

Underlying representations and allomorphy in /ʁ/ French verbal derivation

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The scope of this talk

The French Infinitive, Future, and Conditional constructions.

- ▶ The proposal that the /ʁ/ in the Future/Conditional is synchronically the Infinitive morpheme, and what this implies for questions of allomorphy and phonology in this system.

(1) Jeanne va partir bientôt.
 Jeanne go-3SG leave-INF soon.
 ‘Jeanne is leaving soon.’

(2) Jeanne partira bientôt.
 Jeanne leave-TH-INF-3SG soon
 ‘Jeanne is leaving soon.’

- ▶ Related issues:

- The (non-)pronunciation of [ʁ] for Group 1 verbs like *rester* [ʁestʁ] ‘stay’.
- The presence/absence of the Theme vowel (TH) in the verbal system of French, and its phonological and syntactic properties.
- The verb root alternations and the proposal that they are derived via allomorphy or readjustment rules.
- The *real* allomorphy, assuming it indeed exists for *aller*, *être*, *avoir*, and how it informs us about the syntax of the French Future and Conditional.

The take home message of this talk

The verbal system of French is phonologically regular

- ▶ All ‘irregularities’ in a grammar involve memorization. The French verbal system is consistent with irregularities being due to the phonological URs of each morpheme.
- (3) Jeanne va le prendre bientôt.
 Jeanne go-3SG 3SG.ACC take-INF soon.
 ‘Jeanne will take it soon.’
- (4) Nous le prenons toujours.
 We 3SG.ACC take-1PL.PRES always
 ‘We always take it.’
- ▶ Irregular verb root alternations in French are quite easy to explain in the phonology, once we get the Underlying Representations (URs) right.
 - ▶ Therefore, analyses of these alternations that appeal to Suppletion or Readjustment Rules (e.g., Aronoff (2012); Benz (2022)) miss generalizations and/or are unnecessarily non-modular.

An important note on coverage

- ▶ This is a 20 minute talk, and the French verbal system is complex.
- ▶ The supporting derivations of all of the different kinds of verbs in French can be found in the appendix, as well as more discussion of the Class 1 Theme Vowel, the URs of roots and the underlying representations of the sonorants (l, ʁ, w/v Ns, and Vs).

Theoretical assumptions

Suppletion, Readjustment Rules, Phonology

Who needs what?

- ▶ Suppletion / Stem-rule accounts like Aronoff (2012)'s require:
 - Underlying representations for verb roots and affixes.
 - Regular phonology.
 - Stems, paradigms, morphemes.
 - Negatively-specified rules (e.g., [-PIPS stem] for *dormir*).
- ▶ Readjustment Rule analyses like Benz (2022)'s require:
 - Underlying representations for verb roots and affixes.
 - Regular phonology.
 - Readjustment Rules (RRs) (syntactic features like [FUTURE] and [-PAST] in 'phonological' rules).
 - Lists of roots to which RR's apply.
 - Impoverishment rules.
- ▶ Strictly phonological accounts like the one here require:
 - Underlying representations for verb roots and affixes.
 - Regular phonology.
 - Cycles/phases.

Morpho-Phonological assumptions

Phonology

- ▶ CVCV phonology (Lowenstamm, 1996; Scheer, 2004)
- ▶ Autosegmental structure (e.g., Pöchtrager (2021))
- ▶ The inventory of structures in the URs of morphs are not restricted to a list/phoneme inventory. (URs may contain segments that are underspecified for internal structure, or underspecified for syllabic attachment.)
- ▶ Linking of floating segments / organizational relations (syllabification) occur from Left→Right in French.
- ▶ Liaison Cs link if the following V is linked to a melodic vowel segment, or if targeted as part of a complex onset.
- ▶ A floating V will link if it is required to govern a preceding empty V position, or if it is linked to by another segment.

Morphology

- ▶ The *-B* suffix is identical in all INF/FUT/COND derivations.
- ▶ The *aller, avoir, être* roots' variations are allomorphically-determined in French.
 - All other verb root alternations are derived phonologically.
- ▶ Allomorphy is determined locally, within a phase/cycle.

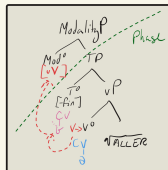
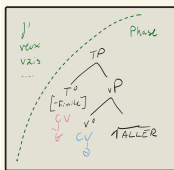
Morpho-Syntactic assumptions

The allomorphy of *aller/être/avoir*

(5) a. *aller, vais, ira* b. *avoir, ai, aura, eus* c. *être, suis, sera, fus*

- ▶ Assuming the *aller, avoir, être* roots' variations are allomorphically-determined in French and that /-ɛ/ and the theme vowels are immediately local to the roots in the INF/FUT/COND derivations, then something extra needs to be said about how this allomorphy is conditioned.
 - The simple structure: [[[ROOT] TH] ɛ] can't underlie all of these derivations.
- ▶ I will propose that the FUT/COND derivations give evidence of being multi-cyclic, accounting for both the allomorphy of the true irregulars, and allowing for a phonological account of all other verb root alternations in French.

The Modality head in the Fut/Cond attracts v^0



This is not the whole story... we will come back to this.

Modified from Nie (2015), analogous to the English verbal derivations in Newell (2025). The TH vowels are exponents of v^0 (Fábregas, 2017).

Deriving the Infinitive forms.
No \mathcal{B} in Class 1 -er?

Relevant general French phonology

The sonorant consonants /ʁ, l, nasals/ have vocalic qualities

- (6) a. *cour* [kuʁ] ‘court’
 b. *son ami* [sɔ̃ami] ‘3SG friend.m’
 c. *bel ami/beau garçon* [bɛl ami / bɔ gaʁsɔ̃] ‘handsome friend.m’ / ‘handsome boy’

- ▶ They are never true liaison consonants, and demonstrate a pattern of interacting with preceding vowels, especially when not in Onset positions (Scheer (2003)).
 - [ʁ] behaves like a liaison C only in the suffix(es) *-ier* and the Infinitive *-r*. It also shows a limited distribution, in that the V preceding it must not be ‘inherently long’ (e.g., [oː, øː]) or the tense counterpart of a short tense/weak pair ([e]).
 - Nasals always need to be supported by a vowel: either by a following overt V, or by merging with a previous V (or both).
 - Laterals may or may not exhibit pseudo-liaison, but when they do, they always colour the preceding vowel when unpronounced (e.g., *bel, beau* [bɛl/bɔ]). They can do this even when not ‘liaison’ (e.g., *cheval, chevaux*).
- ▶ Liaison Cs are generally coronal. Non-coronal obstruents, while also uncommon as liaison Cs, are unlike the sonorant ‘pseudo-liaison’ Cs in that they do not interact with preceding Vs (e.g., *tabac/tabacologie* [taba/tabakoloʒi]; *long, longue* [lɔ̃/lɔ̃g])
 - The question of why non-coronal obstruents tend to not be liaison Cs is orthogonal to the discussion today, but when they are, they are ‘regular liaison’ Cs, and francophones know there’s a difference.

