lexicalist architectures can't explain these effects in a natural way (not that most of them would try to, not models of production). In particular, if you're dealing with actual phonological pieces before you get to your syntax, all the way through, you either
a) can't imagine dissecting a word in the above ways
b) wrongly predict that it should be actual affixes which are stranded, not features
c) have to put all the error-generation in the morphological component or
d) have to account for these effects via a fairly costly process of uncreating a non-accomodated wrong form and replacing it with an accomodated, but still wrong form. ("Costly error-repair processes") This latter very unlikely, though, for the agreement-type errors as in, e.g., (c) above.

10.4 Looking at some individual elements/patterns:

Lemmas, roots and meaning-based errors:

→ First thing: gotta have some way of saying that you look up the lemma for 'dog' rather than the lemma for 'cat'; and can make mistakes with that lookup process; otherwise, how to explain semantically-triggered substitutions like 'calorie' for 'alcohol', or apparent semantically-based perseverations and anticipations like these?

(124) a. *anticipation*
They even **fly** on the **wing** ← **sleep** on the **wing**
b. *perseveration*
A **branch** falling on the **tree** ← ..on the **roof.**

→ so lemma retrieval has to get the right root, not just a √ feature
→ at least this explains how things like gender & class features get into the syntactic derivation (such features are grammatical properties of particular roots)
→ but this seems to be problematic for suppletion/stem allomorphy thingies... talk about it later.
→ Pfau is clear that the right lemma can't be identified phonologically [contra Embick and Noyer!], and he seems to buy the arguments that all that encyclopedic info has no place in the syntactic derivation...but then how do you identify lemmas? He suggests an 'index' system for lemmas... very odd.

→ count vs. mass distinction showing semantic effects in substitution and exchange errors?

(125) a. Soll ich schon die **Brötch-en** aufsetzen ← den **Kaffee**
shall I already the roll-pl on.put? coffee

b. Es waren total viele Briefk**ä**sten in meiner **Post**, quatsch,
there were really lots.of mailbox-pl in my mail, nonsense
Post in meinem Briefk**a**sten
mail in my mailbox.

→ plural added to a count noun appearing where a mass noun was intended
→ [-bounded] semantic feature affecting things?
→ notice other accommodation effects in (b) especially
→ similar examples, though not too many, with semantic gender

Negation-moving errors:

→ Negation as an independent element, both sententially and also within derivational lexicalizations:

(126) a. Er hat **nicht** gesagt, dass es möglish ist, ich meine, er hat gesagt, dass
He have neg said that it possible is, I mean, he has said that
es **un**möglich ist
it impossible is

b. I **dis**regard this as precise ← I regard this as imprecise
c. I tell you he's **not** crazy ← I mean he's **in**sane.

→ Supports the idea that [+neg] is a dissociable feature
→ also perhaps the Bobaljik-style idea that [+neg] is a feature of a general PolP, not the only projector of a NegP (hard to see how you could get a head to project entirely from a feature misplaced from elsewhere, methinks).
→ analyzes ex. c as a blend of two errors, a meaning-based substitution ('crazy' for 'sane') plus stranding and separate realization of [neg]. Alternative: perhaps anticipation of [+neg] feature contained within [insane], plus competing activation of CRAZYand INSANE (see later discussion) resulting in wrong insertion?

→ cool that when sentential negation gets misplaced in English *do*-insertion gets triggered:

(127) The bonsai did**n't** die because I watered it. ← died because I did**n't** water it.

→ but anyway, evidence for [+neg] as independent feature of even derivationally negative things like *imprecise*.

Pfau's conclusion is, I think, wrong from a DM perspective:

> "Things are different concerning the Neg feature: Obviously, in speech errors, that feature is separable from concepts like UNCLEAR and IMPRECISE; it may shift and attach to other roots. We may therefore conclude that such concepts are in fact combinations of a more basic concept and a Neg feature, by that allowing at least some decomposition at the conceptual stratum."

Real conclusion: things like 'unclear' and 'imprecise' are *morphosyntactically* complex, and it's unsurprising, therefore, that they are semantically complex (and separable) in the conceptual stratum. What would allow 'decomposition' in the lexical stratum would be an example showing anticipation/perseveration of a +neg feature in a *monomorphemically* negative root, like *doubt, lack,* etc.

