English Irregular Verbs Do Not Condition Allomorphy on T (or vice versa)

Workshop on Myopia in Grammar

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Take-Home Message

The ‘irregular’ alternations in the Present / Past / Passive~Perfect Participle are derived via the *regular phonology* of English :

leave-left-left
bear-bore-born
fly-flew-flew
sing-sang-sung

1. English verbal allomorphy is restricted to TAM affixes/auxiliaries.
2. Main verbs display no root allomorphy.
    - (let’s leave GO out of this)
3. The phonology of English verb derivations demonstrates that they are computed in 2 cycles.
4. The allomorphy of English TAM affixes is mediated by Theme Vowels.
    - Spanning/raising accounts are both consistent with this proposal.
    - There is no PIC.

Roadmap of the talk

- Brief discussion of the problem with Embick (2010)'s account of English irregular verb derivation.
- What the phonology of English regular verbs shows us about English verb derivation.
- How the phonology of English irregular verbs shows us the same thing, and more.
- Conclusions and implications.

A brief discussion of the problem with Embick (2010)'s account of English irregular verb derivation.

Are T^0 and the verb root in the same PF cycle?

Embick (2010) : Yes

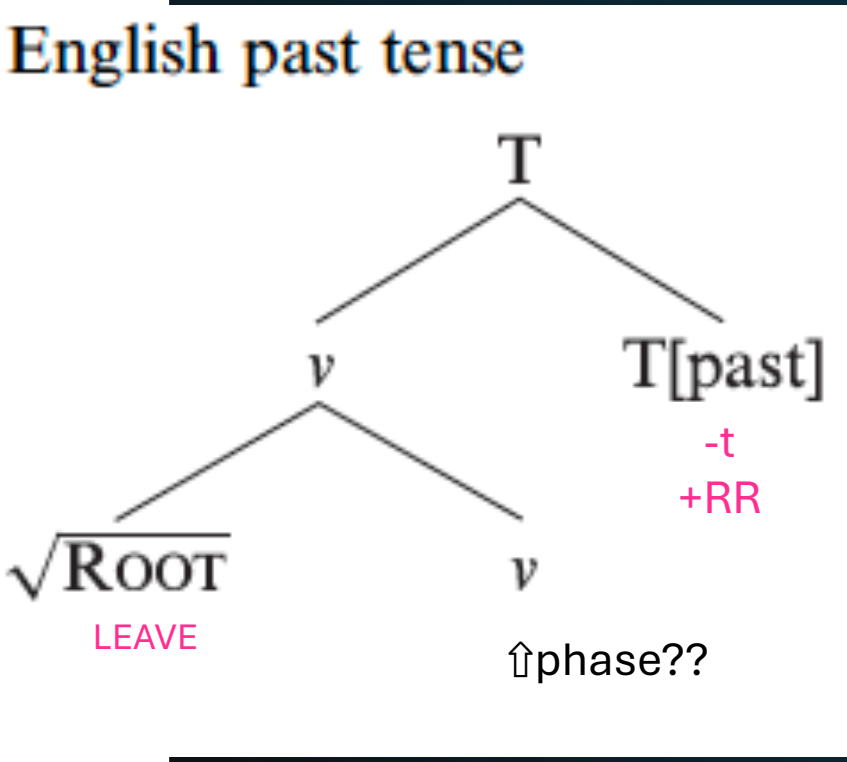
Readjustment Activity Hypothesis (Embick 2010:101)

- **A readjustment rule triggered by morpheme X can effect a Root- or morpheme-specific change only when X and the Root/functional head are in the same PF cycle.**

- In Embick's system, the v Phase does not induce a cycle of PF/spell-out as it does not, itself, contain a phase.
  - **(SO1) When cyclic head x is merged, cyclic domains in the complement of x are spelled out.** (51)

Newell (2024, here): No.

T^0 and the verb root are demonstrably not in the same PF cycle



Necessary Phonological Assumptions

- **CVCV phonology**
  - I will not go through the details of the CVCV derivations, and I have not included all the details of the CVCV representations.
  - I will point out what is crucial and will translate the derivations into vocabulary familiar to all.

- **Autosegmental representations and underspecification**
  - Underspecification can be at the segmental or the syllabic level.
  - Underspecified representations initiate a search operation into available phonological domains.
  - This search operation leads to the **Phonological Merger** (Newell & Piggott 2014) of morphemes introduced in separate cycles *iff* it leads to the re-computation of some structure in the already-spelled-out phase.
  - Default phonological objects may emerge when phonological operations are blocked.

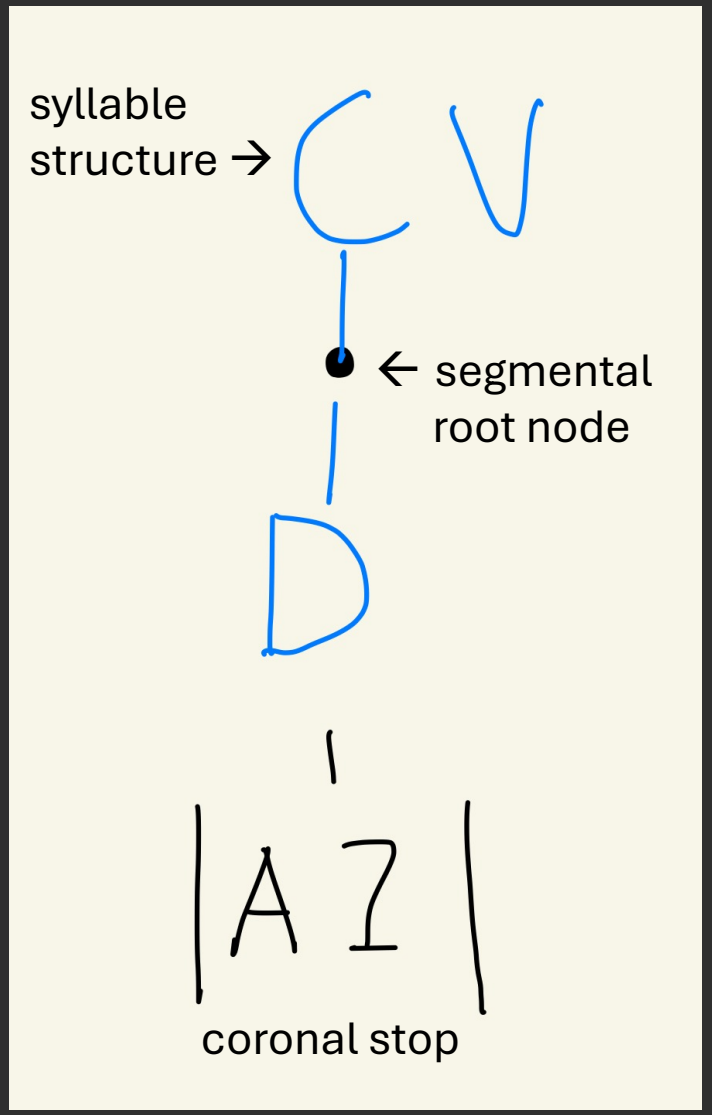
Syntactic Proposal

- **English has a synchronically active system of Theme Vowels**.
- These vowels are exponents of verb class and are realized on a verbalizing head.
  - The Theme Vowels can be the v^0 head itself (as in Fabrégas 2019), but this requires that head-movement occur in the syntax.
  - The Theme Vowels can be dissociated morphemes merged to a syntactic head (as in Oltra-Massuet 1999, Oltra-Massuet & Arregi 2005, see also Grestenberger (2022) for Greek). In this case head-movement or spanning analyses are possible.
- English theme vowels are only realized overtly when they agree with a head that triggers an overt allomorph.
  - Here I assume the v^0 categorizing head carries an unvalued TAM feature that is valued by a feature I will call PA, shared by the PAST/PARTICIPLE (and by PRESENT for zero-grade verbs (e.g, SING)).
  - It is notably the realization of a distinct head from the one that realizes the PARTICIPLE suffix, which may be realized concurrently with the theme vowel (as *-n*).
- Morphology:
  - The Theme Vowel head is linearized to the right of the -n morpheme at VI.
  - It is therefore clearly not the output of a Readjustment Rule, as RRs do not have linear positions in the structure.

What the phonology of English regular verbs shows us about English verb derivation.

The English Regular Past Tense (and friends)

- Consider, e.g., *LEASH-LEASHED*
  - [liːʃt] (a superheavy syllable) is an impossible sequence inside a single phonological domain in English. (Closed Syllable Shortening (Kiparsky 1968, 1982)
    - *greemp, *lookt, *baishk (cf. exceptions for coronal sequences; *fiend*)
  - A surface form like 'leashed' [[liːʃ] t] is ***only*** permitted as a bi-cyclic derivation.
    - Each domain can have one 'extrametrical' consonant.
    - N.B. that this is true for the exponents of the regular Past, Passive, and Perfect Participle derivations (PA).
  - Consider also the *-ing* (e.g. *bottling* = *3 syllables*) and 3sg *-s* (e.g. *zooms*) bi-cyclic forms.
- All regular verbal derivation in English gives *positive* evidence from syllabification that the root and the affixes are computed in separate phonological cycles.