Relevant general French phonology + a proposal

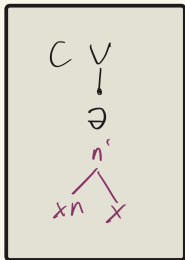
The sonorant velars have vocalic qualities: /w/ vs. /v/

- ▶ There is a distinction between Cs, Vs, and Glides, and they have overlapping phonetic distributions.
- ▶ The lateral /l/ is velar in coda, as evidenced by the backing/rounding of vowels in pseudo-liaison contexts.
- ▶ [w] Can be syllabified in onset (e.g., *le oui-dire* ‘hearsay’) or as part of a diphthong (e.g. *trois* [tʁwa] ‘three’).
 - Word-initial [w] is almost uniquely found in borrowed words synchronically.
- ▶ The only [w]-initial glide that can occur in a short diphthong (after a complex onset) is [wa] (see *trois*). So [w] also influences the vowel quality in its environment.
- ▶ Both underlying /w/ and /v/ can be realized as part of a [wa] diphthong and as [v] prevocally, but only /v/ can form part of a complex onset.

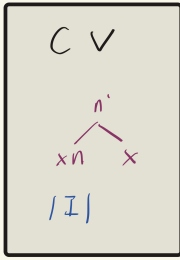
- (7) a. /w/: *bois* / *buvons* / *boirai* [bwa / buvõ / bwaʁe] ‘drink.1SG.PRES’ / ‘drink.1PL.PRES’ /
drink.1SG.FUT’
- b. /v/: *dois* / *devons* / *devrai* [dwa / dəvõ / dəvʁe] ‘must.1SG.PRES’ / ‘must.1PL.PRES’ /
must.1SG.FUT’

There is one inflectional -B suffix (=INF/FUT/COND) and there are (perhaps only) two TH vowels in French

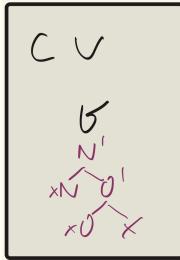
Class 1 TH vowel



Class 3 TH vowel



Infinitive suffix



(8) a. Class 1 *aimer* [ɛme] b. Class 2 *finir* [finiʁ] c. Class 3 *prendre* [pʁɑ̃dʁə], etc...

- ▶ Note that Class 2 -is verbs like *finir* don't have a theme vowel, but rather a derivational verbalizing head. See Garet (2021) for discussion. These verbs are regular and will not be discussed further here.
- ▶ But, contra Pomino & Remberger (2022) we will see that all root-derived verbs have TH vowels.

Where is the [ʁ] in the Class 1 Infinitive?

Consider the normal front-mid vowel alternations in French

See (Trager, 1944; Schane, 1968; Touratier, 1996; Paradis & El Fenne, 1995; Aronoff, 2012; Selkirk, 2015; El Fenne, 2020, for alternate accounts of the theme/infinitive representations)

- ▶ Consider the [e]/[ɛ]/[ə] alternations in the verbal roots:
 - /e/ does not normally alternate with schwa, and vice-versa, and UR [ɛ] would predict *aimer* = [emɛʁ] (Loi de position).
 - /ə/ - /ɛ/ : *peser*, *pèse*, *pesons*, *pèserai* ‘weigh’ [pəze] - [pɛz] - [pəzɔ̃] - [pɛz(ə)ʁe]
 - /e/ - /ɛ/ : *céder*, *cède*, *cédons*, *céderai* ‘cede’ [sede] - [sɛd] - [sedɔ̃] - [sɛ/ed(ə)ʁe]
- ▶ NB: French does not have problems with multiple schwas in a row, and schwa can govern schwa (Loi de 3 consonnes). Compare *Je me demande avec peserai*.

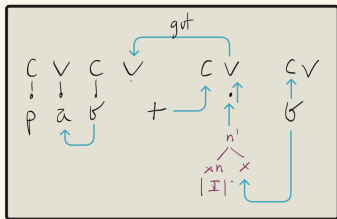
Properties of French suffixal ʁ : a pseudo liaison consonant

- ▶ ʁ is a structural glide, having both C and V projections.
- ▶ If ʁ is not linked to or followed by a filled V position, it cannot link to a C-position.
- ▶ ʁ cannot link to a vowel whose complement position is ‘filled’. (Tremblay, 2024)
 - The short tense vowel [e] (lexical distinction), long vowels, and stressed vowels are *strong*: their complement positions are filled (Honeybone, 2005; Charette, 2018))
- ▶ The N-projection of ʁ must link to the preceding vocalic position or be followed by a full V (=the behaviour of nasals).

How does all of this help us derive the infinitive?

Group 3 -ir verbs have liaison Cs*

partir [paʁtiʁ]



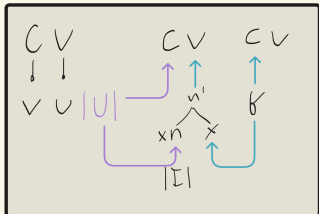
- ▶ The Group 3 -ir verb TH-vowel is /i/ (and is probably /i/ for all other Group 3 verbs).
 - |I| and the vowel are floating.
- ▶ Segments link left-to-right.
- ▶ No coalescence because of the intervening C on the melodic tier.
- ▶ /t/ waits to link, as it is not followed by a linked vowel.
- ▶ /i/ links to govern the preceding empty V.
- ▶ /ʁ/ links into the weak structure of /i/ and to C.
- ▶ /t/ links to the C preceding the linked TH.

*except a few with final [ʁ] or [j], e.g., *mourir*, *cueillir*, so /j/ is also a pseudo-liaison C/glide.

How does all of this help us derive the infinitive?