Gender-involving errors:

→ Gender's kind of a funny feature; belongs to a particular noun, not a separate combinable/computable syntactic feature in German (though it might be in English & other semantic-gender lgs, or in Spanish and other phonological-gender lgs)
→ Is it attached to the lemma for the root, or to the phonological form of the root?
→ Because gender agreement accommodates when noun stems are semantically substituted or exchanged, Pfau argues it must be attached to the lemma

(128) a. *exchange error:*

irgendwie have ich heute	**eine** Zunge	**im**	Knoten
somehow have I today	a.f. tongue.f	in.the.m	knot.m
←	**einen** Knoten	**in der**	Zunge
	a.m knot.m	in the.f	tongue

b. *perseveration*

der Unterschied von Fragesatz	und	**normaler**	Frage
the difference of question.sentence	and	normal.f	question.f
←	und	**normalem**	Satz
	and	normal.m	sentence.m

(Note interesting *im vs. in der* thing going on in (a)... Fusion blocked? *im* bimorphemic? Also, case (a feature assigned to the DP from the clause, not from the substituted N) remains as it should have been: accusative and dative in 10a).

→ further evidence that gender must be on the lemma: in meaning-based nominal errors where he could tell what was going on, 72.6% of the time the intruding (error) noun had the same gender as the intended noun. (That is cases like 10 above were in the minority).
→ "A terminal node without a gender specification could in principle be taken with equal probability by every vocabulary item irrespective of its gender feature."
→ also an argument against one gender being 'unmarked' via underspecification (p. 139) (*unlike* what he observes for [pl/sg], where sg. definitely looks like an unmarked thing, see below). Conclusion: noun classes are fully specified on both terminal nodes and relevant root vocab items.
→ also seems to be the case that gender is statistically relevant in errors involving substitution of plural nouns, where gender is not marked anywhere else (i.e. on the determiners etc.), so really, gender just always has to be there (i.e. it's not Impoverished in plural environments). (Note that this is also a good argument against a unification-based story of feature sources..)

Accomodation of gender agreement:

→ Agreement is a morphosyntactic feature-copying or percolation process that happens before vocabulary insertion
→ Prediction: In cases where an error is clearly a form-based 'lookup' problem — triggered by phonological similarity rather than semantic similarity , then the vocabulary items realizing terminal nodes around the element should *not*

accommodate, since the features which they care about have not changed with the lookup of the wrong phonological string.

Examples:

(129) a. *Meaning-based substitution, with accommodation*
aber du musst **die** Tür dann festhalten, Quatch, **das** Fenster
but you must the.f door.f then hold, nonsense, the.n window.n

b. *Form-based substitution, no accomodation*
oh, **ein neuer** Luft, äh, Duft
ah, a.m new.m air.f, ah, fragrance.m

→ Pfau has 33 cases of noun substitution in his corpus where a) accommodation would be possible and visible, i.e. the nouns differ in a gender feature that triggers overt agreement and b) it's possible to be sure whether the substitution was phonological or semantic. Here's how the accommodation breaks down:

(130)

Noun Error Type	Accommodation?	
	Yes	No
meaning-based	21	0
form-based	1	11

→ In other words, the facts are exactly as DM/Levelt would predict (except the one).

Substitution errors must target terminal nodes!

→ interesting observation: within the DM framework, one can not assume that whole DPs are replaced. If, for instance, we analyzed 11a above as switching of DPs, we wouldn't expect form accommodation
→ this is quite a general prediction, since VIs realize terminal nodes. In fact, except for some post-phonological kinds of substitutions (e.g. spoonerisms, where rhymes are switched, clearly after insertion), we wouldn't expect the notion 'phonological word' to play a role *at all*... speech errors like this should be a very good window on morphemic breakdown and terminal nodes.
→ interestingly, the few phrasal-substitution errors he sees are in fact idiomatic ones...

Agreement errors:

→ Agreement matters:
(131) $[_{NP}\ [_{N'}$ Descriptions of $[_{DP}$the massacre]] $[_{CP}$ that *e* were discovered yesterday]]
$[_{NP}$ Descriptions of $[_{DP}$ the $[_{NP}\ [_{N'}$ massacre] $[_{CP}$ that *e* was discovered yesterday]]]]

→ A wrong source for feature copy is possible:

(132) [The full impact of **the cuts**] **have**n't hit yet.

→ In English, nearly all agreement errors are the result of copying the wrong feature from a DP that is *inside the subject DP*, as in (14).

→ Not so in German: only 17 of 82 agreement errors involve a DP within the subject (true target) DP.

→ 28 involved agreement with the object DP, as in

(133) dass **es** hier konzeptuell Einflüsse **geb-ën** ← dass **es**...**gib-t**
that it.sg here conceptual influence.pl give.pl that it.sg give.sg

→ previous English-based theories of agreement have proposed that agreement happens by feature-percolation (kind of unification-y); agreement with a DP w/in the subject then would be a natural kind of 'overpercolation' -- once the embedded pl feature made it up to the subject DP's mother node, all else would follow naturally

→ but these German errors suggest that's not a possible analysis, at least, there would be weird stuff going on where an unattested *object* agreement process was cropping up.