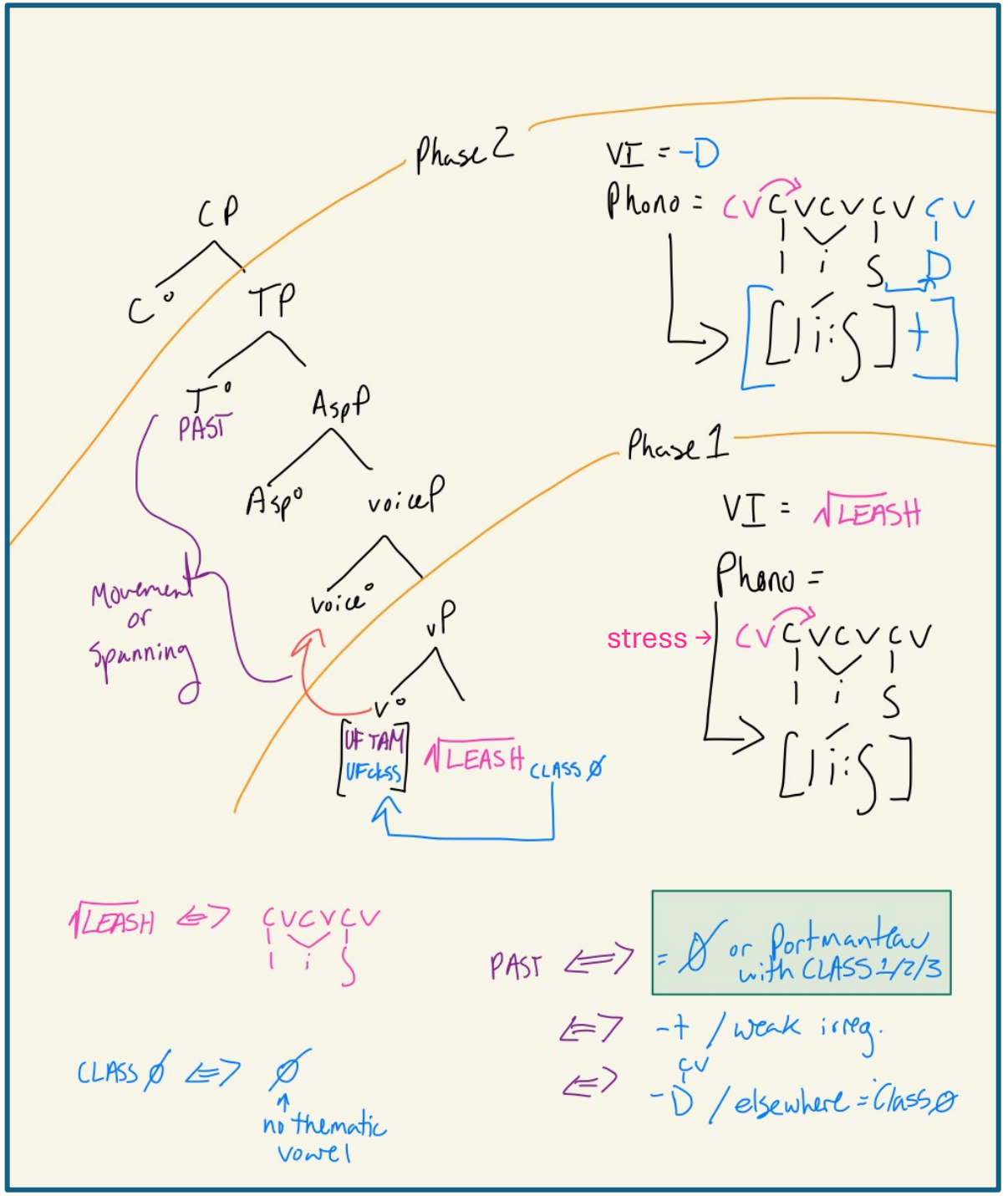
Regular -D forms
(e.g., CONJUGATE, CONJUGATED)

- The Regular Pattern in the PA (Passive/Participle/Past)
  - -D : underspecified for voice, specified for syllable structure (not floating/liaison)
  - -D forms cause neither shortening nor ablaut.
  - -D forms have no restrictions on the size of the base.
  - REGULAR -D FORMS MUST BE BI-PHASAL

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 ∅
- 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.



How the phonology of English irregular verbs shows us the same thing, and more.

English Irregular verb derivations are demonstrably piece-based.

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)

- Clearly, irregular verbs have the same syntax as regular verbs. We therefore expect them to be computed in 2 phases/cycles. They are.

The following analysis of the English Irregular PA morphemes is part of a long history of autosegmental / underspecification / piece-based analyses

- These are more explanatory than readjustment, allomorphic, or purely output-oriented analyses of semi-regular phonological operations.

Here are a few recent (and not so recent) examples of autosegmental piece-based analyses that I really like:

- Trommer (2021) : German plural umlaut
- Zimmermann (2021) : Double Reduplication
- Newell (2021) : English Level 1 / Level 2 derivation
- Faust, Lampitelli & Ulfsbjorninn (2018) : Italian articles
- Bucci (2018) : Coratino vowel reduction
- Lowenstamm (1996) : Chaha feminine imperative palatalization

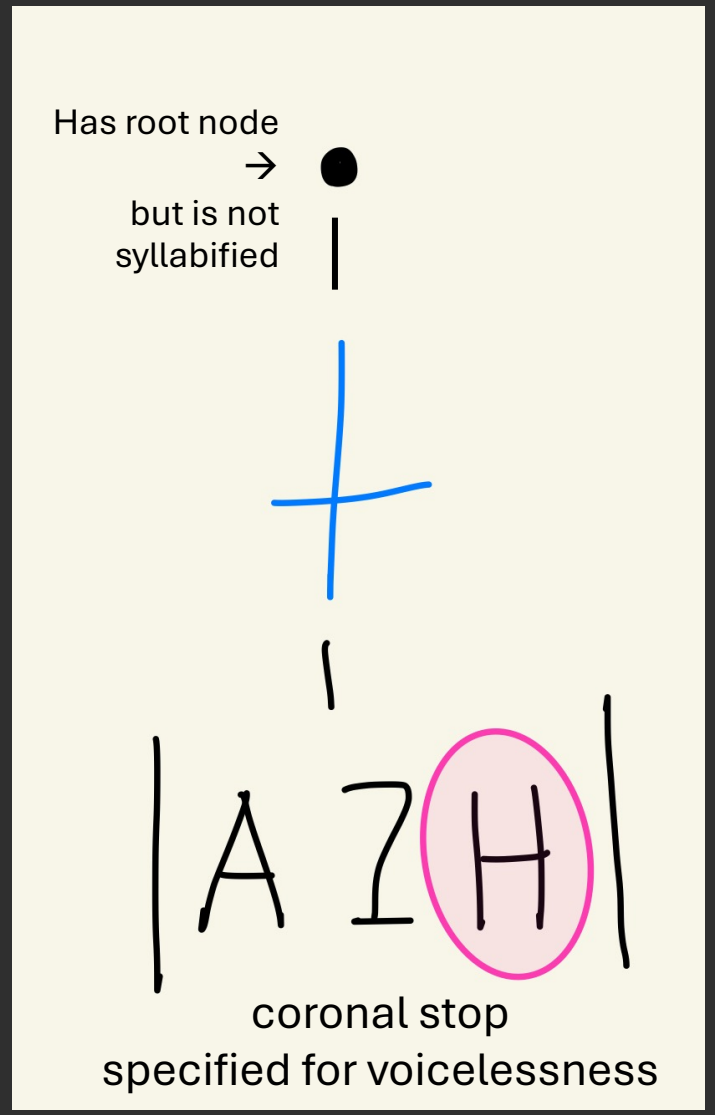
This list is not even close to exhaustive.

Underspecified Morphemes are the source of 'semi-regular' phonological patterns

Weak Irregulars : *-t forms*

These derivations never involve ablaut.

Changes in vowel quality are due to loss of structure in the representation of the vowel under closed syllable shortening.



Weak Irregular -t forms (e.g., LEAVE-LEFT)

- The weak irregular pattern
- -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
    - virtual geminates are not phonetic geminates: e.g., lead-led, lend-lent.

- -t WILL HAVE 'LEVEL 1'-TYPE PHONOLOGY EVEN IF INSERTED IN A SEPARATE PHASE FROM ITS BASE.
    - See Newell (2021) for a similar analysis of English derivational morphology : Level 1 morphemes in English have initial floating segments.

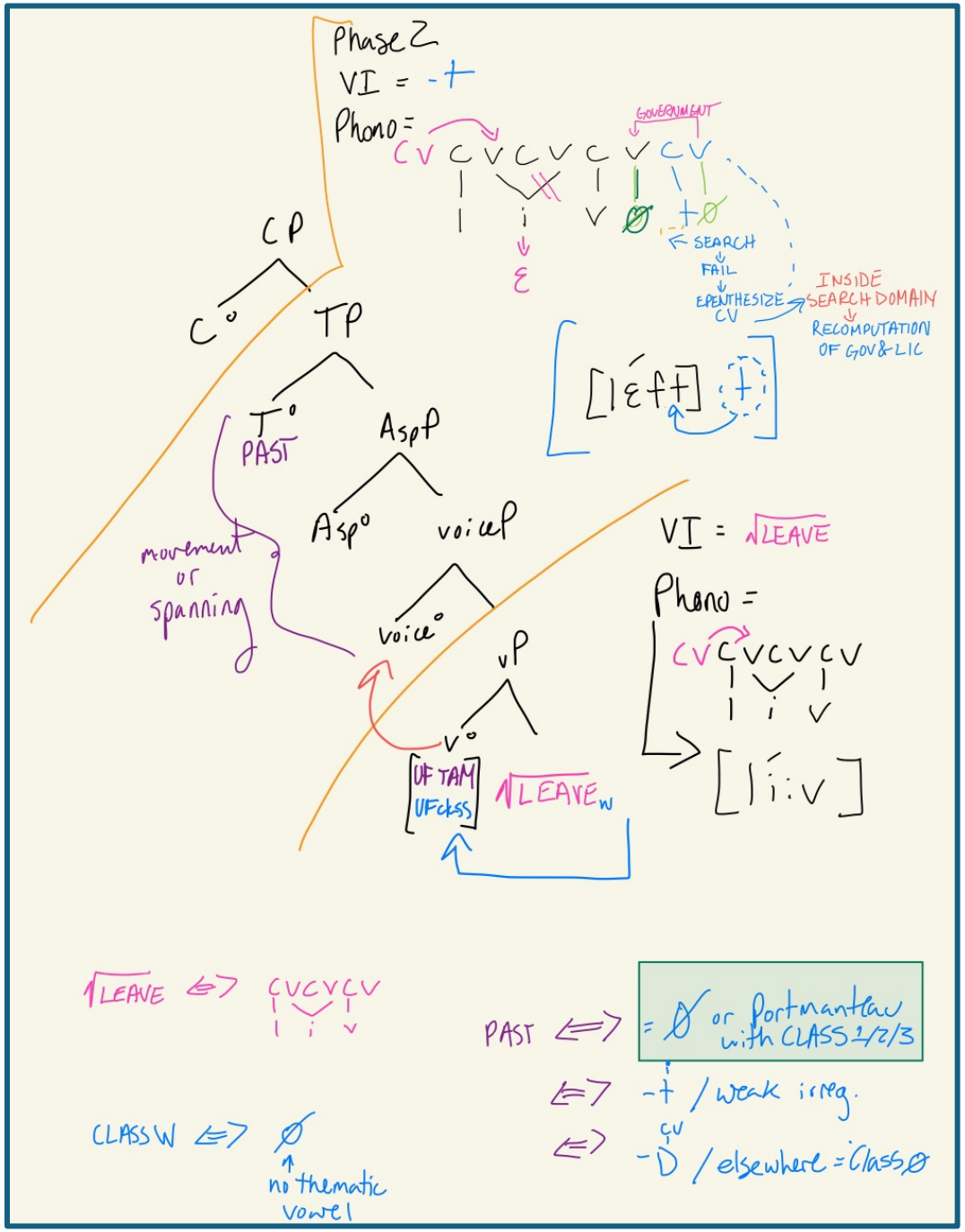
- Floating structure probes into a previously-computed string;
  - there is only one FINAL EXTRAMETRICAL C in a syllabified string.
- Once probing/search applies repair strategies (epenthesis, syllabification) are triggered when necessary.
- These derivations are synchronically active (contra Kaye 1995)
- This type of interaction is akin to liaison in French, or the incorporation of featural/tonal morphemes into an adjacent phonological domain. It is regular phonology.