Group 3 -oir verbs have liaison Cs that have unlinked or underspecified structure and are velar = [l] or [v] (see appendix for more)

vouloir [vulwaʁ]



- ▶ The liaison /l/ in French is a floating C: |U| with coronal stop structure (Newell et al., 2025).

- ▶ The Group 3 TH-vowel is /i/ (and is probably /i/ for all other Group 3 verbs).
 - The root V + /u/+/i/ → [y] in the past participle, passé simple, imperfective subjunctive.
- ▶ Segments link left-to-right.
- ▶ The floating |U| of /l/ links into the structure of /i/, blocking |I|-linking.
- ▶ The TH links, as it is now melodically complete (not floating schwa).
- ▶ /ʁ/ links into the weak structure of TH (now /u/) and to C.
- ▶ [wa] is the only short velar diphthong in French (Côté, 2005), and ʁ = |A|.
- ▶ /l/ links to the C preceding the linked TH.

Interim conclusions about the Infinitive

- ▶ There is one infinitive morpheme: $-ʁ$, and it is a pseudo-liaison consonant (as are [l]s (and some [v]s) and nasals)).
 - A ‘pseudo-liaison’ C is one that can be linked to more than one position/configuration (see (un)successful stabilization in Scheer (2003), and the discussion in the appendix of Newell et al. (2024)).
- ▶ The surface realization of the TH vowel suffix is determined by the shape of the root, which offers an explanation for the link between C-final roots and the Class 1 [e]-realization of the Infinitive, as well as the apparent non-thematic status of most Class 3 verbs.
- ▶ The surface realization of $-ʁ$ is determined by the ROOT+TH.
- ▶ The pseudo-liaison status of sonorants explains why they are virtually always pronounced within a morpheme (they are not true liaison Cs) and why it is these same Cs that interact with Vs.
 - Laterals may be onsets, branch on a final V position (Newell et al., 2025), or combine with a preceding vowel (e.g., *bel/beau*)
 - Nasals are pronounced on a preceding V, in onset, or both (e.g., *bon ami*, *son*, *son ami*)
 - Rhotics are pronounced in an onset and on a preceding vowel. When the preceding vowel belongs to a distinct UR, interactions may occur that prevent $ʁ$ from being realized.
- ▶ All verbs have a Theme Vowel, and it is logically possible to propose only two conjugation classes in Modern French.
 - This allows for an analysis of the ‘intrusive stops’ that avoids postulating strong pre-stopped allophones of [ʁ] in the Infinitive.

The [ɪ] Infinitive is synchronically present in the
Synthetic Future and Conditional

Why would you think it's the same β in the Synthetic FUT/COND?

Consider the Synthetic vs Analytic Future/Conditional

- (9) *Je parlerai de la syntaxe dans un instant.*
'I'll talk about the syntax in a minute.'
- (10) *Tu n'irais pas parler trop longtemps de cela.*
'You wouldn't go on about that for too long.'

Why yes:

- ▶ The Future and Conditional are diachronically derived from the Latin Infinitive + Habere construction (e.g., *cantare habeo* 'I will sing')
- ▶ The Periphrastic FUT/COND is synchronically built on the infinitive, and they have virtually the same meaning.

(e.g., Selkirk (2015); Pollock (1989); Rowlett (2007); Boyé (2011); Estivalet & Meunier (2015); Nie (2015); El Fenne (2020); Bembridge (2022))

Why would you not?

Why no:

- ▶ The FUT/COND \varkappa and the Infinitive \varkappa appear to trigger distinct allomorphy

(11) *vouloir* ‘want-INF’ vs *voudra* ‘want-FUT-3PS’

- ▶ The INF vs FUT/COND appear to sit in different syntactic positions.

(12) a. *Je veux ne pas aller.* ‘I want to not go.’
 b. *Je n’irai pas.* ‘I won’t go.’

(e.g., Fleischman 1982, J. Harris 1998, Arregi, 2000, Roberts and Roussou 2002, Oltra-Massuet and Arregi 2005, Esher (2017), see further discussion in Bembrige).

Hence the Suppletion/Readjustment Rule analyses

- ▶ Suppletion accounts (like Aronoff (2012), or Bembrige (2022); Bermúdez-Otero (2013) for similar alternations in Spanish) must either relax locality or propose that the \varkappa morphemes are realizations of distinct heads in the INF and FUT/COND.
- ▶ Readjustment Rules (like the analysis in Benz (2022)) capture the phonological proximity between the output forms, but still propose that the \varkappa morphemes are realizations of distinct heads in the INF and FUT/COND.
 - And they are non-modular.

A derivation in which the root gets left behind

What if we have the conditioning environments for allomorphy wrong?

NB, these VI-rules are not complete.

► What if [al], [ɛ(t)], [av] are not the default, but rather [i], [sə], [o]?

$\sqrt{\text{aller}} \Leftrightarrow /al/ / v^0$

$\sqrt{\text{aller}} \Leftrightarrow /v/ / [\text{PRES.SG/3PL}]$

$\sqrt{\text{aller}} \Leftrightarrow /i/ / \text{elsewhere}$

$\sqrt{\text{etre}} \Leftrightarrow /ɛ(t)/ v^0$

$\sqrt{\text{etre}} \Leftrightarrow /ɛ(t)/s/ / [\text{PRES....}]$

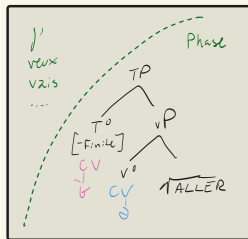
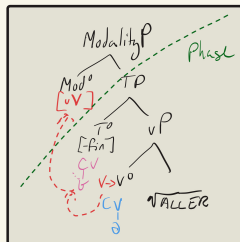
$\sqrt{\text{etre}} \Leftrightarrow /sə/ / \text{elsewhere}$

$\sqrt{\text{avoir}} \Leftrightarrow /av/ / v^0$

$\sqrt{\text{avoir}} \Leftrightarrow /e/ / [1\text{PRES.SG}]$

$\sqrt{\text{avoir}} \Leftrightarrow /o/ / \text{elsewhere}$

The Modality head in the Fut/Cond attracts v^0



Modified from Nie (2015), analogous to the English verbal derivations in Newell (2025). The TH vowels are exponents of v^0 (Fábregas, 2017).

