

The non-linear nature of English Past Tense Inflection

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The Punch-Line(s)

English Irregular Past-Passive-Participle (PA) Verb Derivations

No verb-root allomorphy

(in English, partly in agreement with e.g., Embick & Halle 2005)

English Verb roots and PA morphemes undergo Vocabulary Insertion in separate cycles.

(contra Embick & Halle 2005, Embick 2010)

PA allomorphy is non-local

(see Dolatian & Guekguezian 2023 for a recently discussed example, and references therein)



The Punch-Line(s)

English Irregular PA Surface Forms:

No Readjustment Rules - A Piece-based Analysis

There is only Suffix Allomorphy

Weak pattern

1 morpheme, always: -D, -t, -ot

Strong pattern

1 morpheme in the Past: ablaut

2 morphemes in the Participle,

Also **always**: ablaut AND -n



The **regular phonology** of English predicts when the ablaut vowel and -n will be realized phonetically, and when they will not.

Piece assumption

- All other things being equal, a piece-based analysis is preferred to a Readjustment Rule analysis when the morpho-syntactic decomposition justifies a piece-based treatment.

(Embick and Halle 2005:60)





Outline

1. The tools we need.
2. The English **PA** system is pretty regular.
 - A CVCV/autosegmental analysis
3. Conclusions.

+ Appendices

1. A distributional table of English Strong Irregular Verbs.

Including the 5 weird ones that don't fit nicely.

2. The sub-types of Class 1.

3. The -ot forms

4. The Real Irregulars.

Be, do, go, make, have : They are not that irregular and also demonstrate bi-phasal derivations.

5. On non-local allomorphy.

The syntactic derivations, and a note on dialect variation.



1. The tools we need

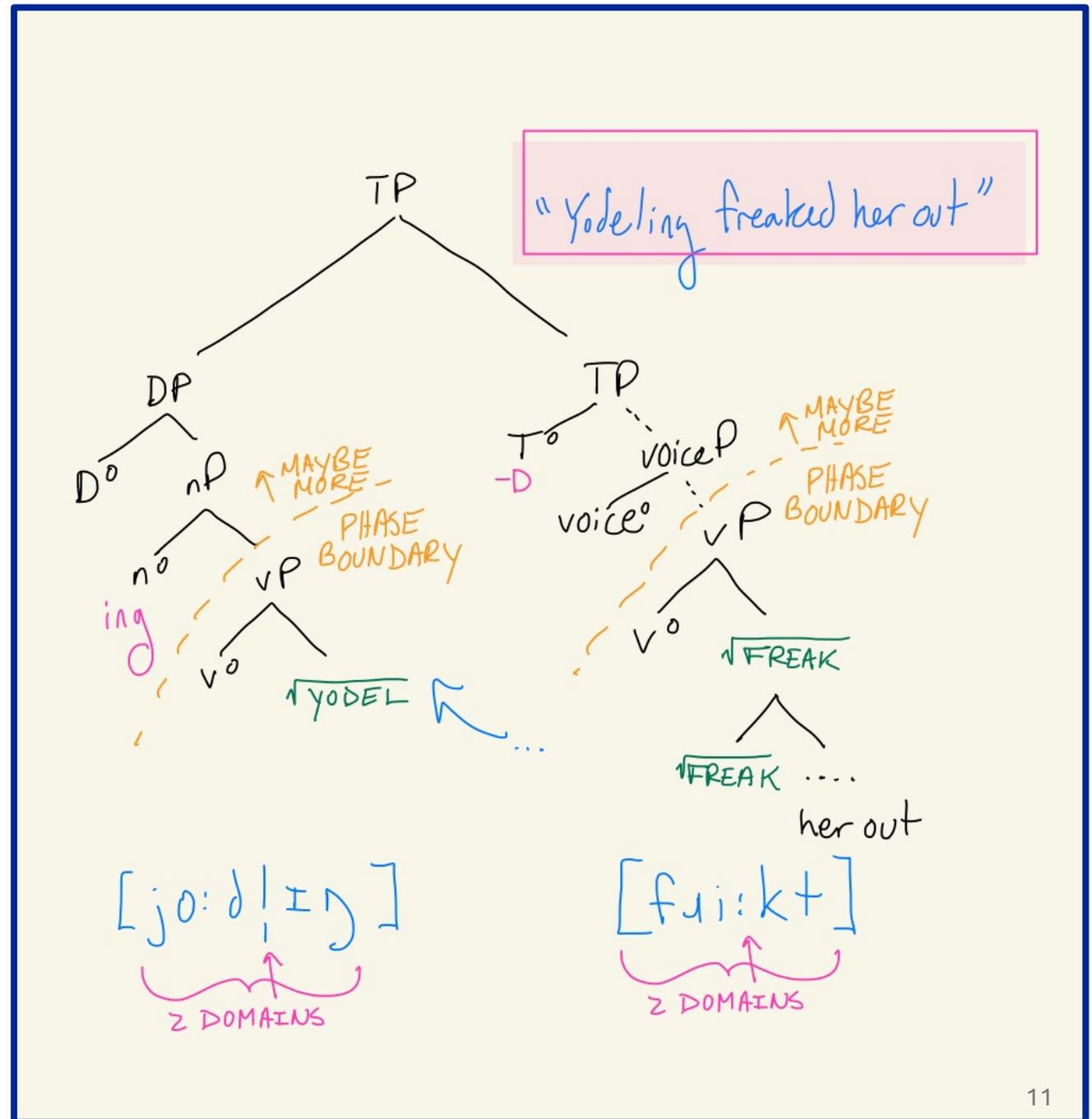
Vocalic Structure

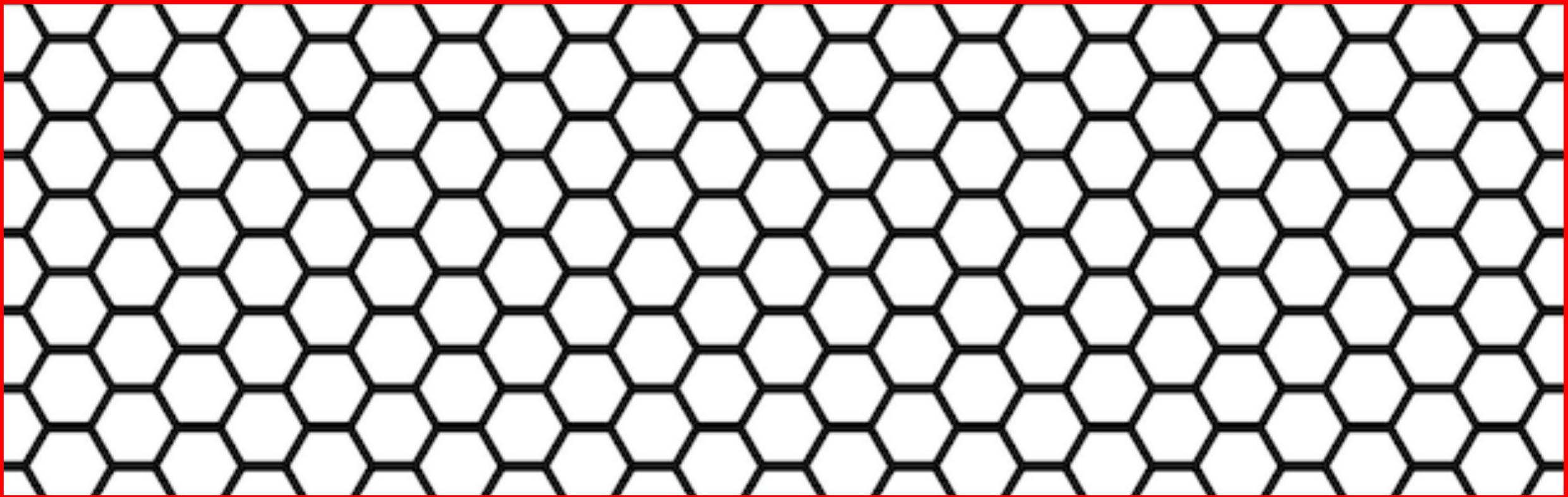
CVCV / Autosegmental Phonology

Phases

Phases

- Phases are small, and small phases are active in the derivation of the English Past Tense.
- PIC1 (Chomsky 2000) rather than PIC2 (Chomsky 2001) : domains spell out immediately
 - Although there is no PIC, at least in the phonology (and probably in the syntax too: (e.g., Bošković 2007, 2014; Newell 2008, 2017; Bobaljik & Wurmbrand 2005, Stepanov 2001)).