Phonological and Syntactic derivation

LEAVE

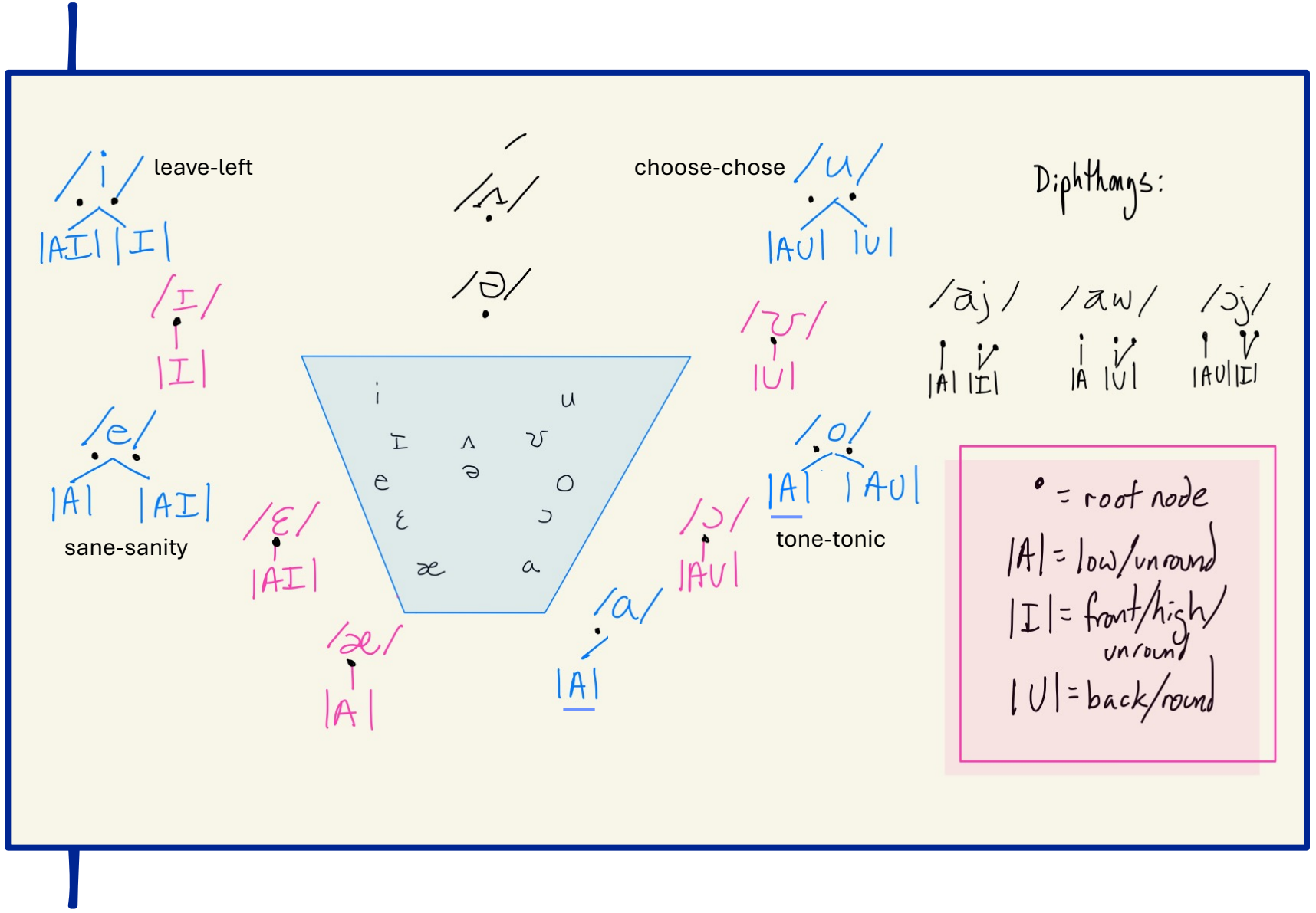
LEFT

∴ Weak Irregular PA forms appear to be 'Level 1/ monocyclic' but they are also derived in 2 PHASES.



Vocalic Structure

- Element/Particle Theory
  - (Schane 2001, Szigetvári 2016, Pöchtrager 2015, Polgárdi 2015 - inspired)
- The English Tense-Lax distinction is also Long-Short.
  - Long vowels also have more internal structure than short vowels.
  - Shortening of a long vowel reduces its structure, changing its quality.
  - All dependants of long vowels contain |A| and this entails that lowering will result from shortening.
  - If the head of a diphthong vocalizes, the resulting hiatus will be resolved by deletion.



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

Also:

See Appendix 3 for the -ɔt forms (e.g., seek-sought)

See Appendix 4 for some thoughts on the ‘real irregulars’ (aux)

Class 1- Segmental Ablaut (e.g., TAKE-TOOK-TAKEN)

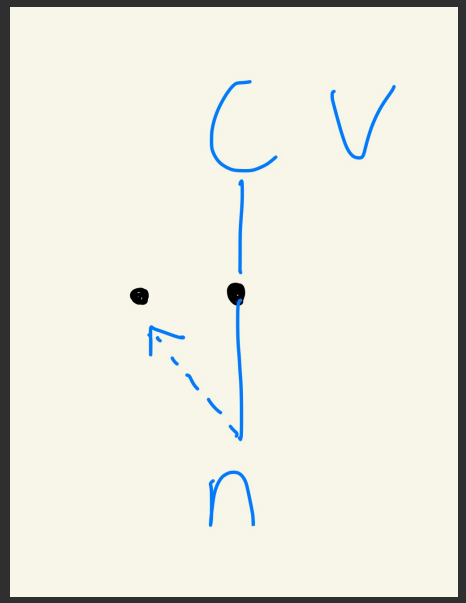
In which the ablaut vowel is blocked in the Participle

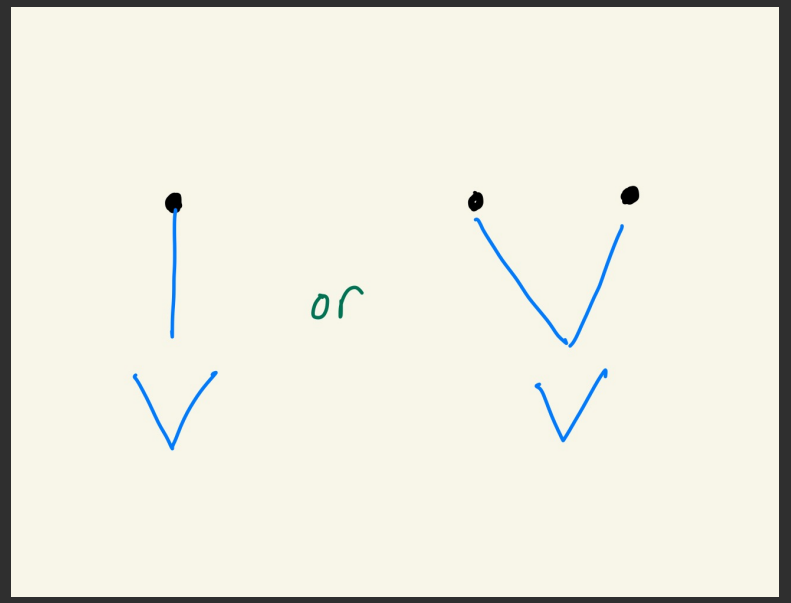
- This class includes all ablauting verbs that end in a single non-nasal consonant in the infinitive.
- The subclasses all show at least some unpredictable variation in their vowel alternations.
  - Subtype 1: bases with the underlying diphthong [aj] : *drive-drove-driven, hide-hid-hidden*
  - Subtype 2: bases that end in an offglide : *blow-blew-blown, see-saw-seen*
  - Subtype 3: bases that show unpredictable variation in ablaut quality and quantity :

    long → short: [te:k] *take* ~ [tʊk] *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.



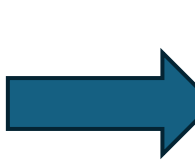


The -n morpheme, and the full-vowel ablaut allomorphs

- The -n Vocabulary Item is a nasal C specified to branch onto a V position : an underspecified syllabic nasal.
  - It is selected for by all ablauting verbs.
- The ablaut allomorphs in class 1 are selected for by 1 or more roots. 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.
  - Vowel-replacement is the same type of operation as a feature-changing rule (as opposed to a feature-filling rule).