Different derivations = Different # of cycles

Predicted cycles

- ▶ The Infinitive derivation is 1 cycle.
 - Cycle 1 [ROOT-TH-INF]
- ▶ The Fut/Cond derivations are 2 cycles.
 - Cycle 1 [ROOT]
 - Cycle 2 [[ROOT] TH-INF-MOD-T-AGR]

Is there evidence for 2 cycles? Yes.

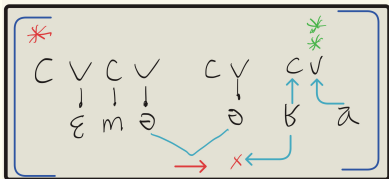
- ▶ All Class 1 verbs show evidence for bi-cyclic derivations.
- ▶ Most other verbal derivations in the French FUT/COND are ambiguous as to whether they are executed in 1 or 2 cycles.
- ▶ But, when there is a distinction, the output favours or requires a 2 cycle derivation.

Class 1 verbs want a bi-cyclic FUT/COND derivation.

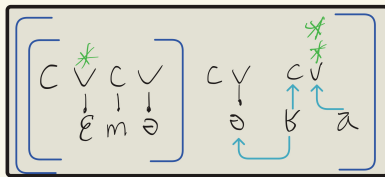
Class 1 verbs and the [e]/[ə] alternation

- ▶ If the TH /ə/ is linked, which is proposed to account for the INF forms / the non-pronunciation of ν , then only the bicyclic derivation of the FUT/COND works for Class 1 verbs.
 - Coalescence occurs between Vs within a cycle (after licensing/government has occurred, the final schwa of the root cycle is a FEN (is parametrically licensed)).
 - The root-final /ə/ will be pronounced in the FUT/COND when the root ends in an RT sequence (e.g., *porteraí* : [pɔvtəva]).
 - Hiatus resolution applies differently within and across cycles in a host of languages.

Mono-cyclic *aimera* * [εμεβα]



Bi-cyclic *aimera* [εμβα]

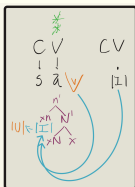


Savoir

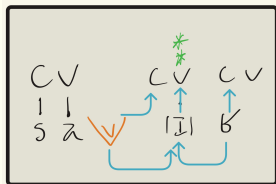
The -oir irregulars verbs have underspecified vowels and/or consonants.

- ▶ They may give extra evidence for the |I|-hood of the TH in the 3rd group generally.
- ▶ The vocalic-v (=w/, orange) and TH coalesce with the root vowel, causing fronting of the vowel in the present (TH is lost in hiatus with a following linked V, as in *savons*).
- ▶ xN cannot contain elements. xn can contain only one. The last element to link 'wins', or |U| is lost under |U| |I| hiatus.
 - Also *peux*, *veux*, *meus*, *meurs*, et peut être *tiens*, *viens*, *acquiers*.
 - See the appendix for discussion of the different -oir verbs.

Monocyclic *sais* [sɛ]



savoir [savwaʁ]

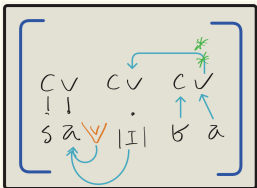


Que sera ne sera pas en français

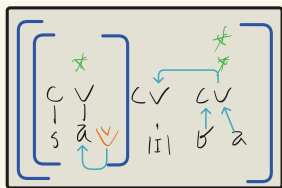
Deriving *saura*:

- ▶ Given the proposed derivation of *sais*, Elements can successively link to segmental structure.
- ▶ Given the governing of the root V by the theme vowel in *partir*, and the coalescence of /вк/ in *mourir* (see appendix), we can conclude that the cycles 'see' each other.
- ▶ Recall that stressed vowels are also unalterable/strong, so |I| cannot link in the bi-cyclic derivation.
- ▶ Then the bi-cyclic *saura* wins out over the monocyclic derivation.

Mono-cyclic *saura* *[sɛʁa]



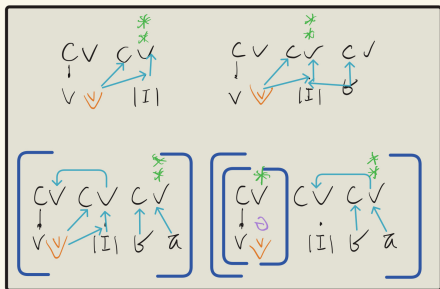
Bi-cyclic *saura* [soʁa / sɔʁa]



Voir

vois [vwa]; *voir* [vwaʁ]; *verra* *[vwaʁa], [vəʁa/vɛʁa]

- ▶ *Voir* has no underlying vowel other than /w/ (vocalic [v]).
- ▶ The underlying /w/ can link into the vocalic structure provided by the TH vowel, but cannot link to the completely empty V in its own cycle (it has no root node of its own): *vois* vs. *ve* in *verra*. (see also *devra*, *recevra*)
 - This may be because the [v] in *voir* is this same /w/, and it does not double-link to a CV sequence without supporting structure.
- ▶ If the FUT/COND were monocyclic, **voira* would be the expected form.



Is there more evidence for a multi-cyclic FUT/COND \mathcal{B} derivation? Perhaps.

Venir/Viendra, Tenir/Tiendra

tenir : [tənir] \mathcal{B}

tiendra : [tjẽdva] or [[tjẽ] dva]

1sg.present : *je tiens* [tjẽ]



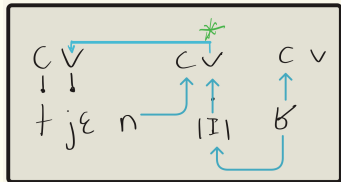
- ▶ These two verbs clearly have a theme vowel in the Infinitive.
- ▶ In *viens/tiens* there is only one vowel. It is stressed. The nasal is unlicensed and ungoverned, and has no C-position to link to, and so its |L|/nasal element links to the structure of the preceding V.
- ▶ There is a proposed link between the appearance of the diphthong and stress. But there are 2 other options to explain the [jɛ/ə] alternations. One we will leave until the discussion of the -oir verbs.

Tenir/Venir

Viens/Venir, Tiens/Tenir

- ▶ Order of operations for *tenir*:
 - Scan L→R.
 - Link [jɛ].
 - /n/ cannot link to C, as V is not filled. Waits.
 - /ʁ/ links to TH, and therefore to its C position.
 - TH links, as it is linked to ʁ. It now governs [jɛ]→[ə], and will be the locus of stress. Either being governed or unstressed can be the cause of the reduction of the root V.
 - /n/ links to C.
- ▶ NB that the phonology of nasalization can't occur at the realization of the root in *tenir* (Kalin (2022)'s spell-out algorithm) or the vowel would be nasalized on the surface (TH is underlyingly unlinked).