2. The English **PA** system is pretty regular.

Some of this is what people have always done, but autosegmental.

Some is (I think) better (and autosegmental).

Regular and Weak Irregular PA forms

Both derived in 2 phases; -D is not floating, but -t is.
See [Appendix 3](#) for the -ot forms

FINAL EMPTY NUCLEI may GOVERN and LICENSE.

- FENs are found at the end of each cyclic domain.
- 2 FENs cannot be internal to a cyclic domain.

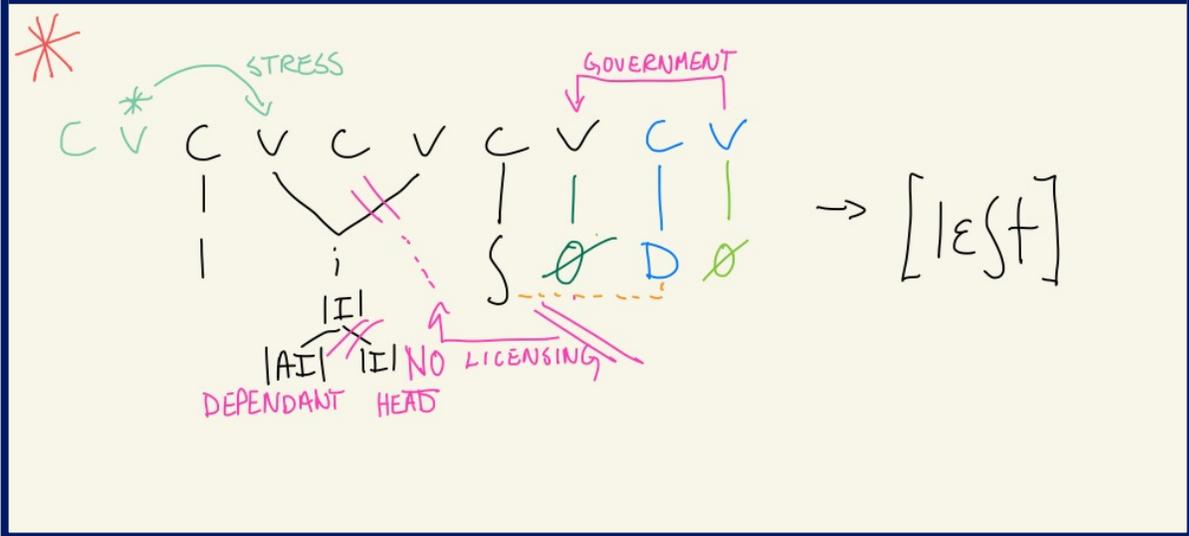
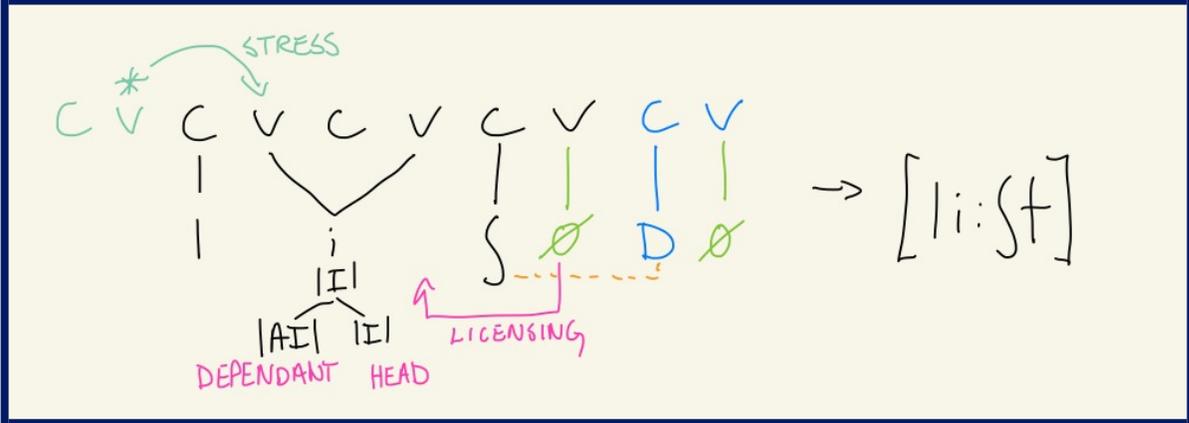
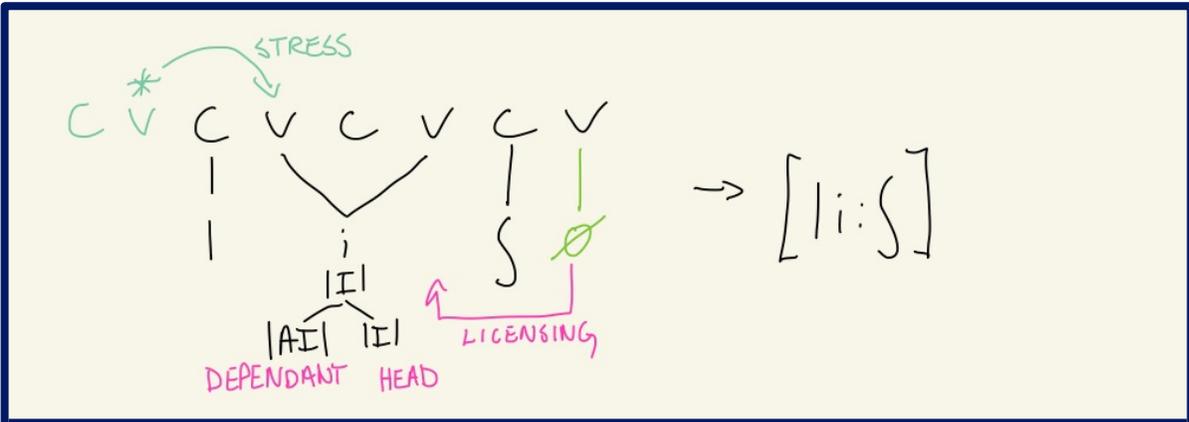
Phonological derivation

LEASH
LEASHED

∴ Regular PA forms are derived in 2 CYCLES.

Lowering cannot happen before V1 of the root (contra Embick & Halle 2005).

c.f. comparable, lightening etc.

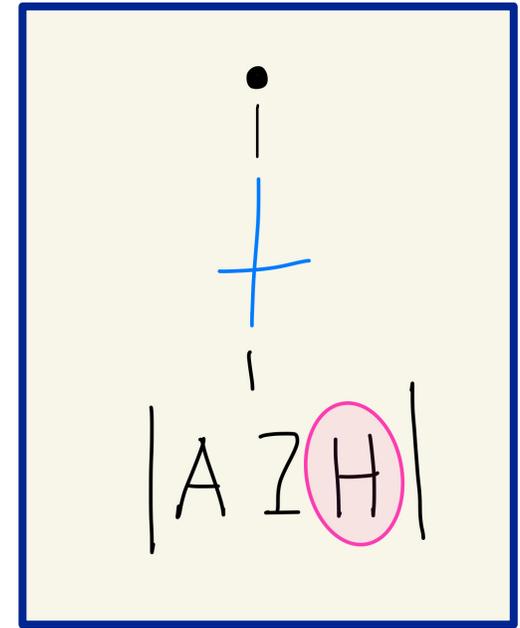


Weak Irregular -t forms

- Verbs in this class: *bereave, bleed, breed, creep, deal, dream, feed, feel, hear, keep, kneel, lead, lean, leap, leave, light, lose, mean, meet, plead, read, sleep, speed, sweep, weep.*
- Verbs that are in this class vacuously because they have an underlying short V that can't undergo shortening/lowering: *bend, bet, build, burn, burst, cast, cost, dwell, hit, hurt, learn, let, put, rid, set, shed, shit, shut, slit, smell, spend, split, spread.*

-t forms

- The weak irregular pattern (nothing incredibly new here, pattern-wise)
 - -t : specified for voicelessness, floating, triggers Phonological Merger
 - -t forms cause shortening but never ablaut.
 - -t forms only affix to monosyllabic verbs (excluding prefixes).
 - see Lowenstamm (2023) for a templatic account of this pattern, but this is true for all irregular verbs
 - -t will not be pronounced after another coronal consonant but is there in the phonology (geminate).
- -t WILL HAVE 'LEVEL 1'-TYPE PHONOLOGY EVEN IF INSERTED IN A SEPARATE PHASE FROM ITS BASE.
 - (see Newell 2021 for English, and any other autosegmental analyses of affixation, see Newell & Piggott 2014 for Phonological Merger.)