→ Agreement in DM accounted for (sometimes) by insertion of Agr nodes1 in the MS component. Subj-Verb-Agreement errors seem to depend heavily on linear adjacency/closeness: linear adjacency is relevant at MS but not in the syntax. So, e.g., you get errors like this in German (where the object immediately precedes the verb, rather than the subject):

12. das **es** hier konzeptuelle **Einflüsse** geb-**en** for …gib-**t**
that it.**sg** here conceptual influence.**pl** give-**PL** …give-**SG**

→ this result directly contradicts the predictions of 'feature percolation' theories of subject-verb-agreement errors, according to which the wrong features 'percolate' up in their containing clause and are then copied onto the verb via regular agreement processes. Only in a linear sense, not in a structural sense, are the features of the object close to the verb in ex. like (12). Pfau's pattern of errors in German is markedly diff. from that in English, where the subject precedes the verb almost invariably. The linear order account makes diff. predictions for German and English, but the percolation account does not; the linear order account is closer to the facts.

10.5 Agreement, L-nodes, etc.

'Long-distance' agreement erors

→ Pfau takes it to be the case that the 'long-distance' agreement errors he sees can't be the result of local copying operations making mistakes after linearization

→ but seems to me that, of at least the 4 cases he gives in 4-36, that is a possible analysis

(134) Long-distance agreement in speech errors

a. wenn das Auto nicht angeh-**st**,
when the car not start-2.SG
wenn das Auto nicht angeh-t, schieb-st du
when the car not start-3.SG push-2.SG you

b. sie seh-en, dass **ich** selbst eher flachbrüstig **sind**
they see-PL that I myself more flat-chested be-PL
← dass ich selbst eher flachbrüstig bin
← *that I myself more flat-breasted be-1.SG*

c. für das ganze Tohuwabohu, **das** in unser Leben gekommen **bin**,
for the whole chaos that in our life come be-1.SG
dank-e ich ihm eigentlich
thank-1.SG I him actually
← das ganze Tohuwabohu, das in unser Leben gekommen ist
← *the whole chaos that in our life come be-3.SG*
"I actually thank him for all the chaos that has come into our life."

d. **ich wiss-t**, dass ihr nicht Recht hab-t ← ich weiß, dass
I know-2.PL that you.PL not right have-2.PL ← I know.1.SG, that

→ In 4-36 a, c and d the mis-inflected verb is linearly very close to either the subject source of the wrong agreement (as in 4d), and/or to a verb which is also marked for agreement with that subject source (as in 4a, c).

→ what about 4-36 b? here, we have a comparative... there's a hidden/deleted complement clause 'than they flat-chested are' -- which would put the mistaken 'sind' next to a deleted 'sind' that IS inflected for 3pl..

→ Pfau seems to be arguing that because long-distance agreement (of various types) is attested in some lgs, it's an option of UG that might show up as an error in other lgs.

→ not really my favorite argument in the world -- as he points out the long-distance agreement he discusses in Goboderi and Tsez is definitely not of the same type as the errors he's observing in German

→ Aside: Note that his conclusions concerning the level of agreement errors—in his investigation as to whether they occur preceding or following syntactic movement, i.e. in the narrow syntax or at MS—might be affected by the copy theory of movement. He assumes that the (local) trace does not bear the features relevant for agreement copying. Interaction with notion of feature 'valuation' through checking (and hence movement)?

Acategorial roots

→ adopts the H&N idea that the closest thing to 'category' a root has are licensing features that say where it's insertable

→ he takes care of adjectives by assuming that adjectives are licensed by a Deg° head (this head is what is selected/modified in comparative & superlative constructions)

→ his story would carry over well to a little a / little n categorizing heads view.

→ there are errors where you see roots inserted into the wrong category-licenser

(135) The gardener has to <u>die</u> the <u>pull**ed**-up</u> flowers.
← The gardener has to <u>pull up</u> the <u>dea**d**</u> flowers

→ in such errors, you see accommodation to the new category (e.g. vowel change or lack therof) or accommodation of the licensing environment to the new root.

→ only explainable if roots are inherently category-less (otherwise such errors should *never* occur at the lemma level, rather than just being less frequent).

→ the above was a switch where accommodation to the new environment was on the root

→ here the affixes change (as well as antepenult shortening applying):

(136) People still see Libya as a <u>nation**al**</u> <u>danger</u>
← ...as a <u>danger**ous** nation</u>

→ So exchange of acategorial roots is possible, particularly if the root is licensed in more than one environment

→ The licensing requirements explains Garrett's effect — roots will tend to be exchanged in environments where they can both satisfy their licensing requirements.