Infinitive : *tenir* [tənɪʁ]



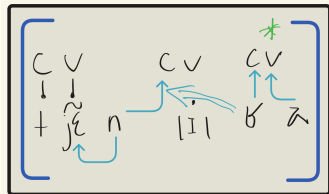
Monocyclic *Viendra/Tiendra*

Different assumptions for each derivation

- ▶ We can derive *viendra*, *tiendra* in 1 cycle, or in 2.
- ▶ If we do it with 1, we lose the link between the appearance of the diphthong and stress. The diphthong emerges when ungoverned.
- ▶ Order of operations:
 - Scan L→R.
 - /n/ cannot link to C, as V is not filled. Waits.
 - TH doesn't link.
 - /ɸ/ links to C as it is followed by a linked V on the melodic tier (AGR comes linked to its own CV, and the ensuing VC-sequence is deleted. This has been simplified here).
 - /ɸ/ searches to its left, finds /n/, which can evacuate its |L|, which links to the preceding V, giving licit /d/ and forming a complex onset.
 - As /a/ governs TH. [jɛ] is ungoverned and therefore does not reduce.

Mono-cyclic *tiendra*

[tjẽdʋa]

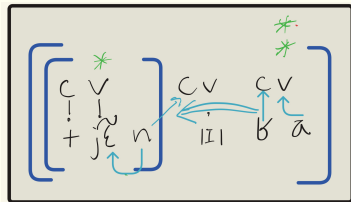


Bicyclic *Viendra/Tiendra*

Viendra, Tiendra

- ▶ We can derive *viendra*, *tiendra* in 1 cycle, or in 2.
- ▶ If we do it with 2, we retain the link between the appearance of the diphthong and stress.
- ▶ Order of operations Phase 1:
 - Scan L→R.
 - /n/ cannot link, nasalizes V.
 - [jɛ] is stressed.
- ▶ Order of operations, Phase 2:
 - TH doesn't link.
 - /ɤ/ links to C as it is followed by a linked V on the melodic tier.
 - /ɤ/ searches to its left, finds /n/, which can evacuate its |L| to the V, giving licit /d/ and forming a complex onset.
 - /a/ is stressed, and the rightmost stress is promoted to primary.

Bi-cyclic *tiendra* [tjẽd̥va]



Interim Conclusions 2

The Infinitive and Future derivations and cyclicity

- ▶ The Fut/Cond derivations give evidence for bi-cyclic derivations.
 - When the derivations do make a distinction, the bi-cyclic derivations are the ones that make the correct predictions : *All class 1 verbs, savoir, voir, maybe tenir/venir.*
 - There is no other satisfying account of the [e/ə] TH alternation in the Class 1 verbs.
 - Much of the time, the monocyclic and bicyclic derivations predict the same (correct) results.
- ▶ The derivations here demonstrate that a strictly phonological account of French verb root alternations is feasible.
- ▶ NB that the proposed derivations appeal to nothing that is not needed independently in the phonology of French, aside from the schwa-coalescence, and the URs of each morpheme.
- ▶ What we need to assume in the phonology for this analysis to work:
 - That all verbs have a TH vowel, and that the two TH vowels have distinct URs.
 - That French has underspecified sonorant consonants: /l, v, w/, nasals and /ʁ/, and they interact with the vowels in their environment.
 - The URs of verbs roots are either (i) fully specified (Class 1), or contain some floating structure (Class 3).

Interim Conclusions 2

What does this mean for the status of *-/ʁ/* and of appeals to allomorphy in the verbal system of French?

- ▶ This means that *-/ʁ/* can be an exponent of the Infinitive in the Future and the Conditional.
- ▶ It also means that we need no special allomorphy of this *-/ʁ/* morpheme in Class 1.
- ▶ As the TH and INF escape the lower phase in the FUT/COND derivations, we can capture the allomorphy of the root in the real irregular verbs *aller*, *être*, *avoir* without appealing to allomorphy conditioned by an outer head (cf Nie (2015)).
 - NB that since the infinitive intervenes between the root and ModP, and the Infinitive is not subject to allomorphy itself, a spanning-type allomorphy such as found in Merchant (2015) is ruled out here.
- ▶ It also means that no Readjustment Rules, even if we allowed them in the system, could appeal to the [Future] feature in statements of root allomorphy, as the roots and [Future] undergo VI in different cycles.

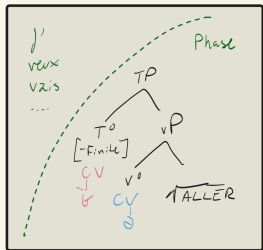
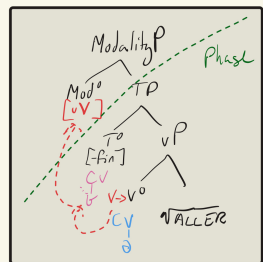
If all of the above is correct, we might ask whether leaving the Fut/Conditional Root low in the tree causes other problems for the syntax though....

A very tentative discussion of the syntax of the
FUT/COND derivations

Reminder of the proposed syntax

The details

- ▶ In the infinitive construction, Inf^0 and v^0 are within the phase in which the root undergoes Vocabulary Insertion (VI) and could plausibly condition its allomorphy.
- ▶ In the synthetic FUT/COND derivations, neither INF^0 nor v^0 are spelled out in the same phase as the root and therefore cannot condition the VI of the root.
- ▶ Therefore, for verb roots like *être* assumed to undergo allomorphy, the root can undergo allomorphy as its environment is differentiated at spell out via movement.
 - $\sqrt{\text{ÊTRE}} \Leftrightarrow /ɛt/ / \text{T}^0$ (incl Inf)
 - ...
 - $\sqrt{\text{ÊTRE}} \Leftrightarrow /sə/ / \text{elsewhere}$
- ▶ See the appendix for a small addition to the discussion of French syntax.



A way around the word order problem

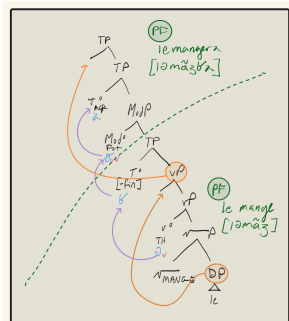
The details

- ▶ If we leave the root low we get something like the following:

(13) *Je erai lentement mange un pomme*
I TH-INF.FUT-AGR slowly eat an apple

And we don't want that. It gets us the wrong word order, and none of the phonology we just did can work.