Strong Irregulars

Ablaut + *-n forms*

5 sub-classes, grouped into 3 here.

See [Appendix 1](#) for a table with their distribution/ablaut types.

See [Appendix 2](#) for the details of the 3 sub-classes of class 1.

Class 1

In which the ablaut vowel is blocked in the Participle

- This class includes all ablauting verbs that end in a single non-nasal consonant.
- The subclasses all show *some* unpredictable variation in their vowel alternations.
 - Subtype 1: bases with the underlying diphthong [aj] : *drive-drove-driven, hide-hid-hidden*
 - Subtype 2: bases that end in a vocalic offglide : *blow-blew-blown, see-saw-seen*
 - Subtype 3: bases that show unpredictable variation in ablaut quality and quantity :
 - long → short: [te:k] *take* ~ [tʌk] *took*
 - short → long: [gɪv] *give* ~ [ge:v] *gave*
- The common patterns in this class:
 - The ablaut only appears in the past, not in the participle.
 - These verbs revert to their base vowel in the participle.
 - The -n affix is pronounced in the participle.

The verbs in these classes

Subtype 1:

*bite-bit-bitten, drive-drove-driven, hide-hid-hidden, ride-rode-ridden, rise-rose-risen,
shrive-shrove-shriven, smite-smote-smitten, stride-strode-stridden, strive-strove-striven,
write-wrote-written,*

Subtype 2:

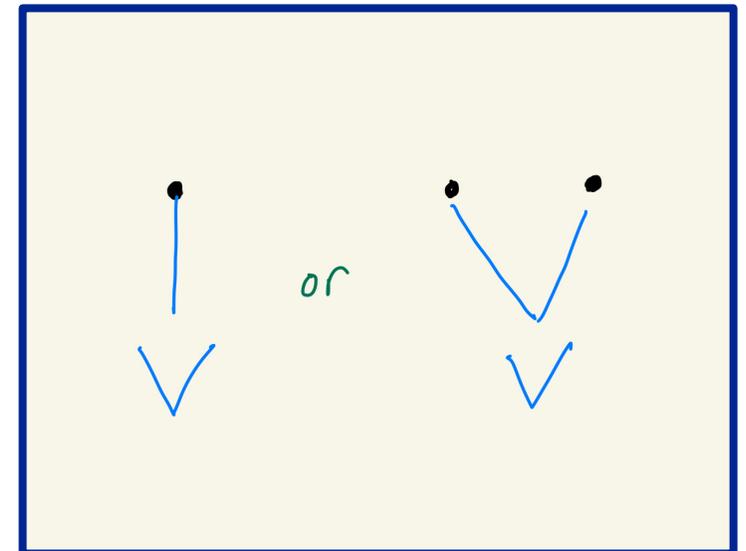
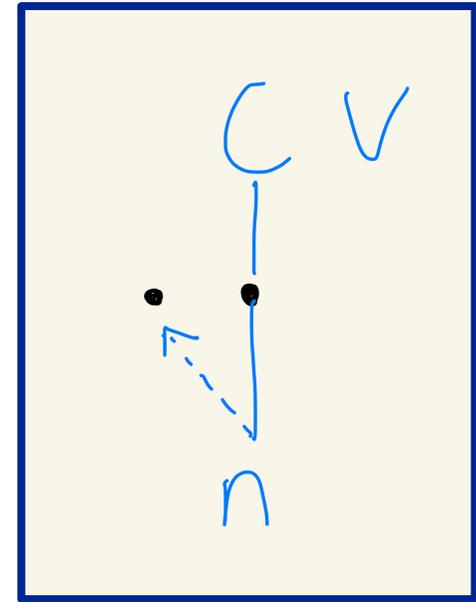
*blow-blew-blown, draw-drew-drawn, grow-grew-grown, know-knew-known, slay-slew-slain,
see-saw-seen, throw-threw-thrown*

Subtype 3:

*eat-ate-eaten, fall-fell-fallen, bid-bade-bidden, give-gave-given, forsake-forsook-forsaken,
take-took-taken, shake-shook-shaken*

The -n morpheme, and the full-vowel ablaut allomorphs

- The -n Vocabulary Item is a nasal C specified to branch onto a V position : a syllabically underspecified syllabic nasal.
 - It is selected for by all strong verb roots.
- The ablaut allomorphs in class 1 are selected for by 1 or more roots (strong root subclasses).
 - These are full vowel suffixes with a root node that dock to a local (rightmost) full V position (c.f. Zdziebko (2017) for Old English).
 - These vowels must replace a vowel or a diphthong and cannot replace a syllabic consonant.
 - These vowels replace the already-syllabified root-vowel and may be underlyingly specified as long or short. This is a structure-changing (not a structure-filling) process.



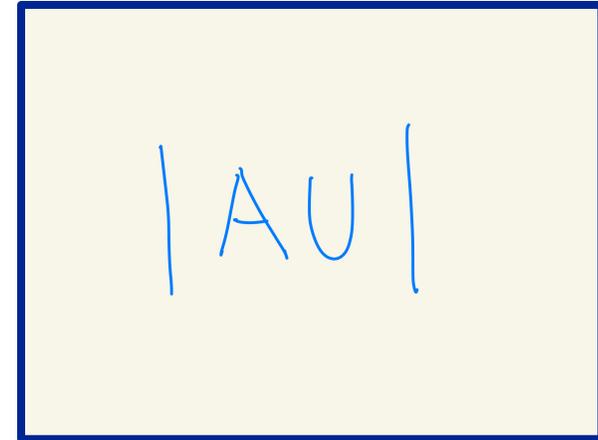
Class 2

In which the ablaut is not a vowel, and so is not blocked in the Participle

- The common patterns in this class:
 - The ablaut always results in [o], [ɔ] or [aw].
 - The ablaut never changes the syllabic properties of the underlying vowel of the root.
 - The ablaut appears in both the past and the participle.
 - All roots end in a single non-Nasal C, or in a Coronal NC-sequence
 - Coronal NC coda sequences are the only ones to behave as though they are mono-consonantal in English.
 - They may be preceded by a long vowel or diphthong : fiend vs *fiemp/fienk
 - The -n affix is pronounced in the participle, except after NC (e.g. find-found-found, and see class 3)
- Verbs in this class: *bear-bore-born, bind-bound-bound, break-broke-broken, choose-chose-chosen, find-found-found, get-got-gotten, grind-ground-ground, freeze-froze-frozen, speak-spoke-spoken, steal-stole-stolen, swear-swore-sworn, tread-trod-trodden, tear-tore-torn, wake-woke-woken, wind-wound-wound, weave-wove-woven*

Featural/Sub-segmental ablaut allomorph

- This allomorph modifies the quality of the vowel of the base, but never interacts with or alters quantity.
 - It consists of the Elements |AU|, but no root-node.
 - Linking these elements occurs internally to the structure of the base vowel as follows:
 - The local vowel is targeted (|AU| is suffixal)
 - (only the glide of diphthongs is local)
 - |A| is added where possible
 - |U| too, and it replaces ||
 - This linking is not blocked by consonants, syllabic or otherwise, as it occurs strictly within the melodic tier.