- 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

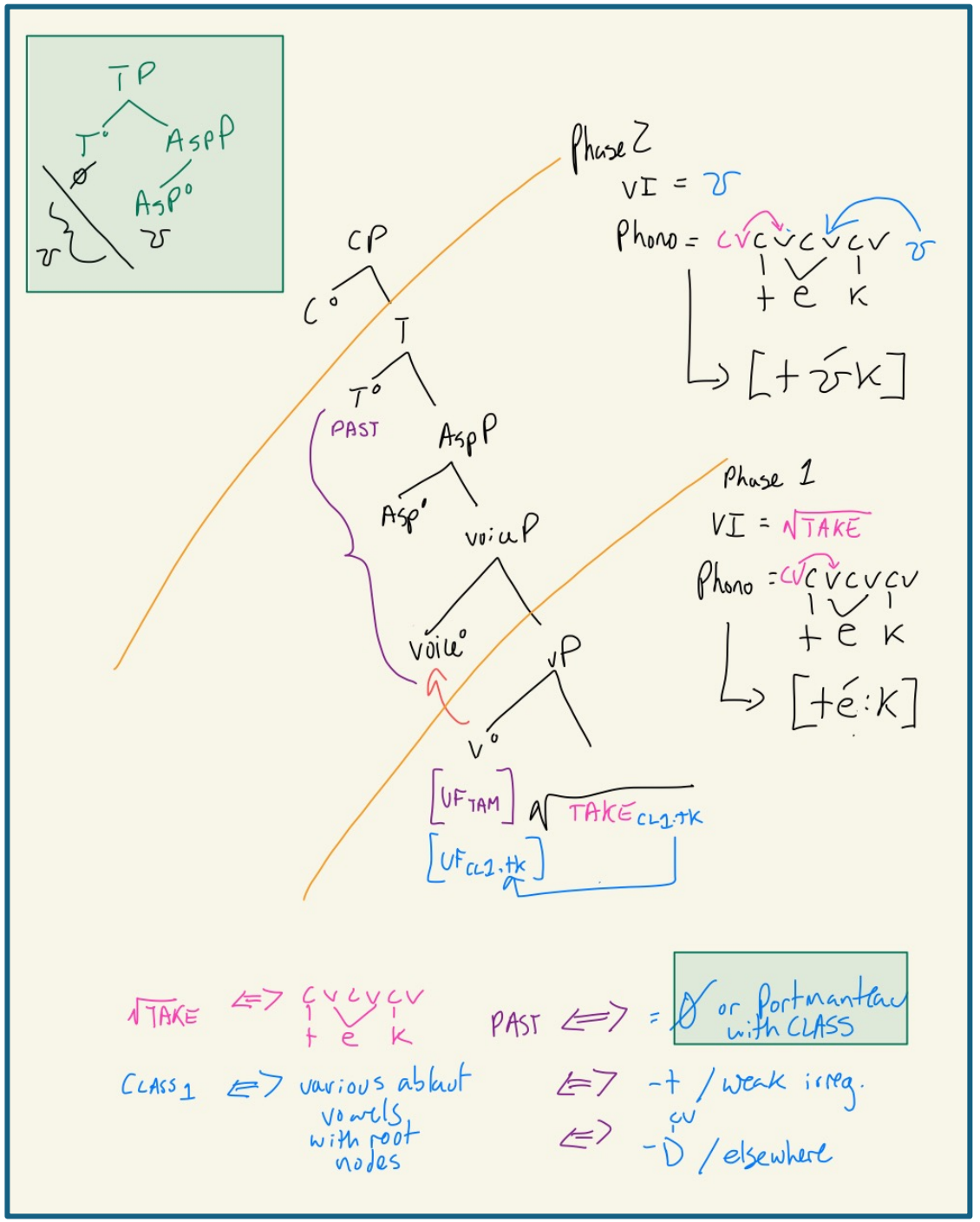
Phonological and Syntactic derivation



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.



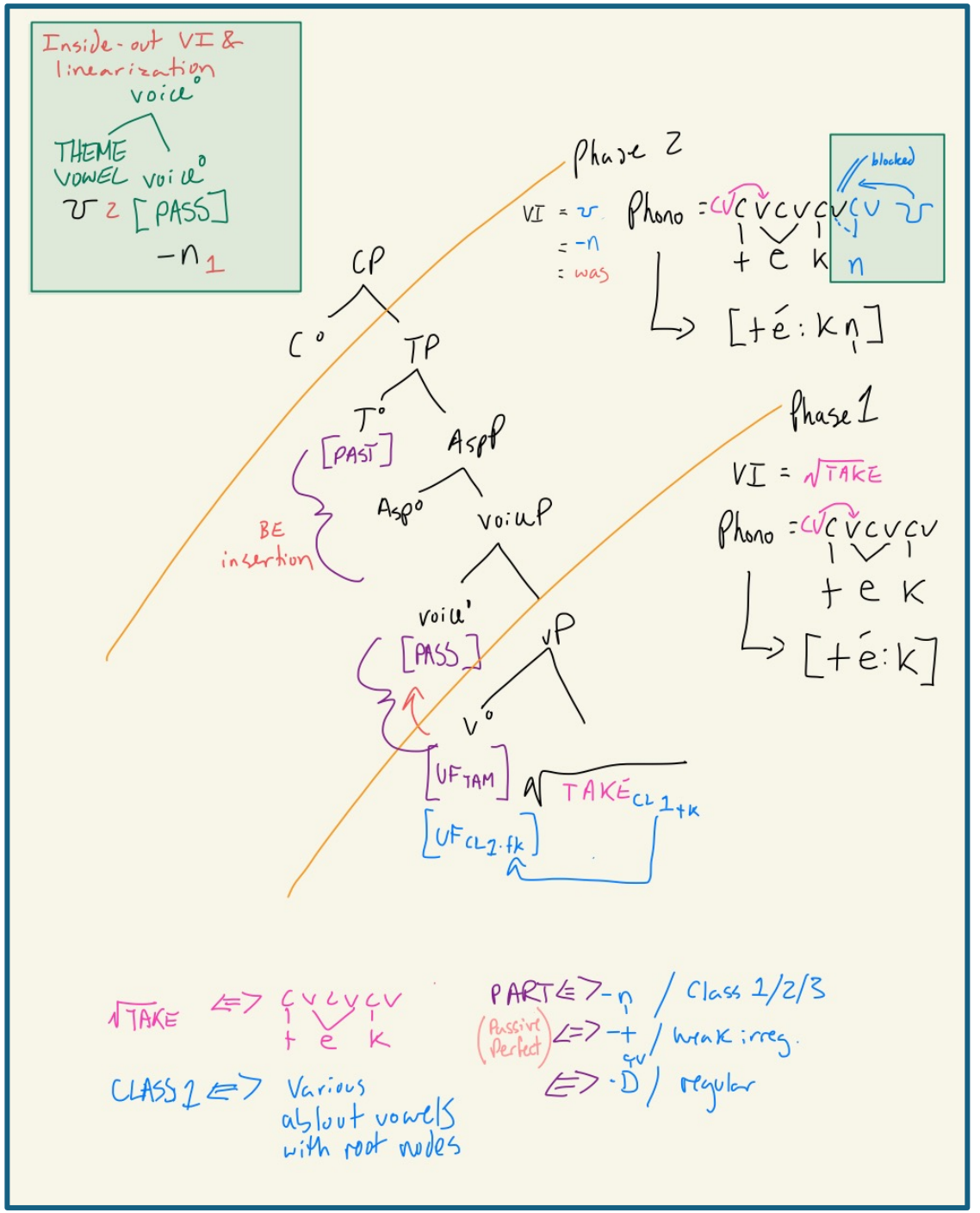
- The Theme Vowel of Class 1 verbs is overt in the PA.
- The Participle suffix for all Strong Irregular verbs is -n.
- In Class 1 the -n is realized on the surface.
- The realization of the syllabic nasal blocks the association of the Theme Vowel, as the closest filled V is now an illicit target/blocker.
    - This blocking could be due to its C-structure, or due to it not being (linked to a) stressed (position).

Phonological and Syntactic derivation

TAKE

TAKEN

- VI occurs from the inside out : the -n suffix is inserted and linearized prior to the Theme Vowel and is therefore a phonological intervener.
    - This falls out of the structure derived via head-movement.
    - A spanning account can also be consistent with this VI order if the Theme Vowel is a Dissociated Morpheme and is merged after VI of -n.



Class 2 - Featural Ablaut (e.g., BREAK-BROKE-BROKEN)

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] : it is back and round.
  - The ablaut never changes the syllabic properties of the underlying vowel of the root.
    - Long vowels stay long; Short vowels stay short; Diphthongs stay diphthongs.
  - 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 in the infinitive.
    - 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 (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

back round vowel features
no root node = not a segment

- This allomorph modifies the quality of the vowel of the base, but never interacts with or alters vowel 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 (feature-changing):
    - The local vowel is targeted (|AU| is suffixal)
    - |A| is added where possible (lowering/backing)
    - |U| too, and it replaces |I| (antagonistic elements)
    - (only the head glide of diphthongs is local)
  - This linking is not blocked by consonants, syllabic or otherwise, as it occurs strictly within the melodic tier to vocalic structure (as in Vowel Harmony).