- ▶ But, it is consistent with the proposition that infinitives generally stay low in French (Pollock, 1989; Olivier, 2025).
- ▶ And, there is still a lot of debate about how clitics get to their pre-verbal position in finite clauses.
- ▶ So, if cliticization first targets an intermediate position in the lower phase (Sportiche, 2005), perhaps the verb root is carried along with the cliticization operation, which would always give us the correct order of morphemes here.



Conclusions

The French verbal alternations are phonologically-derived

- ▶ French continues to be a language that doesn't give the clearest signals regarding phonological boundaries/cycles
- ▶ I agree with Benz (2022)'s proposal to not use suppletion to deal with these analyses, like Bonami & Boyé (2003); Aronoff (2012); Starke (2020) do.
 - The latter does not appeal to suppletion per se, but still appeals to independent URs for the different realizations of the irregular verb roots.
- ▶ But, using [-Past] or [+Fut], for example, to explain a clearly phonologically-conditioned alternation is not warranted : Readjustment Rules also miss important details of the pattern, like why the sonorants aren't normal liaison Cs.
 - RRs are found everywhere in even in analyses proposed to be phonological at their cores (e.g., Schane (1968); Dell et al. (1978); El Fenne (2020))
- ▶ So here, I am in agreement with Aronoff (2012) that RRs are not the answer, but of course disagree that appealing to either 'stems' or suppletion is warranted.
- ▶ In the end, *something* needs to be memorized about irregular underlying forms. And if that *something* is the phonological shapes of URs, then we capture the French verbal system more deeply than if we appeal to Readjustment Rules or to Suppletion.
- ▶ And, in looking at the necessity to have a bi-cyclic phonological derivation in the FUT/COND, maybe we have learned something interesting about the syntax...

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Where is the [ʁ] in the Class 1 Infinitive?

What is the UR of the Class 1 Infinitive?

- *aimer* : [ɛme] - *aimerai* : [ɛm(ə)ʁe] 'like'

Proposals regarding the Underlying Representation (UR) or the 1st conjugation Infinitive ending (see Paradis & El Fenne (1995) for more citations):

- ▶ /e/ (e.g., (Touratier, 1996; Aronoff, 2012; Trager, 1955))
 - If the INF is /e/ in Class 1 then we lose the link between the INF/FUT/COND in Class 1, and lose the syncretism of the infinitives across verb classes.
- ▶ /ə(ʁ)-ə/ (Trager, 1944)
 - The bi-morphemic proposal of Trager's works to get stress on /ə/, but causes problems for the masculine/feminine *-ier(e)* derivations, and misses the pseudo-liaison status of ʁ.
- ▶ /a+ʁə/ → [e] (Schane, 1968)
 - Here /a/ must undergo alternations which give [ə] or [e] in different surface forms, and this is unnecessarily complex.
- ▶ /ɛʁ/ (Selkirk, 2015, (1972))
 - Xɛʁ# → Xe∅# (also ε → ə ___ CV)
- ▶ /e(ʁ)/ : e → ə / ___ CV (Future and Present Conditional) (Paradis & El Fenne (1995); El Fenne (2020))
 - This is a readjustment rule.
- ▶ If the TH/INF has /e/ or /ə/ in its UR then the vowel alternation is odd (without further explanation). (see also the discussion in (Selkirk, 2015, (1972)))

Where is the [ʁ] in the Class 1 Infinitive?

Consider the normal front-mid vowel alternations in French

- ▶ /e/ → [ɛ] when unlicensed / in a closed syllable (*métrique-mètre*).
- ▶ /ə/ → [ɛ] when ungoverned / in a closed syllable, and/or when stressed (*fait-faisable*).
- ▶ Consider the [e]/[ɛ]/[ə] alternations in the verbal roots:
 - /ə/ - /ɛ/: *peser, pèse, pesons, pèserai* ‘weigh’ [pəze] - [pɛz] - [pəzɔ̃] - [pɛz(ə)ʁe]
 - /e/ - /ɛ/: *céder, cède, cédon, céderai* ‘cede’ [sede] - [sɛd] - [sedɔ̃] - [sɛ/ed(ə)ʁe]
- ▶ NB: French does not have problems with multiple schwas in a row, and schwa can govern schwa (Loi de 3 consonnes). Compare *Je me demande avec peserai*.

/e/ does not normally alternate with schwa

But, we would have to say that it does if /e/ is the underlying class 1 TH:

- ▶ *aimer* : [ɛmɛ] - *aimerai* : [ɛm(ə)ʁe] ‘like’

And it is non-optional when called to govern, where one might expect it to emerge in its full form in an open syllable, as [e] is licit in open, unstressed syllables (e.g., *métrique*):

- ▶ *calmer* : [kalmɛ] - *kalmerai* : [kalməʁe] ‘calm’
- ▶ If the UR were /e/ and the /ʁ/ were part of the UR /-eʁə/, then we would predict verbs of the 1st group to be *aimer, calmer* [ɛmɛʁ, kalmɛʁ], cf *cher* [ʃɛʁ, mɛʁ...].

Where is the [ʁ] in the Class 1 Infinitive?

What if the UR of the vowel in -er were /ɛ/?

- ▶ In dialects where [ɛ] emerges in open syllables, more would have to be said.
- ▶ When it is non-optional when called to govern, one might still expect it to emerge in its full form in an open syllable (e.g., *cordera* [kɔʁdɛʁa]) ‘3SG will tie up’.
- ▶ We couldn’t explain why the /ʁ/ is not pronounced:
 - [ɛʁ] is a licit vowel-coda sequence (e.g., *cher* [ʃɛʁ])
 - The infinitive /ʁ/ is not a liaison consonant in the other verb classes.

Or /ə/

- ▶ If the TH V were schwa and the INF were a liaison C:
 - One would have to explain why the ʁ cannot be pronounced after it (giving [ɛʁ]), as it can be after [i, wa, d/t].
 - Assuming the schwa gets stressed in this position, one would have to explain why it is realized as [e] in the dialects that allow final [ɛ].
- ▶ If the TH V were schwa, and the INF were a non-liaison C (e.g., something like Trager’s -əʁ-ə):
 - One would have to explain why the ʁ is not pronounced, as it is followed by a V.
 - If it were pronounced one would expect the vowel to emerge as mid-open: [ɛʁ]

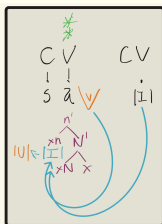
More on the derivations of the **INF/FUT/COND**
for the various verbs / verb classes

What about the -oir irregulars?