Class 3

In which the roots are zero-grade, and there is a stable default vowel (=no vowel) in the Participle

- The common patterns in this class:
 - All roots that end in a C_[nasal] or a non-Coronal NC sequence.
 - All but one of these verbs (come) have either [ʌ] or [æ] ablaut in the Past.
 - All forms, regardless of their UR or ablaut vowels, have [ʌ] in the participle.
 - Note that unlike Class 1 and Class 2 verbs, these verbs do not revert to their UR vowel in the participle, nor do they maintain their Past ablaut vowel
 - The -n suffix is unpronounced ... but it is there.
 - Preceding Nasal Cs and Coronal NC-sequences ([nd], [nk] or /ng/→[ŋ]) result in the lack of phonetic-realization of a following -n.
 - This is identical to the 'degemination' / non-pronunciation of -t after coronal-final stems (e.g., light-lit)
- Verbs in this class: *begin-began-begun, come-came-come, cling-clung-clung, drink-drank-drunk, fling-flung-flung, hang-hung-hung, ring-rang-rung, run-ran-run, shrink-shrank-shrunk, sing-sang-sung, sink-sank-sunk, sling-slung-slung, slink-slunk-slunk, spin-spun-spun, spring-sprang-sprung, sting-stung-stung, stink-stank-stunk, string-strung-strung, swim-swam-swum, swing-swung-swung, win-won-won, wring-wrung-wrung.*

5. General Conclusions.

*The
End...?*

Phonological Conclusions

- Neither allomorphy nor readjustment analyses of the ablaut patterns in English can explain the phonological (and syntactic) regularities we see in the data.
 - Syllabic –n blocks the attachment of ablaut vowels...
 - But does not block the attachment of ablaut *features* due to phonological locality.
 - We can ‘see’ it blocking even when it is not overtly realized.
 - This is nice, as most people agree that Readjustment Rules should be, if not banned, a last resort (e.g., Embick & Halle 2005; Haugen & Siddiqi 2013)
- All Ablaut verbs are also -n verbs
 - The fact that the only ablaut effects that emerge in the participle are those that affect segment-internal structure only would be random in any account that does not appeal to phonological structure.
 - The fact that only the nasal(C)-final roots lack overt -n in the participle would also be random in a non-phonological account.

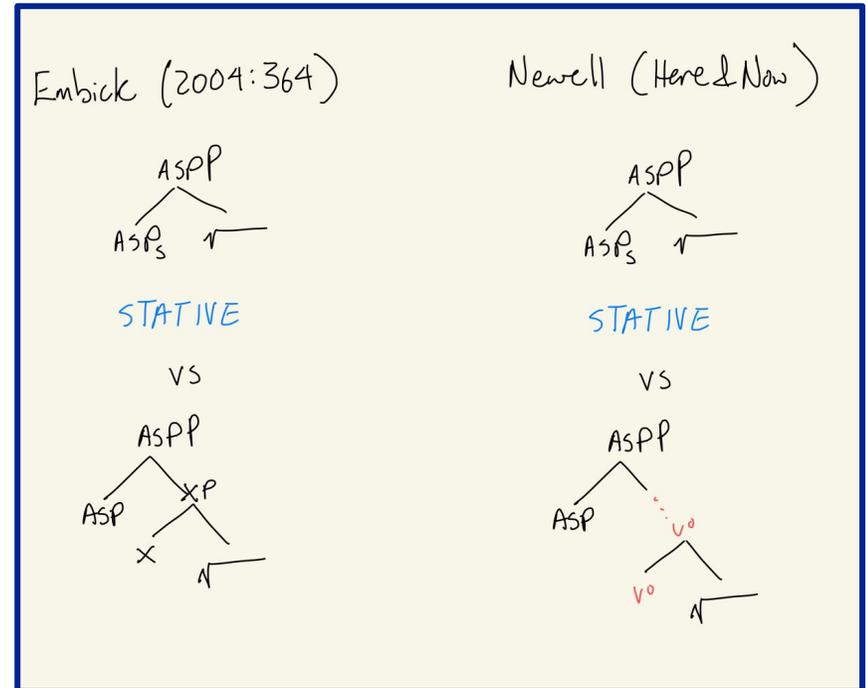
Computational/syntactic conclusions

- The regular **PA** morpheme *must be* computed phonologically in a separate cycle from the root (contra Embick 2010).
 - And therefore, all other affixes that emerge in the same syntactic position are also computed in a separate domain from the root.
- Therefore the verb root does not condition allomorphy of the **PA** - a theme vowel does
 - The ablaut vowels are the realization of theme vowels
- The account proposed here brings English in alignment with other languages where the verb spells out low in the VP (Ojibwe, Chukchansi Yokuts, Turkish, Cupeño, Malagasy, Chichewa....) and Tense morphology is demonstrably in a separate syntactic and phonological domain.
- There is no Phonological PIC
 - Phonological Merger is triggered across cycles.

Is there *any* root-conditioned allomorphy in the verbal system.

Yes.

- As argued in Embick (2003, 2004), there is root conditioned allomorphy of ASP (my PA).
- Embick proposes that ASP can be merged to the root or farther away.
- This analysis is consistent with the proposal that PA allomorphy is normally conditioned by v^0 /Class, but in the stative is also conditioned by the root itself.
 - The *èd/èn* suffixes are allomorphs of ASP that contain a vowel in their UR.
 - The final NC of *sunk* and the nasal C in *-en* are therefore separated by an overt vowel and both are pronounced.
- That root-conditioned allomorphy can select for distinct suffixes gives additional evidence that the PA allomorphs are not conditioned by the roots themselves in the non-stative derivations.



Root	Stative	Resultative	Eventive passive
√BLESS	bless-èd	bless-ed	bless-ed
√AGE	ag-èd	ag-ed	ag-ed
√ROT	rott-en	rott-ed	rott-ed
√SINK	sunk-en	sunk-∅	sunk-∅
√SHAVE	(clean)-shav-en	shav-ed	shav-ed
√OPEN	open-∅	open-ed	open-ed
√EMPTY	empty-∅	empti-ed	empti-ed
√DRY	dry-∅	dri-ed	dri-ed

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Appendices

On the-ot forms, the different classes of Strong irregulars that end in a single non-nasal C, the ‘real’ irregulars, and the allomorphy/syntax.

Appendix 1:

A distributional table of English Irregular Verbs

(Including the weird ones that
don't fit nicely)

UR-Ab-UR (phonological blocking)	underlying	surface
eat-ate-eaten (1)	[i:]-[e:]-[e:]	[i:]-[e:]-[i:]
bid-bade-bidden (2(1))	[ɪ]-[e:] (or [æ])-[e:] (or [æ])	[ɪ]-[e:] (or [æ])
hide-hid-hidden (2)	[aɪ]-[ɪ]-[ɪ]	[aɪ]-[ɪ]-[ɪ]
take-took-taken (3)	[e:]-[ʊ]-[ʊ]	[e:]-[ʊ]-[e:]
fall-fell-fallen (1)	[ɑ:]-[ɛ]-[ɛ]	[ɑ:]-[ɛ]-[ɑ:]
drive-drove-driven (8)	[aɪ]-[o:]-[o:]	[aɪ]-[o:]-[ɪ]
draw-drew-drawn (1)	[ɑ:]-[u:]-[u:]	[ɑ:]-[u:]-[ɑ:]
grow-grew-grown (4)	[o:]-[u:]-[u:]	[o:]-[u:]-[o:]
slay-slew-slain (1)	[e:]-[u:]-[u:]	[e:]-[u:]-[e:]
see-saw-seen (1)	[i:]-[ɑ:]-[ɑ:]	[i:]-[ɑ:]-[i:]

UR-Ab-Ab (no phonological blocking)	underlying	surface
wake-woke-woken (5)	[e:]-[o:]-[o:]	[e:]-[o:]-[o:]
choose-chose-chosen (1)	[u:]-[o:]-[o:]	[u:]-[o:]-[o:]
freeze-froze-frozen (4)	[i:]-[o:]-[o:]	[i:]-[o:]-[o:]
get-got-gotten (2)	[ɛ]-[ɔ]-[ɔ]	[ɛ]-[ɔ]-[ɔ]
find-found-found (4)	[aɪ]-[aw]-[aw]	[aɪ]-[aw]-[aw]