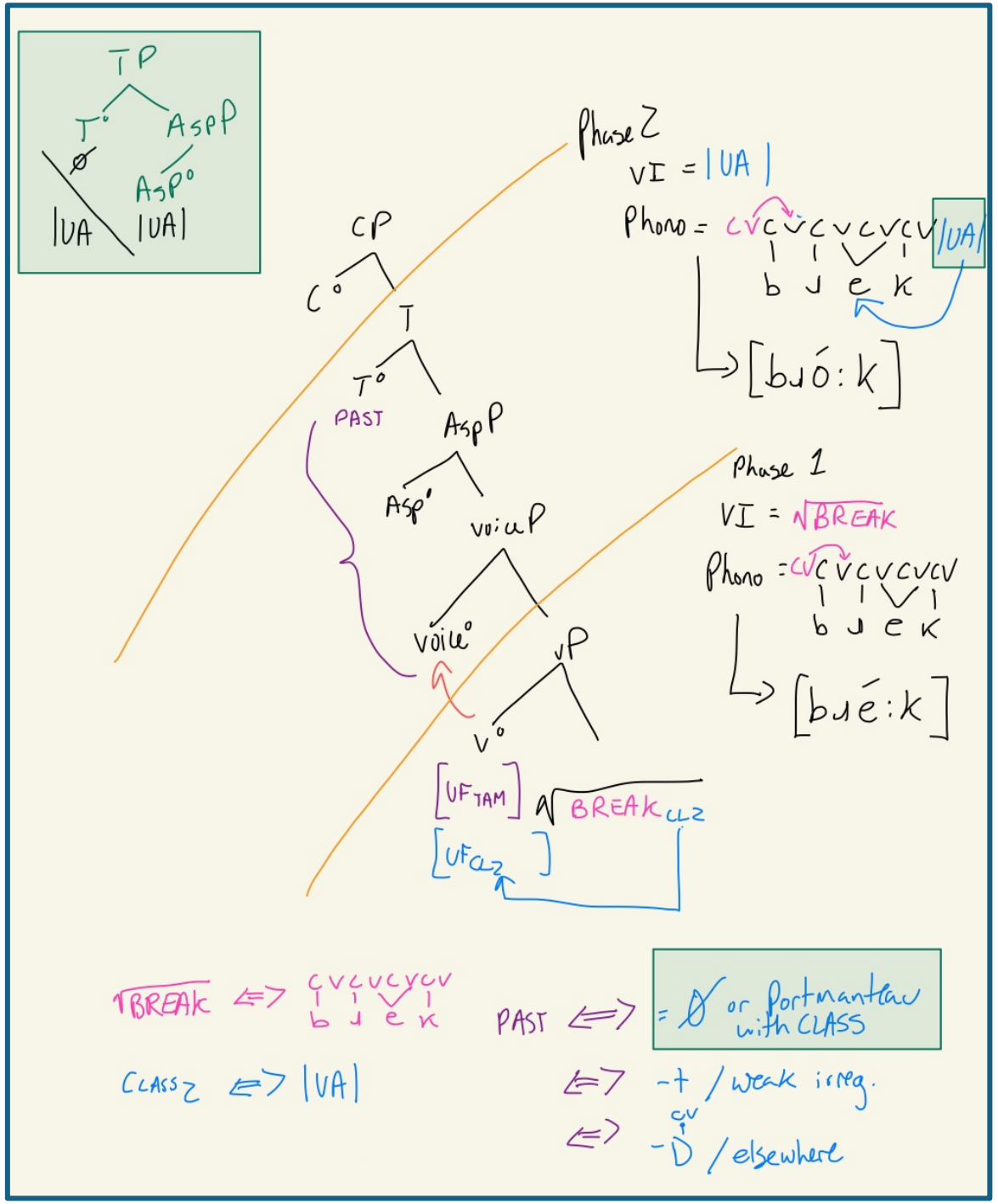
- The Theme Vowel of Class 2 verbs is overt in the PA.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
  - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

Phonological and Syntactic derivation

BREAK

BROKE

- 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.

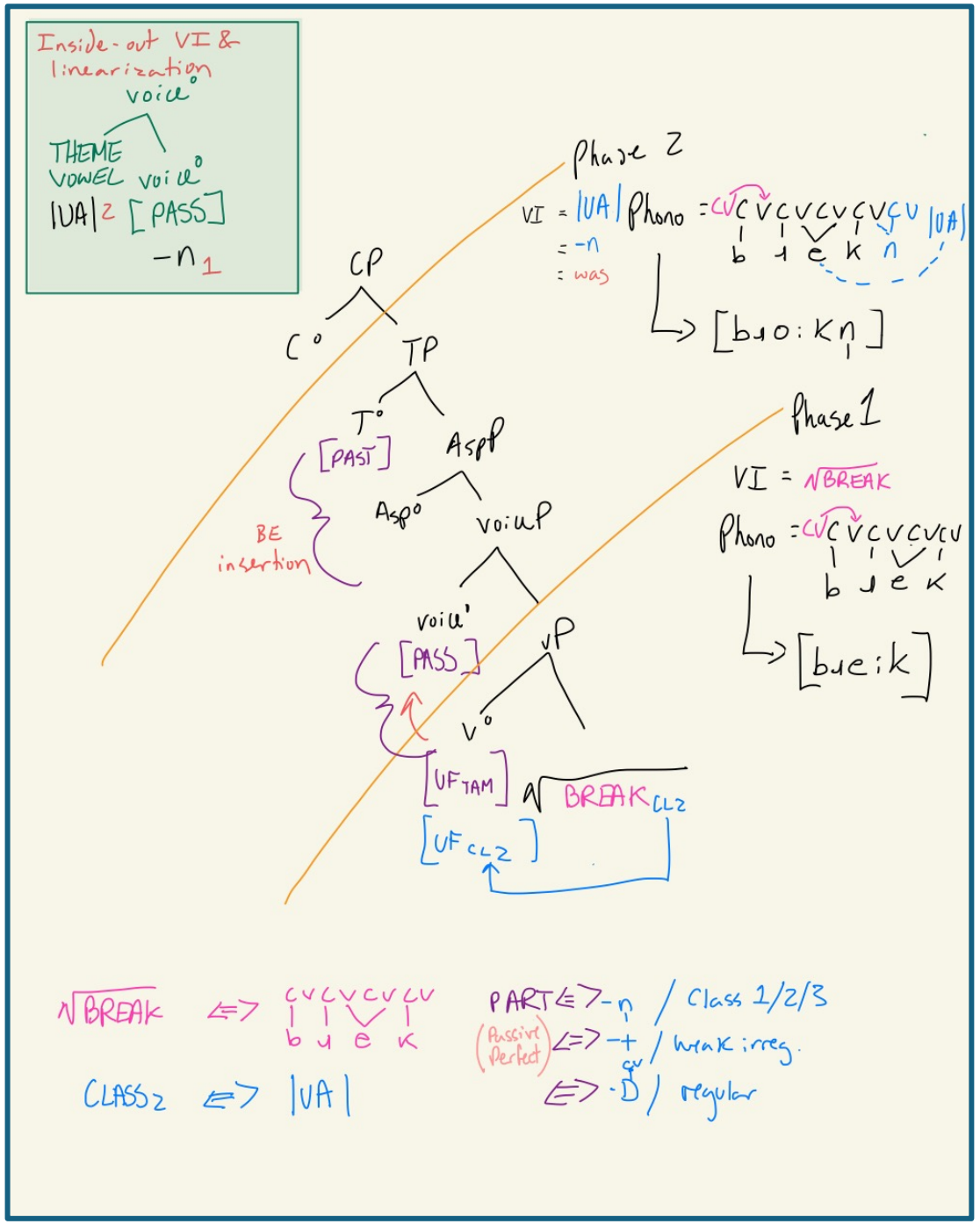


- The Theme Vowel of Class 2 verbs is overt in the PA.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
  - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

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.

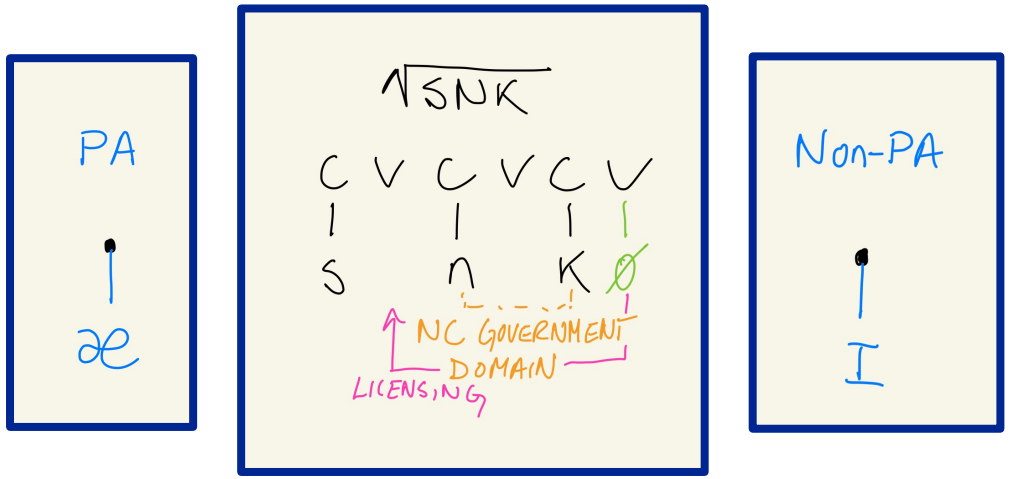
Class 3 - Zero grade roots (e.g., SING-SANG-SUNG)

In which the 'present' vowel is not part of the root, and there is a stable vowel in the Participle

- The common patterns in this class:
  - All roots that end in a $C_{[nasal]}$ or a non-Coronal NC sequence in the infinitive.
  - 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.