→ but no such effect is expected to show up in post-insertion exchanges

→ stranding exchange errors (where a suffix is left behind) seem to mostly be between roots of different licensing requirements, and tend NOT to show accommodation, hence are post-VI errors (true of 62 of 76 stranding errors where the roots were diff. categories)

→ but in 14 of the 76, accommodation was observed

→ maybe because these kind of errors tend to occur between immediately adjacent roots? these could be a VI failure, rather than a post-VI switch?

Feature switch and feature stranding

→ basically, pre-VI, morphosyntactic features can switch
→ German is great for seeing this, because of the wide variety of inflection it shows
→ Pfau treats [pl] as bundled with the root in determiner phrases, but it could just as easily head a separate projection, NumP (though it will still have to be the marked value of a Num head, to capture its effects. (Remember discussion of Neg-shift and PolP).

(137) You must be too tight for them
← They must be too tight for you

→ Features exchanged independently of Case
→ Case assignment an MS process?

10.6 Accommodation is a predicted outcome

→ obviously on this view (the Levelt/DM-style view of lg. production) accommodation is a predicted outcome.

→ on Berg's view, context accommodations, where e.g. determiners or other agreeing elements are fixed so that they match the requirements of the erroneous root, are the result of the processor seeing an existing conflict (e.g. between the feature or phono form of the intended D and the erroneous root) and steps in to change the features/phono form of the intended D so that they match.

→ on Pfau's analysis, the erroneous features/suffixes aren't present when the error happens.

→ the spell-out is the natural consequence of the system operating normally
→ only a couple of things looked like actual error repair strategies;

(138) a. und die macht keinen Kummer, keinen Finger krumm
and she makes no grief no finger bent

krumm + -er (from Finger) → re-look-up VI to insert close actual-word match Kummer (there is no word Krummer)

b. durch die Kutsche latschen ← durch die Küche
through the coach wander through the kitchen

anticipation of 'tsch' from 'latschen' triggers re-VI look-up to find close actual-word match Kutsche (there is no word Kütsche)

Q4. In class, we have seen two kinds of proposals concerning the stem vowel change in cases like sleep/slep-t.

i) Readjustment rules are morphophonological rules that apply to stems after vocabulary insertion has taken place (the way Halle and Marantz see things)

ii) the sleep/slep alternation is a case of allomorphy: /slep/ is a stem inserted to realize √ASLEEP in the context of [+past]

Taking Pfau's proposal that DM can be a production model seriously, these two ways of treating stem alternations make different predictions about whether stem alternation accomodation should be seen in "form-based" errors. Why?

In particular, under the (i) scenario, one might find a case of an error where a conditioned suffix allomorphy (e.g. some allomorph of [+past]) did/did not show accommodation at the same time as a stem alternation triggered by the same environment did/did not show accomodation. (Pick the appropriate "did"or "did not" in each sentence). This would not be possible under the (ii) scenario.

11 Marantz: "No escape from syntax'

Lexicalism: 'Two-engine theory': engine 1, the lexicon, generates internally complex words which are manipulated by engine 2, the syntax

11.1 The lexicon and lexicalism and compositionality

> "both the lexicon and syntax connect sound and meaning by relating the sound and meaning of complex constituents systematically to the sounds and meanings of their constitutive parts"

→ the central idea of lexicalism is that while the sound-meaning connection generated by engine 1 *can* be systematic, it doesn't *have* to be, while the sound-meaning connection generated by engine 2 *has* to be systematic.

(139) Lexicalism: 'Word' (='phonological word') = 'Lexical Item'

a) Some domain of phonological rules = 'Lexical Item'
- → certainly not true of what we normally think of as 'phonological words' (e.g. *walked* — 2 LIs, one Phon Wd)
- → probably not true in general, though possibly phonotactic constraints might hold of Lexical Items (i.e. morphemes), see Hammond
- → but even if true that Lexical Items were the domain of some special phonological rules, could still do phonology after syntax; some rule would only apply to their appropriate domains
- → For lexicalist organization to be true, would need to show that the phon word (or whatever domain they wanted, with internal structural complexity), corresponded to some special domain relevant to syntax/LF — e.g. relevant to special meanings.

b) Lexicalist claim: 'continuum between the meanings of atomic morphemes and derivationally derived words that ends abruptly at the word level.' i.e. after the word level, *must* get compositionality.