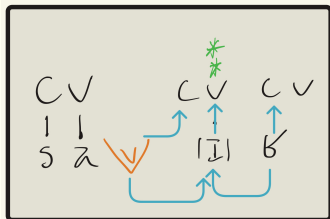
These verbs have underspecified vowels and/or consonants.

- ▶ They may give extra evidence for the |I|-hood of the TH in the 3rd group generally.
- ▶ The TH coalesces with the root vowel, causing fronting of the vowel in the present (when it is not lost in hiatus with a following linked V, as in *savons*).
- ▶ xN cannot contain elements. xn can contain only one. The last element to link 'wins'.
 - Or |U| is lost under |U| |I| hiatus.
 - Also *peux, veux, meus, meurs, et peut être tiens, viens, acquiers*.

Monocyclic *sais* [sɛ]



savoir [savwaʁ]

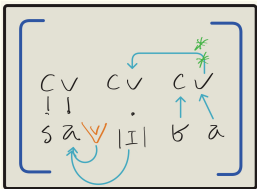


Que sera ne sera pas en français

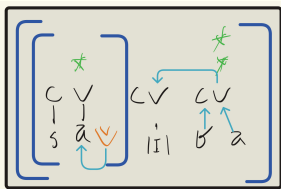
Deriving *saura*:

- ▶ Given the proposed derivation of *sais*, Elements can successively link to segmental structure.
- ▶ Given the governing of the root V by the theme vowel in *partir*, and the coalescence of /bV/ in *mourir*, we can conclude that the cycles ‘see’ each other.
- ▶ Let’s assume that stressed vowels are also unalterable/strong, so |I| cannot link in the bi-cyclic derivation.
- ▶ Then the bi-cyclic *saura* wins out over the monocyclic derivation.

Mono-cyclic *saura* *[sɛbɑ]

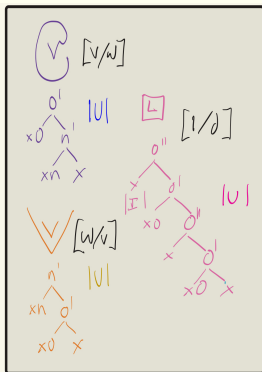


Bi-cyclic *saura* [soβɑ]



Why don't all the -oir verbs behave the same way?

Different kinds of [v]s and [l]s

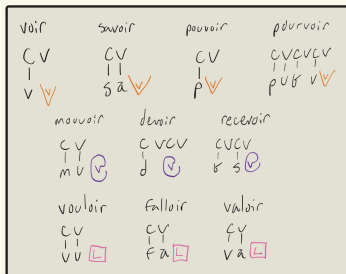


- ▶ *mouvoir, devoir, recevoir* have C-type /v/s.
 - C-type Vs link to any C position that is followed by a full vowel, and will also share |U| with an underspecified V in their own nucleus.
 - They will share their underlyingly-dissociated |U| with a preceding V only if stranded, and only if the base of that V is xn and not xN (*merger with xN in /a/).
 - They can be part of a complex onset.
 - (This i s probably also the structure of nasals, but |L| is their dissociated element.)
- ▶ *savoir, pouvoir, voir, pouvoir (écrire, boire)* have V-type /v/s (/w/).
 - V-type /v/s do all of the above, but cannot be the initial member of a complex onset (=glides).
- ▶ *vouloir, falloir, valoir* have dissociated-|U|-type /l/s.
 - V-type /l/s link to their coronal support structure when syllabified in onset (Newell et al., 2025).
 - They can be targeted by infrasegmental government, given that while |U| floats their structure = /d/. A stranded |U| will link to the preceding V.

Why don't all -oir verbs behave the same way?

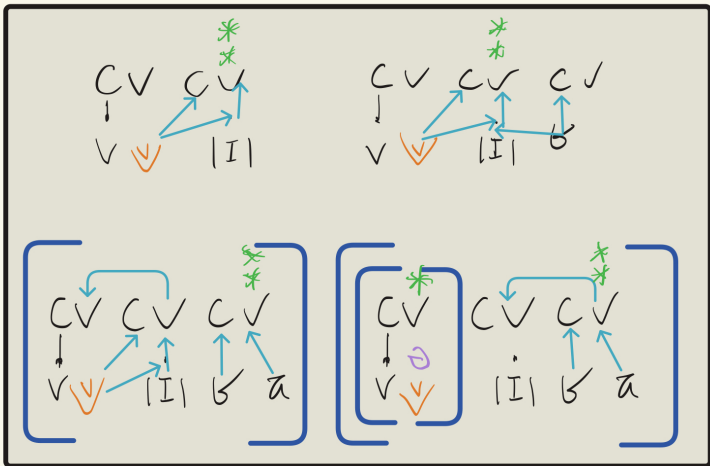
Different vowel/syllable structures too

- ▶ *voir, devoir, recevoir* have no full vowels (the latter 2 have extra syllable space).
 - Any vowel realized as [wa] is immune to modification: geminate integrity (e.g., *vois, dois, reçois* in the present).
- ▶ *mouvoir, pouvoir, vouloir* have /u/ in their URs.
- ▶ *savoir, falloir, valoir* have /a/ in their URs.
- ▶ *falloir, valoir* seem to be Class 1 verbs, even though they have no stable final schwa. This would explain why they have *faux, vaux* [fo/vø] and not *feux, veux* [fø/vø] in the relevant forms.