- 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.*

Class 3 roots, and the non-PA vocalic morpheme



- The vowel generally considered to be part of the UR of class 3 roots is not, in fact, specified as part of the root.
  - These roots are not specified for a vowel in their UR - they are Zero-grade.
    - As was proposed in Guerssel and Lowenstamm (1994) for some verbs in Classical Arabic and Ségéral & Scheer (1998) for some verbs in German, and many other analyses of PIE derivational systems.
  - This accounts for their special behaviour in the participle: they do not revert to the vowel seen in the Present, unlike Class 1 verbs.
    - This pattern is not evidence of an 'apophonic path' but 3 separate derivations (contra predictions in Ségéral & Scheer 1998)

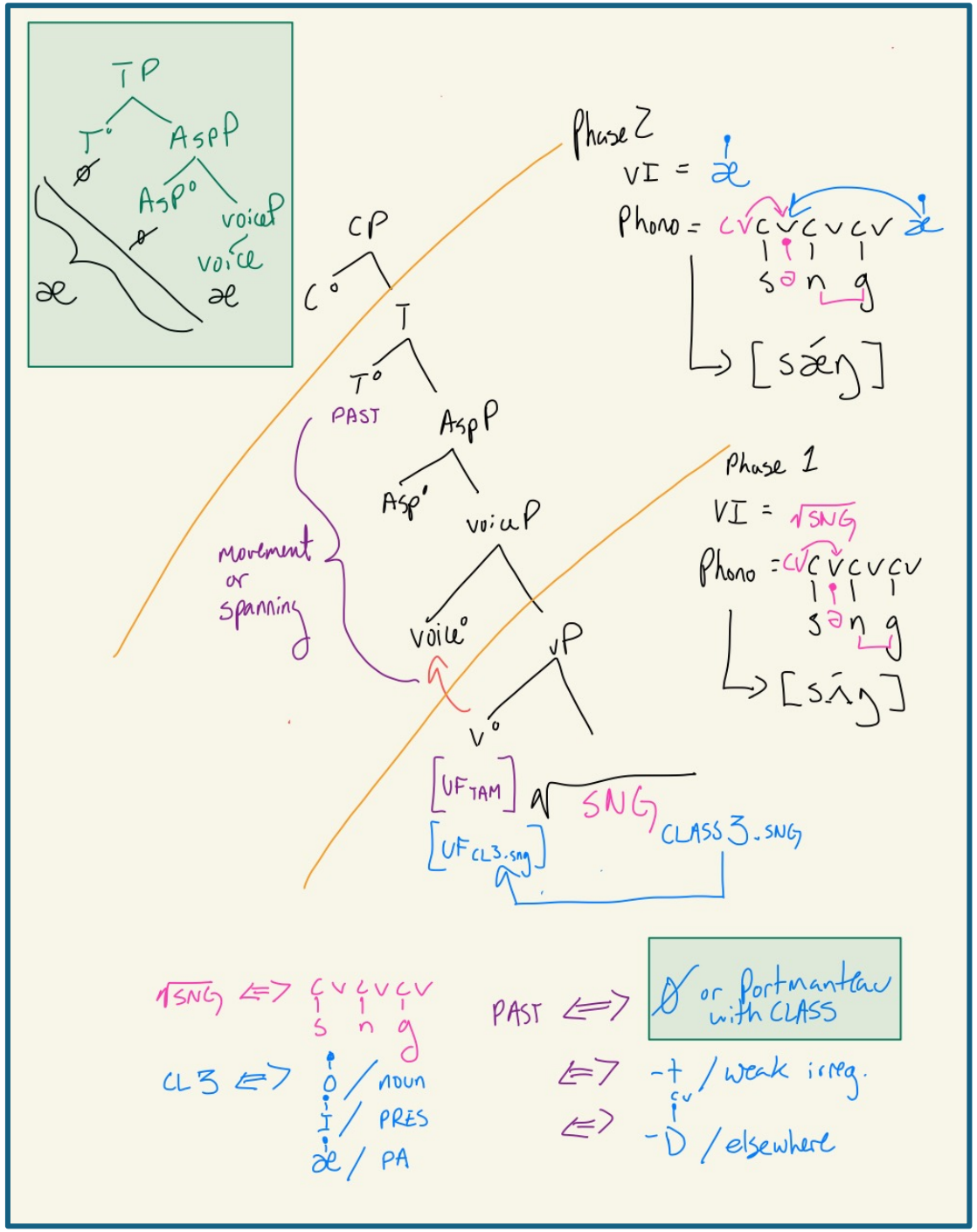
- Here the UR of the verb contains no vowel.
- Theme Vowels are in complementary distribution with the regular and weak irregular suffixes.
  - This is compatible with PA either being null in these derivation, or being realized as a portmanteau with the Theme Vowel

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.



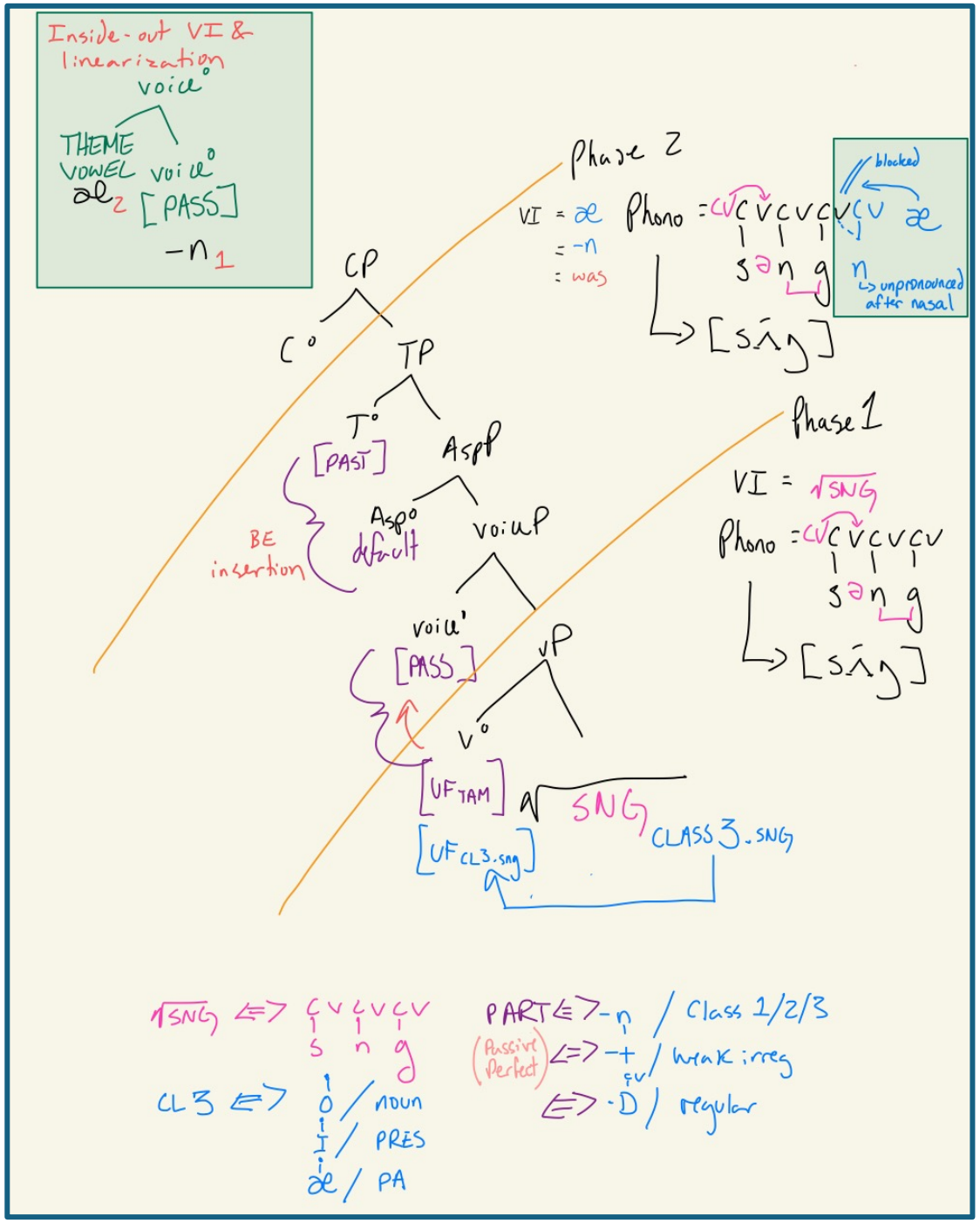
- The Theme Vowels are full segments, as in Class 1.
  - Therefore, the PA ablaut is blocked from docking when the syllabic -n is present, just as in Class 1.

Phonological and Syntactic derivation

SING

SUNG

- An empty V position is realized as schwa;
  - /ə/ is realized as [ʌ] when stressed.
- -n is not phonetically realised after a $C_{[nasal]}$ or a non-Coronal NC sequence.



What have we learned?

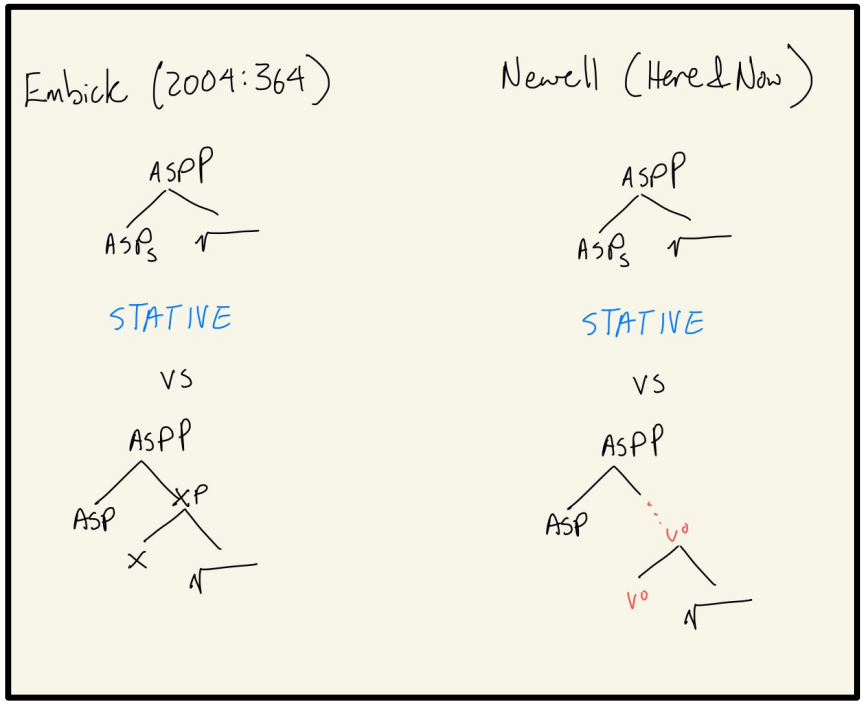
Roots and T^0 do not condition each other's allomorphy in English.