UR-Ab-Empty (phonological blocking)	underlying	surface
come-came-come (1)	[ʌ]-[e]-[e]	[ʌ]-[e]-[ʌ]
drink-drank-drunk (9)	[ɪ]-[æ]-[æ]	[ɪ]-[æ]-[ʌ]
run-ran-run (1)	[ʌ]-[æ]-[æ]	[ʌ]-[æ]-[ʌ]
fling-flung-flung (10)	[ɪ]-[ʌ]-[ʌ]	[ɪ]-[ʌ]-[ʌ]
hang-hung-hung (1)	[æ]-[ʌ]-[ʌ]	[æ]-[ʌ]-[ʌ]

Weird	underlying	surface
hold-held-held (non-o remains in participle) (1)		[o]-[ɛ]-[ɛ]
tell-told-told sell-sold-sold (apparently mixed class) (2)		[ɛ]-[o]-[o]
stand-stood-stood (behaves like the UR-Ab-Ab verbs, but has no N and the vowel is [ʊ]) (1)		[æ]-[ʊ]-[ʊ]
shine-shone-shone (ends in a nasal, but maintains ablaut in the participle, and it's not the expected [aw] of an UR-Ab-Ab verb) (1)		[aɪ]-[ɔ]-[ɔ]

Irregular verb count:

67 ablaut verbs (counting the 'weird')

54 weak irregular verbs (no ablaut)

5 'real irregulars' (Appendix 4)

NB. that I am not counting prefixed forms unless it is the only one (e.g., bereave)

Appendix 2:

The sub-types of Class 1

Class 1 : Subtype 1

Verbs with a diphthong (always [aj]) and a single final C in their UR (e.g., **drive-drove-driven**)

- These verbs take an [o] or [ɪ] ablaut in the **PA**, and then undergo regular shortening of [aj] to [ɪ] in the participle (c.f. Tri-syllabic shortening: *deride-derisive*).
- Other verbs in this class: **bite-bit-bitten, hide-hid-hidden, ride-rode-ridden, rise-rose-risen, shrive-shrove-shriven, smite-smote-smitten, stride-strode-stridden, strive-strove-striven, write-wrote-written**

Class 1: Subtype 2

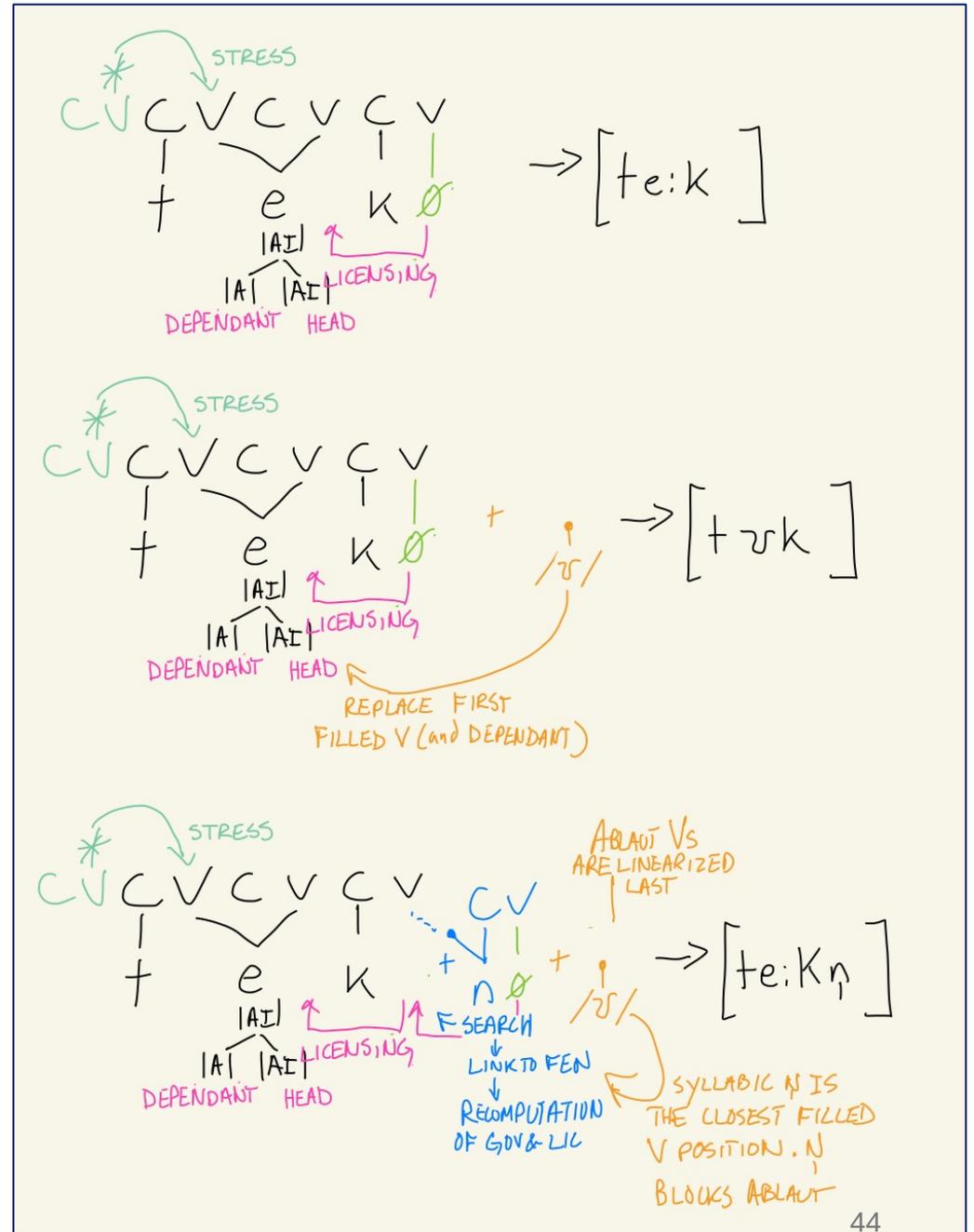
Past-Ablauting verbs ending in a single C that don't have a diphthong in their UR and revert to their UR vowel in the Participle. (e.g., **fall-fell-fallen**)

- Ablaut in these verbs demonstrates no stability w.r.t. vowel tenseness/length is not stable here. The whole vowel is being replaced, but reverts to the lexical default in the participle:
 - long → short: [te:k] *take* ~ [tʊk] *took*
 - short → long [gɪv] *give* ~ [ge:v] *gave*
- These verbs demonstrate the same blocking of Ablaut in the -n forms as subtype 1.
 - The ablaut patterns here are : [i:]-[e:], [ɪ]-[e:] (or [æ]), [e:]-[ʊ], [ɑ:]-[ɛ].
- Other verbs in this class: **beat-beat-beaten, bid-bade-bidden, eat-ate-eaten, give-gave-given, forsake-forsook-forsaken, take-took-taken, shake-shook-shaken**

- Here we have 2 separate morphemes deriving the PA and PART.
- Why propose that the ablaut is there even in the passive/participle? Because it is not always blocked (see Class 2).

Phonological derivation

TAKE
TOOK
TAKEN



- Syllabic -n blocks attachment of the vowel, as it is the closest filled-vowel position that is targeted by the theme-vowel. The theme vowel cannot displace a consonant.