→ 'words can have special meanings of the sorts that roots might have, but syntactically derived structures must have meanings predictable from the meanings of their parts and of their internal structures,'

> "This paper brings the reader the following news: Lexicalism is dead, deceased, demised, no more, passed on…"

11.2 Idioms: there is a domain for non-compositional meanings, but it ain't the Word; it's the vP

→ is it in fact the case that word meanings are so different from idiom meanings? In fact, no, argued by Jackendoff, Williams (last week)

→ in fact, the boundaries for special meanings are syntactically identifiable

→ Marantz: vP is one. (rather, v') It's because roots in VP can say they get a special meaning in the environment of v, which they can 'see' (local to it) but not spec-vP, which they can't. (This is different from but related to Kratzer's idea))

Consequence: domain for special meaning will sometimes be smaller than a phonological 'Word', sometimes bigger — bad for Lexicalism

→ Bigger because verb roots and their objects together are within vP, and hence can get special meanings

→ Things that look like they might be cases of idioms including vP turn out not to be—no true Agents are involved

(140) 'The shit hit the fan' is non-agentive.

→ Ditto for 'The cat got X's tongue', etc.

→ But what about "that dog won't hunt', 'that's the pot calling the kettle black' and other proverbial things?

→ weaker claim: can't have a fixed agent and free object. (Slightly different formulation that that of Marantz; more likely to be right; Koopman & Sportiche's.)

→ Smaller because some words include vP, and hence can't be idiomatically interpreted

(141) Two kinds of passive: eventive and adjectival (cf Embick!)

→ adjectival vs. eventive passives: adjectival passives formed on VP, eventive ones include vP

→ note adjectival = stative, because vP = event.

→ Fixed idioms with passive in them turn out to be stative, not eventive.

→ 'Les vaches seront bien gardées', Chichewa

→ Conclusion: no eventive passive can be a fixed idiom

→ Causative verb can't participate in an idiom unless the complement is non-agentive (if the complement were agentive, it would have a vP and be a barrier to further idiomatic interpretation

make oneself scarce, make ends meet, make x over
laisser tomber, fera passer le gout du pain

11.3 Remarks on nominalization: causativization must *happen in the syntax*

(Contra Fodor!)

→ 60's transformational grammar: sentences were transformed into sentential nominalizations 'in the syntax': 'that john destroyed the city' → John's destruction of the city.

→ old-style transformational grammar: only Vs could take complement clauses and subjects (phrasal distribution was part of what told you if something was a V).

→ "words were grouped into the same grammatical category N, V, Adj, when they shared distribution"

→ Nominalized Vs were a problem for the distributional definition of V if they were 'really' (lexically) Ns.

→ However if they were really underlying Vs, and then became Ns through a transformation, then no problem

→ If not, however, then Ns and Vs can't just be distributionally different; they must be inherently different -- distinguished by an 'internal property', e.g. a feature +N, +V. etc.

→ X-bar theory says that categories all have the same phrasal distribution possibilities

→ Chomsky saw the choice as follows: write complements into the NP rule ("extending the base") or include a transformation changing VPs to NPs ("extending the transformational component"— the nominalization transformation)

→ He opted for the former, observed that the categories could no longer be distinguished on the basis of distribution, and X-bar theory was born

→ Because nominalizations don't always have interpretations that are available to their corresponding sentences, and because meaning was supposedly a DS property, the occasional non-correspondence of meaning between nominalizations & sentences was an argument against the transforming position. (the relevance of the 'transmission' example)

→ BUT: the central point of 'Remarks' for Marantz—about 'grow' vs. 'destroy' — is predicated on the notion that causativization of 'grow' happens 'in the syntax', in an environment unique to verbs. Here's how the argument goes.

11.4 2.3.1 The argument against the nominalization transformation

(142) "that tomatoes grow" → 'Nominalization transformation'
= "the tomatoes' growth"

(143) "that the army destroyed the ciy" → "Nominalization transformation"
= "The army's destruction of the city"

(144) ("that the army destroyed the city" → "Passivization transformation"
= "The city was destroyed" → "Nominalization transformation"
= "The city's destruction")

→ Chomsky sees a problem!

(145) "that John grows tomatoes" → Nominalization transformation
= "*John's growth of tomatoes".

(146) "That John amused the children" → Nominalization
= "*John's amusement of the children"

(147) "That John amused the children" → Passivization
= "That the children were amused" → Nominalization
= "The children's amusement"

→ Consequently, don't want to do nominalization as a transformation of a sentence; would have no non-ad-hoc way to rule out nominalizations of perfectly good transitive verbs which in fact are bad.

→ Must be that the noun is in the lexicon *and causativization of the verb is a syntactic operation*! Consequently, causativization can't feed nominalization.