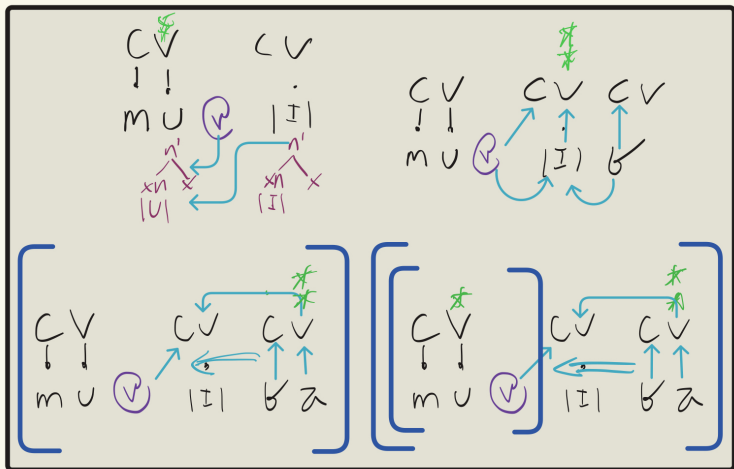
A couple of derivations

vois [vwa]; *voir* [vwaʁ]; *verra* *[vwaʁa], [vəʁa/vɛʁa]



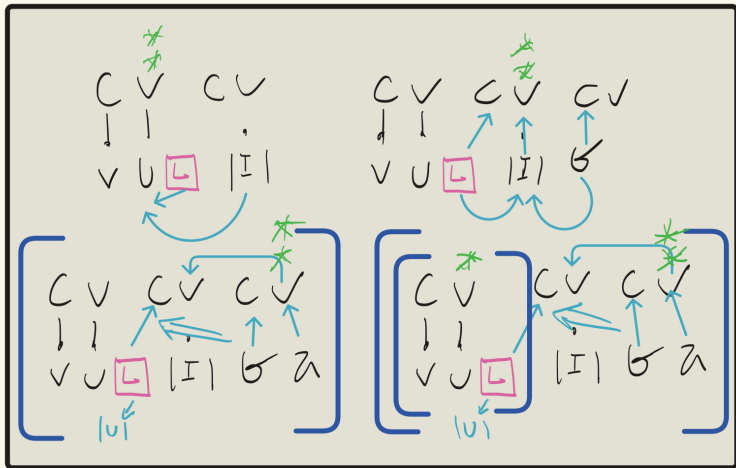
A couple of derivations

meus [mø]; *mouvoir* [muvwar]; *mouvra* [muvʁa] (mono or bi)



A couple of derivations

veux [vø]; *vouloir* [vulwaʁ]; *voudra* [vudʁa] (mono or bi)

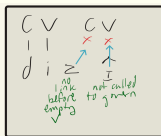


The s/z verbs

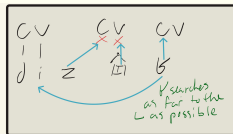
Verbs where s/z alternates with zero

- These verbs have a liaison /s/ or /z/ that has normal liaison behaviour.

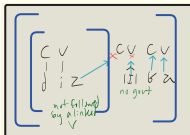
dis [di]



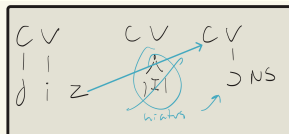
dire [diʁ]



dira [diʁa]



disons [dizɔ̃]

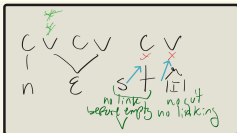


The s/z verbs

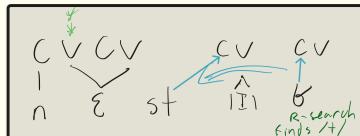
Verbs where s/z alternates with t/d

- ▶ These verbs have two liaison Cs in their UR /st/ or /zd/ that has normal liaison behaviour.
- ▶ This is not specific to these roots. Other roots have 2 liaison Cs if we could the pseudo-liaison nasals, e.g., *vendre*, and the double underspecified velars of *absoudre*.

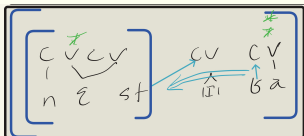
nais [nɛ]



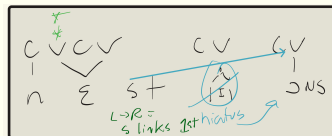
naître [nɛtʁ]



naître [nɛtʁ]



naissons [nɛsɔ̃]

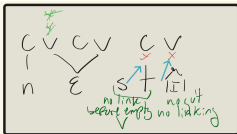


The s/z verbs

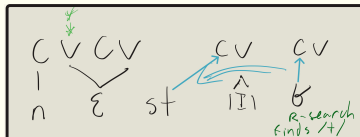
Verbs where s/z alternates with t/d

- ▶ These verbs have two liaison Cs in their UR /st/ or /zd/ that has normal liaison behaviour.
- ▶ This is not specific to these roots. Other roots have 2 liaison Cs if we could the pseudo-liaison nasals, e.g., *vendre*, and the double underspecified velars of *absoudre*.

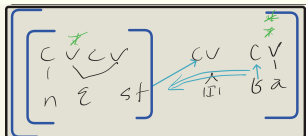
nais [nɛ]



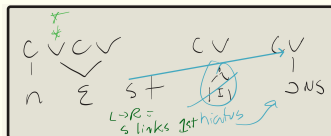
naître [nɛtʁ]



naître [nɛtʁ]



naissons [nɛsɔ̃]

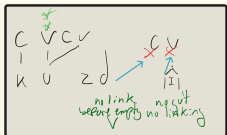


The s/z verbs

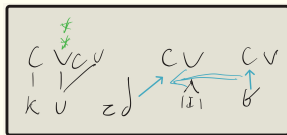
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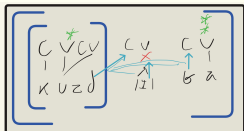
couds [ku]



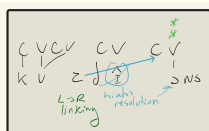
coudre [kudʁ]



coudra [kudʁa]



cousons [kuzɔ̃]



The little bit more on the syntax

On the bit of movement there is

Infinitive-adverb order

Pollock proposed that non-future infinitives move to a position higher than vP but lower than TP. In the sentence below, this is why *paraître* can be pronounced in a position preceding the vP-adjoined adverb *souvent*.

- (14) Paraître souvent triste pendant son voyage de noce, c'est rare.
 'To look often sad . . .' (Pollock, 1989, 378)

But clearly in FUT/COND the Infinitive roots must end up high, before the tensed auxiliary, and so this kind of data does not provide an appropriate test for whether they are left low at an intermediate point in their derivation.

- (15) Il paraîtra souvent triste.
 'He will often look sad.'

Pollock does, however, propose the Infinitive suffix to be higher than the position to which the verb raises, and therefore his analysis and the one here agree that Infinitive affixation is derived via lowering/ affix-hopping, not via head-movement.