Class 1: Subtype 3

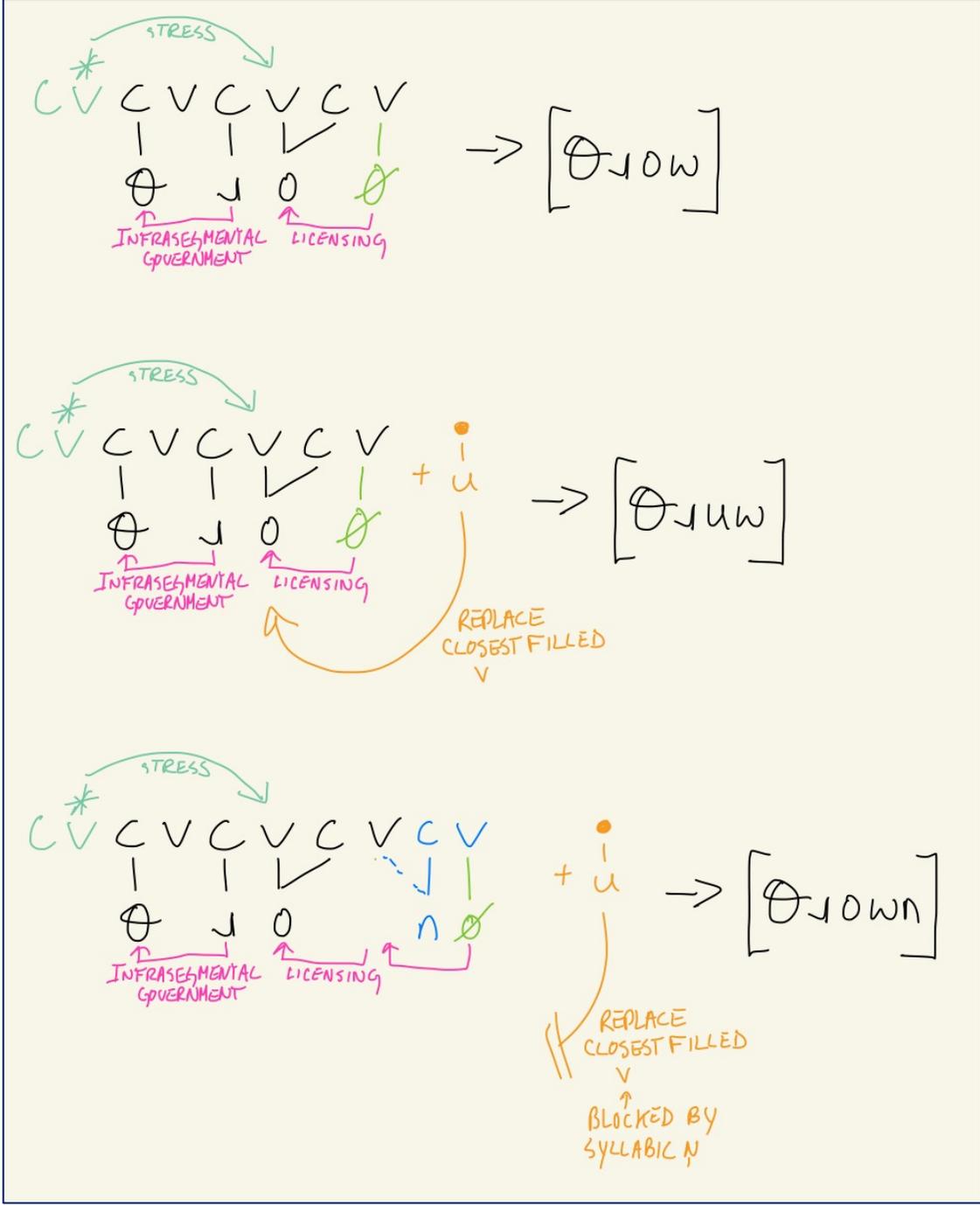
These verbs all end in a vowel and therefore the syllabic -n is not realized as such phonetically (e.g., **blow-blew-blown**)

- Final vowels in English spread into a C position (weight-by-position)
 - Other verbs in this class: **draw-drew-drawn, grow-grew-grown, know-knew-known, slay-slew-slain, see-saw-seen, throw-threw-thrown**
- There is no phonetic syllabic [n] after a sonorant segment on the melodic tier
 - See also *born, sworn, torn* from Class 2.
- This -n is syllabic in the phonological structure : it blocks ablaut.

- The **-n** in these forms *is* phonologically syllabic and blocks the attachment on the theme vowel.
- It is not phonetically syllabic after a glide.

Phonological derivation

THROW
THREW
THROWN



Appendix 3:
-ɔt forms
(e.g., *SEEK-SOUGHT*)

Appendix 4:

The *real* Irregulars

(They are not that irregular, and demonstrate bi-phasal derivations)

be, have, make, do, go

(go is the only real problem wrt allomorphy)

These verbs all conform to the revert-to-UR pattern in the participle, and are only irregular in the Past

The distinctions in the present tense between go/do and make/have are consistent with main verbs being computed in two cycles, and auxiliaries in 1.

- **GO**-went-gone
 - real allomorphy in the past, regular participle
 - [ɔ] in UR, lengthened when unaffixed because of word minimality
- N.B. goes [go:z] vs does [dʌz] is an indication that goes is [[go: _{vP}]z _{CP}] and does is [dʌz _{CP}]
- **DO**-did-done
 - ablaut+d in the past, regular participle
 - [ʊ] in UR, lengthened because of minimality in 'do'

- **MAKE**-makes-made-made
 - -d form
 - floating /k/ in the UR of the root. Not really 'irregular'
- N.B. makes [me:ks] vs has [hæz] is an indication that makes is [[me:k _{vP}]s _{CP}] and has is [hæz _{CP}]
- **HAVE**-has-had-had
 - -d form
 - floating /v/ in the UR of the root. Not really 'irregular'

- **BE**-was/were-been
 - real allomorphy in the past, regular participle.
 - [ɪ] in UR, lengthened because of word minimality unaffixed forms.



Appendix 5: On non-local allomorphy.

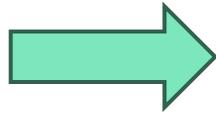
v^0 goes up, affixes are lowered

PROPOSAL :

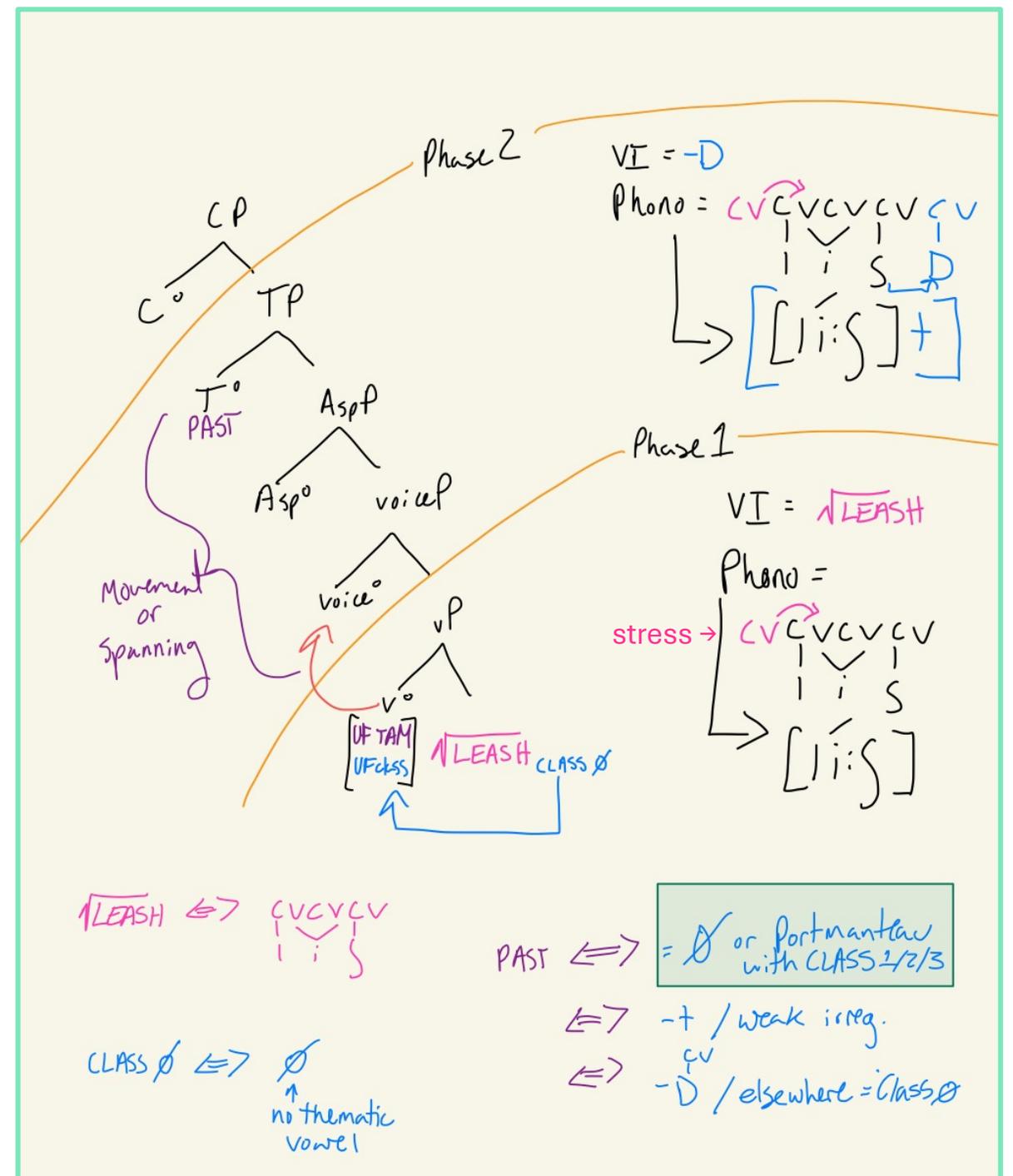
- The Ablaut vowels found in the English PA system are **theme vowels**.
 - This is a different take on English theme vowels than in Kayne (2016) or Collins (2018).
 - English theme vowels are adjoined to/realized on the PA head that checks their unvalued PZ feature.
- Feature valuation may cross phase boundaries?
 - Many works propose that a chain of agreement or feature percolation may traverse boundaries assumed to be phases (e.g., Bjorkman 2011, the literature on long-distance agreement) or across overt morphemes (e.g., Dolatian & Guekguezian 2023).
 - Dolatian & Guekguezian (2023) offers an account of root-conditioned T^0 allomorphy that is anti-local morpho-syntactically (adjacency) and linearly.
 - Bjorkman (2011) accounts for auxiliary insertion when agreement between a low root and a high (possibly extra-phasal) head is non-local for AGREE.
- I argue that PA affixal allomorphy is accomplished either by head-movement of the v^0 head, or spanning.