(148) The 'lexicalist' account proposed by Chomsky

grow = V

growth = N

Can now stipulate: there's a generative, *syntactic* operation that adds an agent argument to Vs but not to Ns

→ If you added the agent argument to Vs in the lexicon, you'de be back in the same pickle as the transformationalist account — you'd have no non-stipulative way to distinguish those verbs that feed nominalizations from those that don't!

> 'If we derived words in the lexicon, we would derive transitive 'grow' there and nothing would prevent us form also deriving the nominalization 'growth' with transitive meaning. The only thing that could rule out transitive causative 'growth' then would be some stipulation, such as 'don't' make nominalizations from verbs that are causatives of change of state verbs with internal causers'. The impossibility of causative 'growth' follows directly if derivational morphology is syntactic, rather than lexical, and if the only *structural* source of agents is a head (v-1) that verbalizes a root in its context".

→ So no nominal transitive 'growth' — *grow* doesn't have an inherent agent, and if it got one structurally, the whole thing would turn out to be a verb, because the only structural source of agents is also a verbalizing head!

→ Why not intransitive *destroy*? Pretty much comes down to what the words *mean*: the failure of intransitive *destroy* is a failure of the 'colorless green ideas' type, not of the 'dog is the barked' type. The failure of nominal transitive *growth* is similar, though the interpretive problem here is through a *lack* of material, not through a surplus of it.

> "John, in 'John's destruction of the city' and 'John destroyed the city' might receive similar interpretations through different syntactic means"

→ THIS is the upshot of Chomsky's argument! The justification for the transformationalist approach was exactly that they got the same interp. Same interpretation, therefore same structural source for the interp. Chomsky says no, not necessary to conclude that!

("there's a further issue of whether the categories reflect features of the roots themselves or rather features of functional nodes that serve as the context for the insertion of the roots"; cf Harley&Noyer Encyclopedia paper)

3 Some conclusions

Taking the morphology seriously: WYSIWYG morphology — if there's complex morphology there, then there's complex structure there, that has to get interpreted appropriately. Cf. *cabeuretor*, *transmission*. 'transmission' can't mean what 'blick' can mean.

(→ come see my Congress talk about this! :))

12 Kratzer, "Severing the external argument from its verb"

12.1 Davidsonian event semantics:

(149) "We bought your slippers in Marrakesh
∃e [buy (your slippers)(we)(e) & in Marrakesh(e)]
="There was an event of us buying your slippers and that event was in Marrakesh"

→ Syntactic arguments are direct arguments of the verb—compose directly with the verb. Adjuncts are not.

(150) Neo-Davidsonian
"We bought your slippers in Marrakesh
∃e [buy (e) & Agent (we) (e) & Theme (your slippers) (e) & in Marrakesh(e)]
= "There was an event of buying and the agent of the event was us and the patient of the event was your slippers and the event was in Marrakesh.

→ Nothing (except the event argument) is an argument of the verb. Each argument is introduced by its own separate predicate.

→ Either approach could be captured in a theory of LCS with a rule about 'ordered argument association' in the syntax:

(151) a. 'buy' λxλyλe[buy(x)(y)(e)]
b. 'buy' λxλyλe[buy(e) & Agent(y)(e) &Patient(x)(e)]

either lexical entry gives the same result
buy is a 3-place function (λxλyλe)
buy combines first with its Patient (λx), then its Agent (λy), then its event arg (λe)

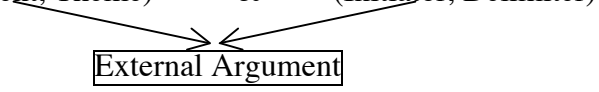
→ Kratzer: going to argue that some of this decomposition happens in the syntax.

→ in fact, going to argue that *buy* (and all transitive verbs with external arguments) are not three-place predicates (Agent, Patient & Event), but two-place preds (Patient and Event)

→ Agents are added by a separate predicate, with its own lexical entry, which projects its own phrase in the syntax.

12.2 External arguments are special

(152) Williams: *buy* (1, 2)
Rappaport & Levin: *buy* (<Agent>, Theme)
Grimshaw: Thematic (Agent, Theme) & Aspectual (Initiator, Delimiter)



Marantz: *buy* (Theme)

Kratzer: how do you implement this?

(153) If verbs & their arguments combine by function application, and if the lexical entry for *buy* looked like this:

buy λxλe[buy(x)(e)]

then you'd have a proposition as soon as you combined *buy* with its patient and its event argument. How does the agent get in there?

→ could just add it by brute force, with special semantic interpretation rule for VPs
→ ick!