- The realizations of the English Ablaut 'vowels' are regulated by locality in the phonological structure in a way that is only explained in a piece-based account.
    - Association of full-vowels is blocked by a syllabic consonant.
    - Virtual Geminates are not phonetic geminates in Englsih
        - Syllabic nasals remain unpronounced after nasals and NCs but are still present in the structure and block V-association.
        - -t is unpronounced after a coronal C, but is still present and caused closed-syllable shortening
    - The only ablaut that is not blocked by the syllabic nasal is a sub-segmental ablaut morpheme.
- The phonological patterns dictate that the root alternations we see are purely phonological and not derived by allomorphy or readjustment rules.
- Allomorphy on T^0 is effected via the Theme Vowel, not the root.

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-Ø	sunk-Ø
√SHAVE	(clean)-shav-en	shav-ed	shav-ed
√OPEN	open-Ø	open-ed	open-ed
√EMPTY	empty-Ø	empti-ed	empti-ed
√DRY	dry-Ø	dri-ed	dri-ed

Conclusions and Implications

Theme Vowels are the (almost invisible) contact lenses that make it appear as though English verb roots are not myopic.

- All non-stative verbal derivations in English are bi-cyclic.
- The root and T^0 never interact directly.
- This is consistent with cross-linguistic patterns where T^0 is outside the stress domain/first phonological cycle.
  - see e.g., Oltra-Massuelt & Arregi (2005) for Spanish, Newell (2008), Samuels (2009) and Fenger (2023) for Turkish, Newell (2008) for Cupeno, Newell & Piggott (2014) for Ojibwe, Downing (2016) for Chichewa, Guekguezian (2017) for Chukchansi Yokuts, Fenger (2023) for Japanese, Popp (2023) for Murrinhpatha, and many more.
- The patterns found in the participial forms demonstrate the hallmarks of autosegmental phonological operations, not readjustment rules or allomorphy.

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Appendices

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

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)	[iː]-[eː]-[eː]	[iː]-[eː]-[iː]
bid-bade-bidden (2(1))	[ɪ]-[eː] (or [æ])-[eː] (or [æ])	[ɪ]-[eː] (or [æ])
hide-hid-hidden (2)	[aj]-[ɪ]-[ɪ]	[aj]-[ɪ]-[ɪ]
take-took-taken (3)	[eː]-[ʊ]-[ʊ]	[eː]-[ʊ]-[eː]
fall-fell-fallen (1)	[ɑː]-[ɛ]-[ɛ]	[ɑː]-[ɛ]-[ɑː]
drive-drove-driven (8)	[ai]-[oː]-[oː]	[ai]-[oː]-[ɪ]
draw-drew-drawn (1)	[ɑː]-[uː]-[uː]	[ɑː]-[uː]-[ɑː]
grow-grew-grown (4)	[oː]-[uː]-[uː]	[oː]-[uː]-[oː]
slay-slew-slain (1)	[eː]-[uː]-[uː]	[eː]-[uː]-[eː]
see-saw-seen (1)	[iː]-[ɑː]-[ɑː]	[iː]-[ɑː]-[iː]

UR-Ab-Ab (no phonological blocking)	underlying	surface
wake-woke-woken (5)	[eː]-[oː]-[oː]	[eː]-[oː]-[oː]
choose-chose-chosen (1)	[uː]-[oː]-[oː]	[uː]-[oː]-[oː]
freeze-froze-frozen (4)	[iː]-[oː]-[oː]	[iː]-[oː]-[oː]
get-got-gotten (2)	[ɛ]-[ɔ]-[ɔ]	[ɛ]-[ɔ]-[ɔ]
find-found-found (4)	[ai]-[aw]-[aw]	[ai]-[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 loses the 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)		[aj]-[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
Lists of Class 2 and 3 verbs

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

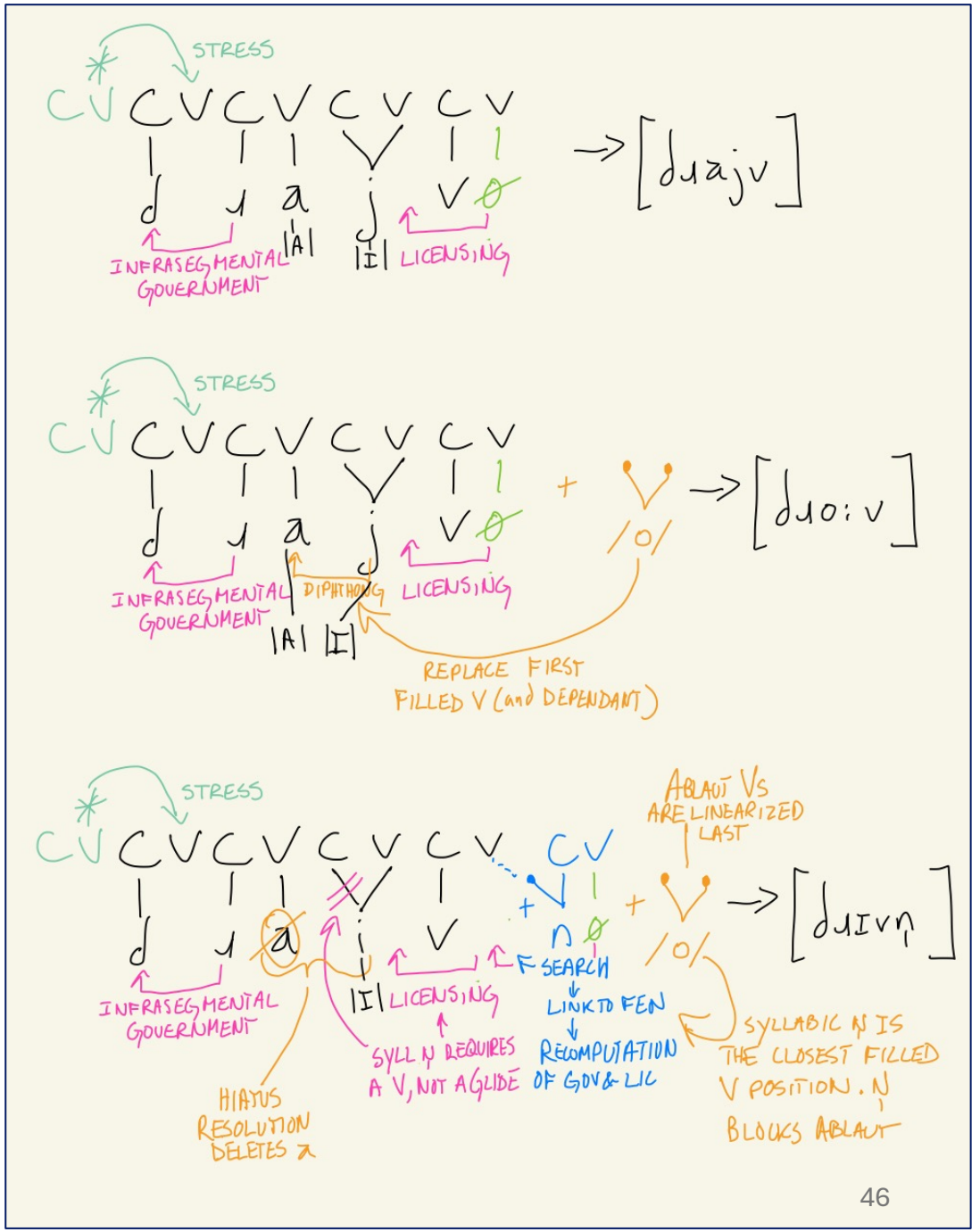
- The suffix is a branching (syllabic) [n] but must search for its syllabic/V position.
- Once probing/search applies at the segmental level, repair strategies (epenthesis, resyllabification) re-apply.

Phonological derivation

DRIVE

DROVE

DRIVEN



- Here we have 2 separate morphemes deriving the PA and PART.
- A syllabic nasal requires that the vowel it licences be vocalic (not a glide).
- The glide delinks from the C position, and then the short V-V hiatus is resolved by deleting the first V. (a-ɪ → ɪ)

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

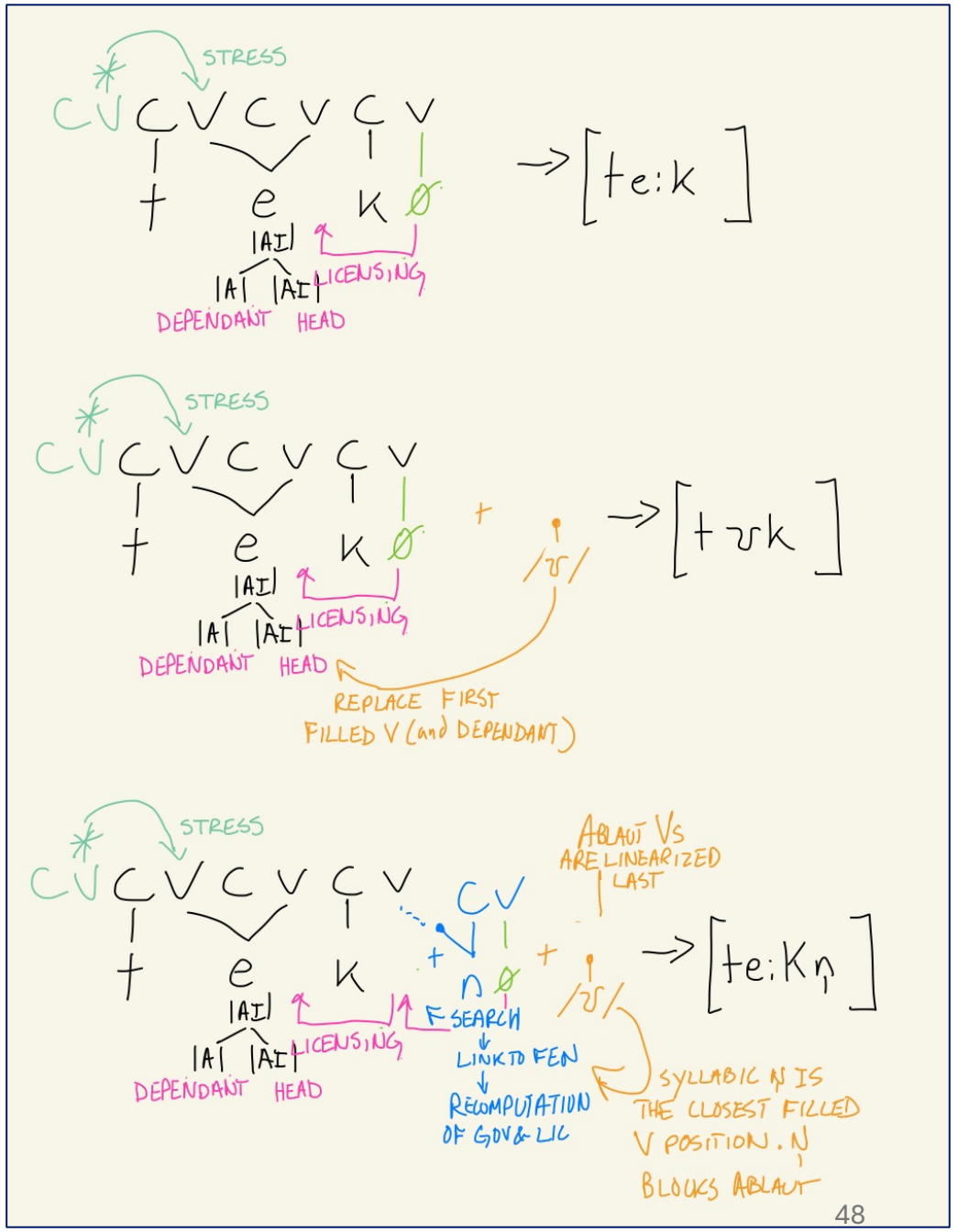
- Here we have 2 separate morphemes deriving the PA and PART.
- Why propose that the ablaut is there even in the passive/ participle? Because it is not always blocked (see Class 2).