Regular PA forms are derived in 2 PHASES.

Phonological and Syntactic derivation

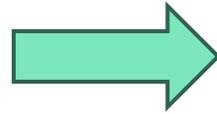


- v^0 merges with the root.
- The unvalued Class feature on v^0 is valued by the root. Regular verbs = Class \emptyset
- The v^0 head also has an unvalued TAM feature.
 - I am assuming a foot-driven movement system as in Bosković (2007)
- The v^0 head raises to voice^0 before transfer (due to its UF_{TAM}) and is therefore not spelled-out in the first phase.
- **Phase 1:** The root undergoes VI and phonology.
 - Its final consonant is followed by an empty V position/is extrametrical.
- **Phase 2:** The class features on v^0 and the PA on T^0 co-condition VI.
 - The -d morpheme does not undergo phonological merger. It is also extrametrical in its domain.
- The root and T^0 do not interact directly.

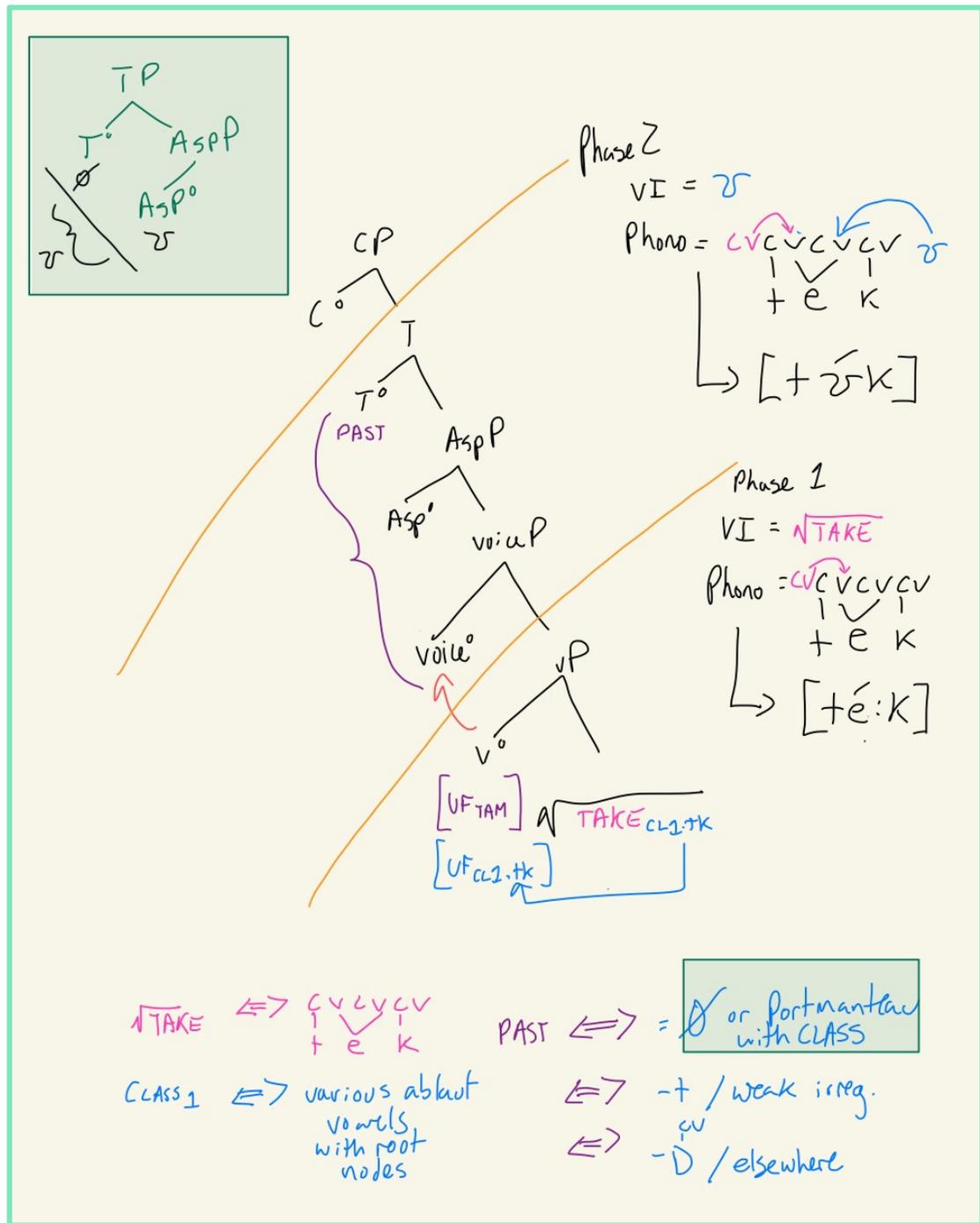


- The Theme Vowel of Class 1 verbs is overt in the PA.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
 - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

Phonological and Syntactic derivation



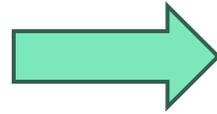
TAKE
TOOK



- The derivation occurs in 2 cycles.
- The Theme vowel targets the closest filled V position. This is also the stressed V, as all irregular verb roots are monosyllabic.