(154) Marantz's 'idioms': many case where you get a lot of meaning variation depending on the type of object a verb takes

kill a bug	=	cause the bug to die
kill a conversation	=	cause the conversation to end
kill an evening	=	while away the time span of the evening
kill a bottle	=	empty the bottle
kill an audience	=	entertain the audience to an extreme degree

throw a baseball
throw support behind a candidate
throw a boxing match
throw a party
throw a fit

take a book from the shelf
take a bus to New York
take an aspirin
take a nap
take a letter in shorthand

(155) Important! these aren't exactly 'idioms' — they're not fixed (remember Williams?):

kill the bottle / the peanuts / the casserole / the wine
kill an hour / a few minutes / time

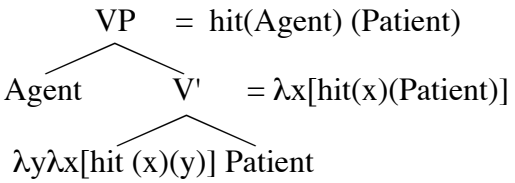
(156) Even more important: you see this kind of variation conditioned by objects -- *not subjects!*

(157) Bresnan's and Grimshaw's reply: the external argument is still an argument of the *verb*, it's just a special argument, in that it combines *last*. So you can have special meaning with the verb and the object without the subject, but not vice versa.
(Their prediction: no idioms of e.g. verbs+adjuncts excluding the object.)

(158) Kratzer's argument

a) Semantic interpretation of a node results from combining the two daughter nodes.

b) Verbs are functions. Traditionally, *hit*, e.g., is a two-place function:
hit(x)(y)



"Hit" is a function that takes an argument x and turns out
a function that takes another argument y and turns out
truth value = TRUE iff y **hits** x.

so truth value of tree above = 1 iff Agent hits Patient

(159) How do these special interpretations work?

Could do it like this:

kill$_1$ is a function that takes an argument x and turns out
a function that takes another argument y and turns out:
truth value = TRUE iff x is an animate being and y **kills** x.
kill$_2$ is a function that takes an argument x and turns out
a function that takes another argument y and turns out:
truth value = TRUE iff x is comestible and y **consumes the last of** x.
kill$_3$ is a function that takes an argument x and turns out
a function that takes another argument y and turns out:
truth value = TRUE iff x is a time period and y **wastes** x.

Or like this:

kill is a function that takes an argument x and turns out
a function that takes another argument y and turns out:
truth value = TRUE iff x is an animate being and y **kills** x.
truth value = TRUE iff x is comestible and y **consumes the last of** x.
truth value = TRUE iff x is a time period and y **wastes** x.

(160) But what's to prevent you from doing the same trick with the "y" argument? Neither approach predicts that it should be impossible:

blick is a function that takes an argument x and turns out
a function that takes another argument y and turns out:
truth value = TRUE iff y is an animate being and y **blicks** x.
truth value = TRUE iff y is a time period and x **exists during** y.
truth value = TRUE iff y is a food item and x **is made sick by** y.

so "John blicked Mary" has whatever meaning 'blick' has.
"Today blicked the mayfly" says something like "The mayfly existed today."
"The sausage blicked Mary" says something like "The sausage made Mary sick"

(161) Kratzer says that the only way she can see to capture Marantz's generalization is if external arguments are not arguments of their verbs after all, but arguments of some other verb — a light verb — that selects them, and then combines with the main verb by coordination to give the whole meaning:

12.3 External arguments are arguments of a separate head, Voice

→ "Suppose quite generally that arguments are introduced by heads"

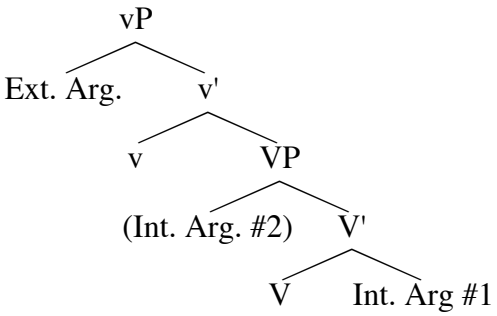
→ Aha! Hung (1988) reports that Malagasy has exactly such a head, represented by visible morphology

(162) Morphological evidence: Malagasy 'active' prefix *-an-*

M+an+sasa	ny lamba	(amin ny savony)	Rasoa
T+v+wash	the clothes	with the soap	Rasoa

"Rasoa washes the clothes with the soap."