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 truly irregular verbs seem to belong here as well: be-been, do-done, go-gone. See Appendix 4.

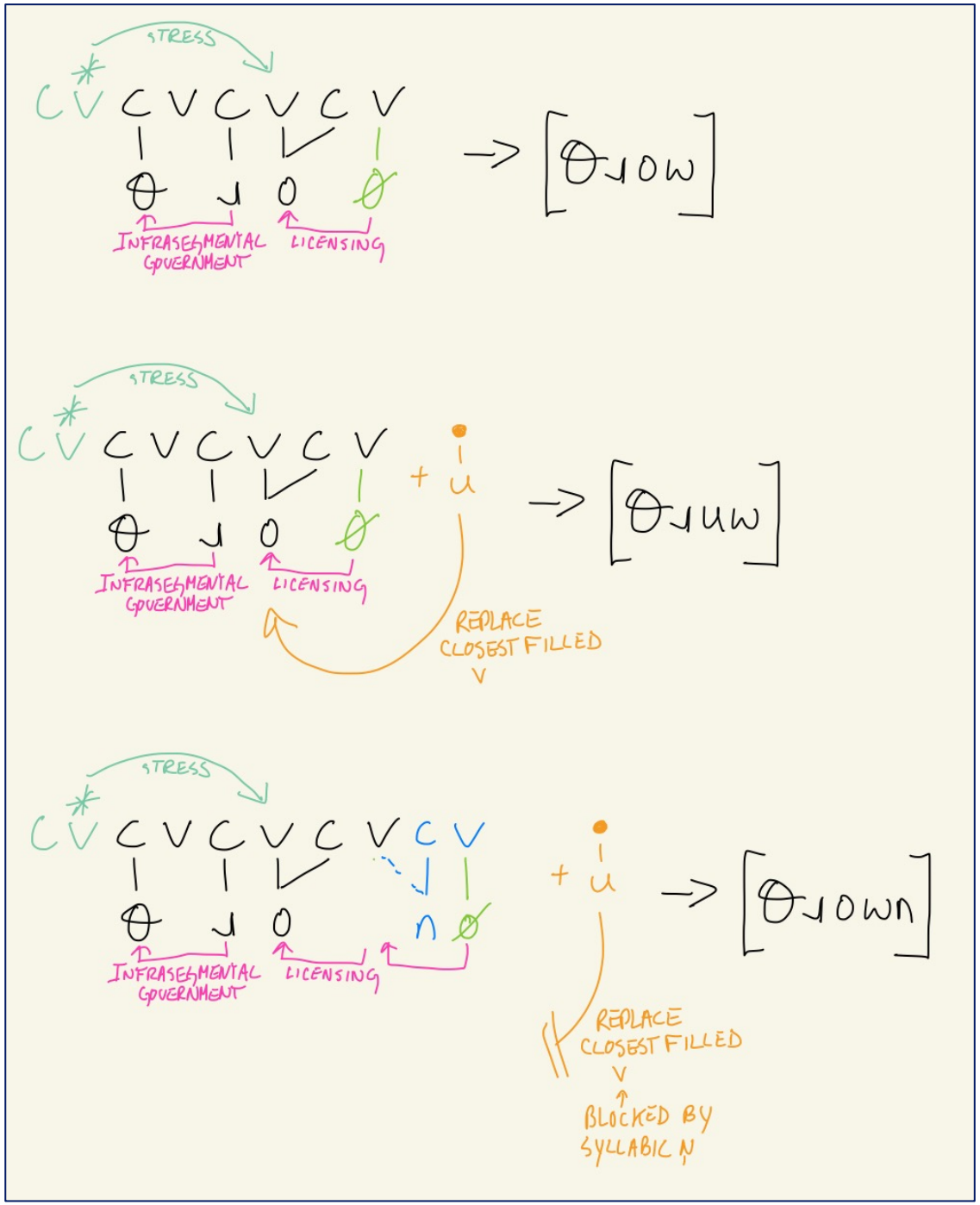
The -n in these forms *is* phonologically syllabic and blocks the attachment on the theme vowel.
It is not phonetically syllabic after a sonorant.

Phonological derivation

THROW

THREW

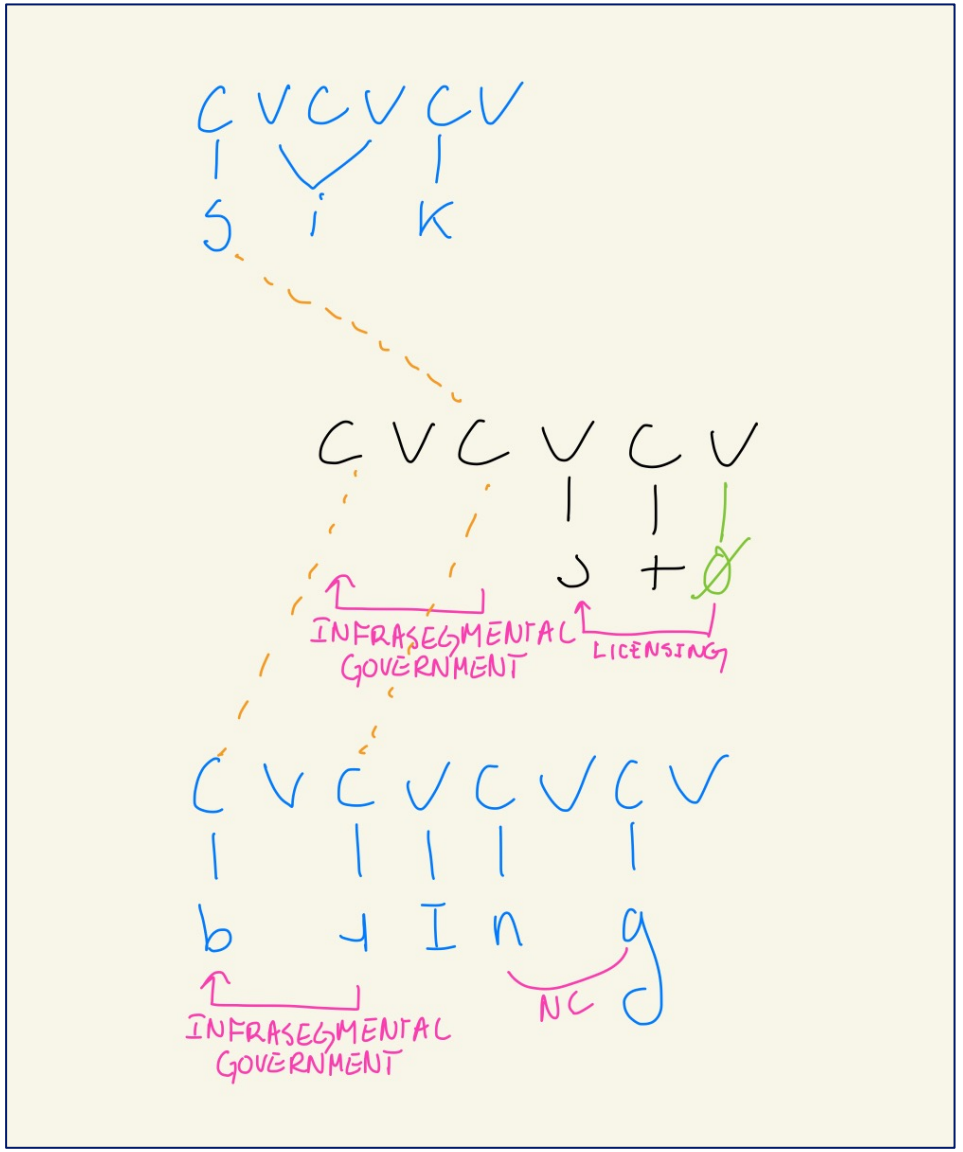
THROWN



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

Every account needs to say something special about these forms.

- I will assume -ɔt is a templatic allomorph, with the morphosyntactic patterning of -D and -t.
  - The onset of the base is copied into the template.
    - It is possible that the template has only one onset position and that dependents are permitted to ‘tag along’.
  - Halle & Mohannan (1985), for example, propose URs that are historically-motivated and opaque.
    - Let’s assume that synchronic surface phonological patterns that are easily-derivable are easily-derived.
    - Let us also assume that patterns that are not generalizable outside the PA are not process-driven. (c.f. vowel shortening)
- Verbs in this class: bring-brought, buy-bought, teach-taught, think-thought, catch-caught, 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.