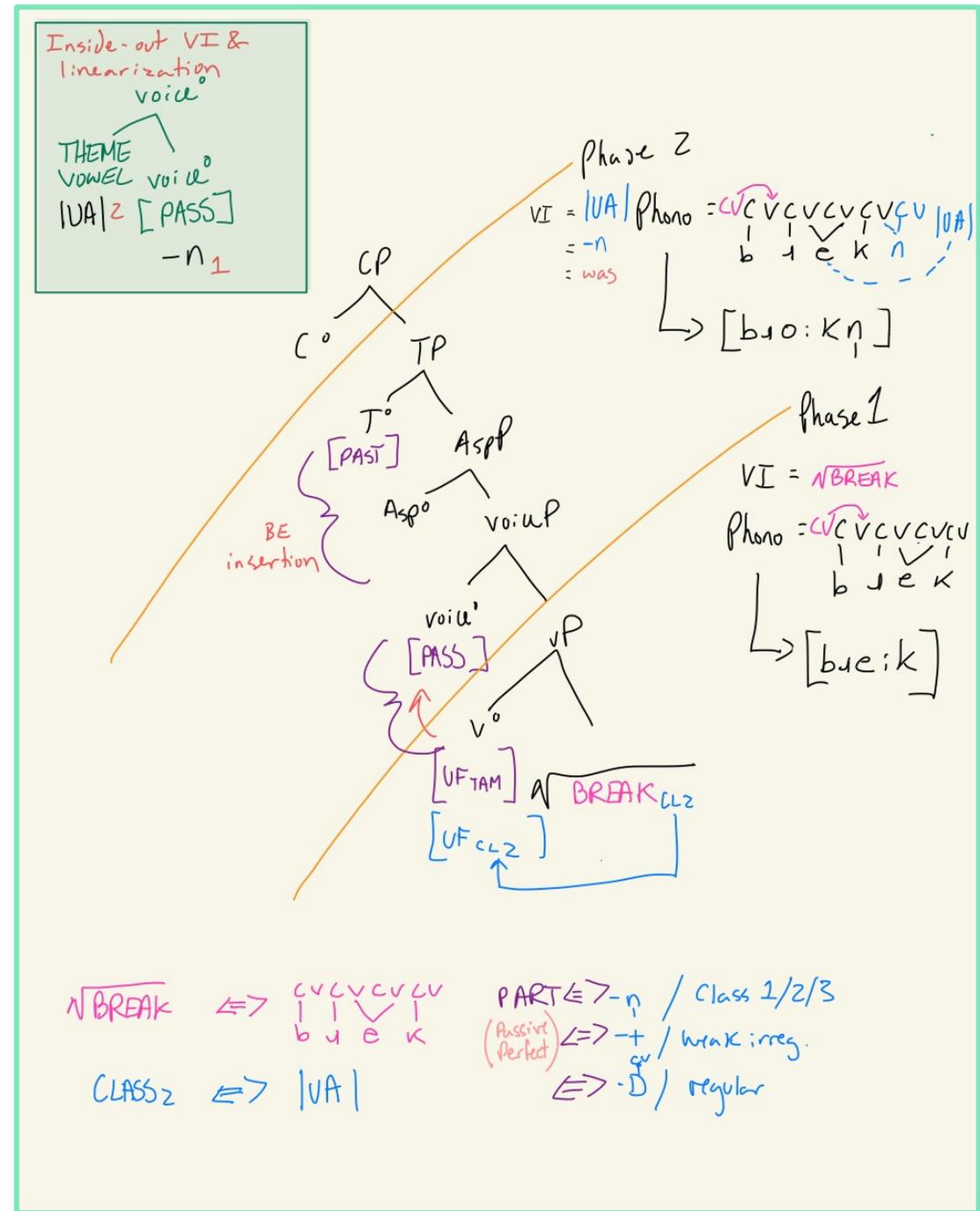
- The Theme Vowel of Class 2 verbs is overt in the **PA**.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
 - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

Phonological and Syntactic derivation



BREAK
BROKEN

- Sub-segmental Ablaut is not blocked by a syllabic nasal, as it is not targeting a segmental Root Node, but rather a position inside the melodic structure of the closest vowel.



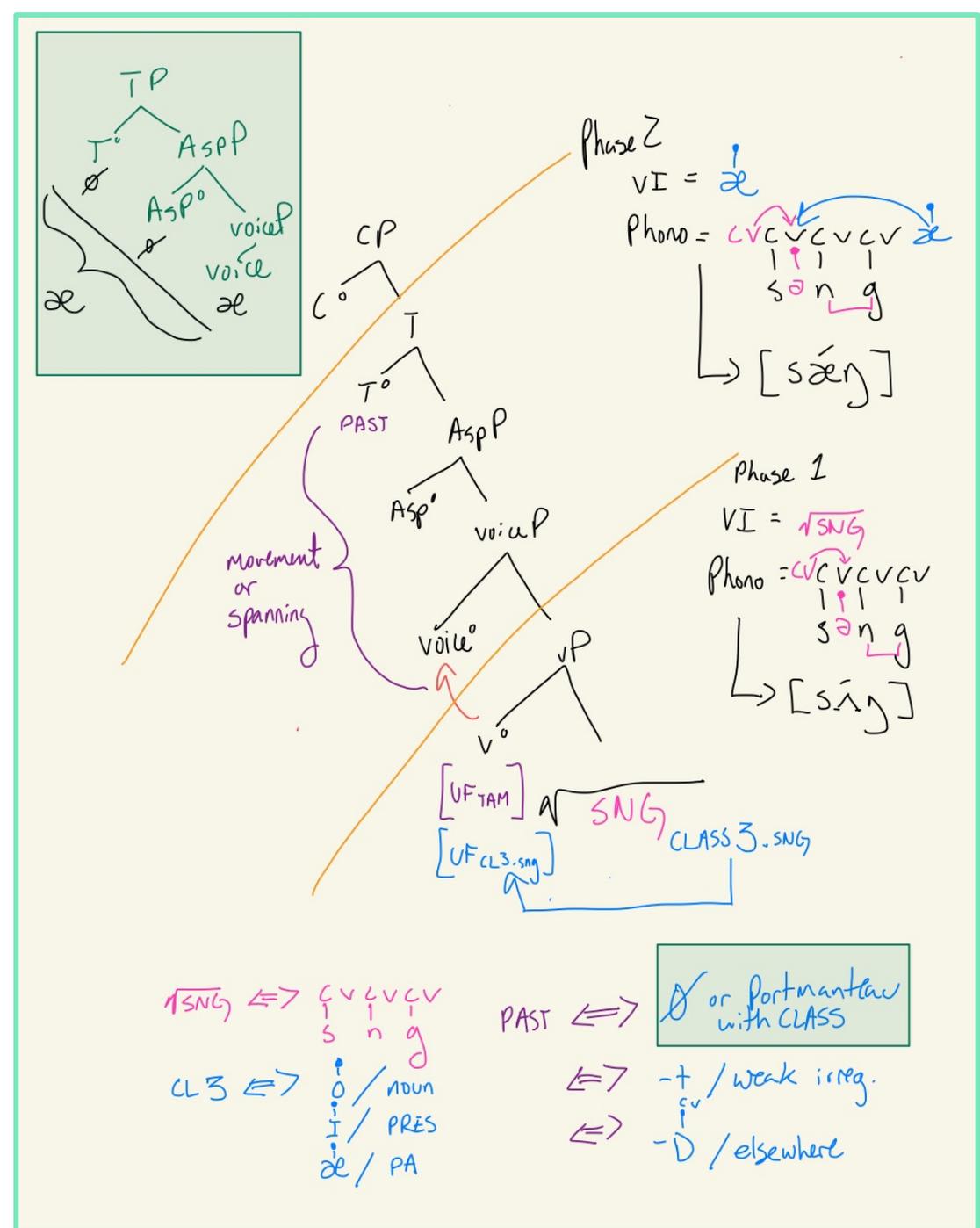
- Here the UR of the verb contains no vowel.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
 - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

Phonological and Syntactic derivation



SING
SANG

- The derivation occurs in 2 cycles.
- The Theme vowel targets the closest filled V position. This is also the stressed V, as all irregular verb roots are monosyllabic.
- An empty V position is realized as **schwa**;
 - /ə/ is realized as [ʌ] when stressed.



Conclusions to Appendix 5

- Most English inflectional morphemes contain (or consist entirely of) floating phonological structure.
 - Note that in this account there is no $-\emptyset$ Past Tense allomorph in the weak verb paradigm. All non-pronunciation of $-t$, $-n$, or ablaut is derived phonologically.
 - Many derivational affixes in English are also underspecified for syllabic structure (Newell 2021)
- As there is no PIC in the phonology, these underspecified morphemes will merge within the phonological structure of a previously computed phase.
- The root stays low, and v^0 raises. This looks just like systems where an auxiliary hosts TAM morphology and leaves the verbal root low.
- The ‘double exponence’ in the PA system is cross-linguistically ‘normal’ if ablaut the realization of Thematic vowels.
- We do not need ‘pruning’ (Embick 2010) to capture allomorphy across null morphemes.



Dialect variation?

- Dialect variation needs to be accounted for. Some is quite predictable:
- **Take-took-tooken** patterns are derivable in grammars where valuation of v^0 's TAM feature is done via Agree rather than movement.
 - If v^0 is valued via Agree (a common process, so not hard for the learner to implement), it is spelled out closer to the root than the head where -n is realized. It is linearly closer to the root and cannot be blocked.
- **Sing-sang-sang** patterns are derivable if the Class 3 verbs are reanalyzed as taking a zero-morpheme in the PA rather than -n.
 - As -n is never pronounced in these forms, this is not a big leap for the learner.