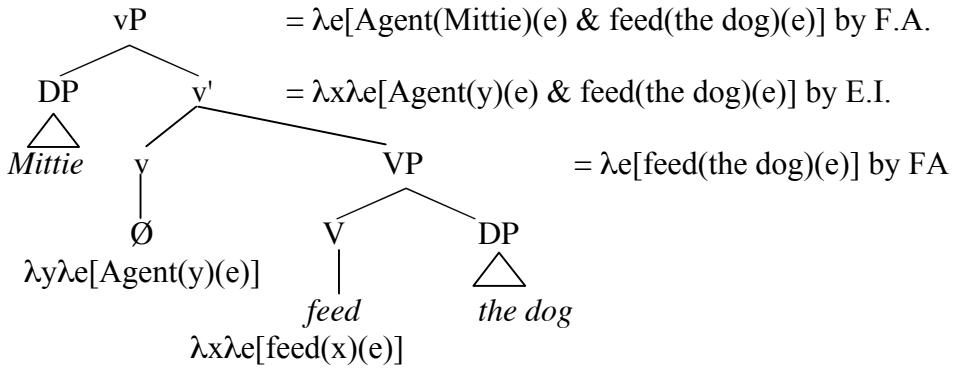
(163) So all verbs with external arguments have a separate little "v" that selects the external argument:



→ long irrelevant waffle about whether the external-argument introducing head is lexical or functional

→ (though I concur that splitting the vP "allows us to harvest many of the pleasant syntactic consequences of [previous] proposals" along these lines)

(164) How do the denotations of VP & vP get combined? "Event Identification"



"Event Identification is one of several admissible conjunction operations"

→ the events that are being identified have to be compatible

→ then confusing excursus about how to add an external argument to a stative verb

→ where does event argument come from to satisfy the open argument slot? It doesn't; it gets existentially quantified (bound) by an appropriate quantificational functional head higher up (e.g. Tense)

(165) Back to variable interpretation verbs: *John killed Bill:*

> There's a "causing" and a "killing"; John is the agent of the causing, Bill is the **patient** of the **killing**, and the causing and the killing were the same event -- so John caused the killing of Bill.
>
> *John killed the wine*
>
> There's a causing and a killing; John is the agent of the causing, *the wine* is the **patient** of the **killing**, and when *kill*'s patient is comestible, *kill* means 'finish', and the causing and the killing are the same event -- so John caused the finishing of the wine.

12.4 Finally: morphology in the syntax, hooked up to semantics:

→ then application of theory to an interesting paradigm with accusative case, Burzio's generalization, and *of*-ing vs. acc-inc & poss-ing gerunds

(166) a) Mary's reading **of** Pride and Prejudice pleased me.
b) Mary reading Pride and Prejudice pleased me.

→ former a noun, latter a verb

(167) a) Mary's clear(*ly) reading **of** Pride and Prejudice pleased me.
b) Mary clearly reading Pride and Prejudice pleased me.

(168) a) The reading **of** Pride and Prejudice
b) *The reading Pride and Prejudice

→ Different interpretations for *-ing* gerunds vs *of*-gerunds

(169) a) I saw/remembered Mary's reading **of** Pride and Prejudice
b) I saw/remembered Mary reading Pride and Prejudice

(170) a) Mary's reading **of** Pride and Prejudice ← could have organized it
b) Mary reading Pride and Prejudice ← has to be Agent

→ analysis: with *acc*-ing, external argument is introduced, *-ing* category is a true verb; with *of*-ing, external argument not available, possessive licensed the normal way, accusative case not available

→ Burzio's generalization: accusative case is only available if an external theta-role is assigned.

→ *-ing* attaching below Voice = nominal *-ing* form
→ *-ing* attaching above Voice = verbal *-ing* form

Practice Morphological analysis problem (paradigm taken from Pfau):

masculine

	Sg.	Pl.
NOM	der kluge Mann	die klugen Männer
GEN	des klugen Mannes	der klugen Männer
ACC	den klugen Mann	die klugen Männer
DAT	dem klugen Mann	den klugen Männern

feminine

	Sg.	Pl.
NOM	die kluge Frau	die klugen Frauen
GEN	der klugen Frau	der klugen Frauen
ACC	die kluge Frau	die klugen Frauen
DAT	der klugen Frau	den klugen Frauen

neuter

	Sg.	Pl.
NOM	das kluge Kind	die klugen Kinder
GEN	des klugen Kindes	der klugen Kinder
ACC	das kluge Kind	die klugen Kinder
DAT	dem klugen Kind	den klugen Kinder

Table 4: *Agreement within the German DP*

a) Identify the different suffixes on the nouns; draw each gender paradigm independently showing noun suffixes only. Show syncretisms by cell unification
b) ditto for adjectives
c) draw each paradigm for the determiners only.
d) Identify syncretisms across genders
e) Write VI rules of noun suffixation in the masculine gender (pretend the masculine is the only kind of gender there is).
f) What would go wrong if you tried to generate the feminine noun forms using your rules from looking only at the masculine?