

French verbs: Decomposition and the rules of morpho-phonology*

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1 Introduction

- morpho-phonological rules (MP rules) are perhaps the least-loved component of Distributed Morphology
- criticism over the last thirty years repeats three main concerns:
 1. MP rules are a technical trick to fix something the theory has nothing interesting to say about
 2. they are too powerful, in principle capable of rewriting any string as any other string
 3. they are non-modular, violating a strict division between syntax and phonology
- within and outside of DM, these concerns have frequently led to the conclusion that many phenomena that involve morphologically-conditioned alternation should be handled as (weak) suppletion
- today, based on a case study of French verb root alternation:

Morpho-phonological rules, coupled with morphological decomposition and regular phonology, allow insights into the regularities of French ‘irregular’ verb root alternations that are unexplained in any version of the alternative suppletion analysis.

Plan for this talk:

§2: Readjustment and the ‘whys’ of affixation

§3: Decomposing the French verb

§4: Phonology and Morpho-Phonology

§5: Discussion

§6: Connections and conclusions

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2 Readjustment and the ‘whys’ of affixation

- as argued in Halle & Marantz (1993), there is an intricate link between the central tenet of DM (and really generally piece-based morphology) that *affixes are morphemes* and the possibility of accounting for morphologically conditioned Root alternations by means of morpho-phonological rules
- there are a few reasons for this:
 1. the Root as an identifiable morphological object (Embick & Halle 2005 a.o.)
 2. the ability to refer to morpho-syntactic features and exponents as triggers and morphemes as targets of the rule (Calabrese 2019, Embick & Shwayder 2018 a.o.)
 3. the locality conditions circumscribed by the segmentation into affixes (Embick 2010 a.o)
- this is a key difference between this type of morphological theory on the one hand, and theories that do not recognize affixes as pieces or pieces in general
- the latter category includes stem-storage-based theories, but also eg. nanosyntax - in these otherwise very different theories, all morpho-phonology has to be *suppletive*
- as argued in Haugen & Siddiqi (2013), the ‘everything-is-suppletion’ position is possible within DM too, where the maxim amounts to something like ‘everything is Vocabulary Insertion’
- proponents of this view in any type of framework often argue that there is no clear dividing line between ‘weak’ suppletion of the *sing-sang* type and ‘strong’ suppletion of the *go-went* type
- and, as far as I can tell, it is methodologically impossible to rule out a suppletion analysis for anything, ever
- the very fact that there is no clear dividing line, or, in other words, that there is a spectrum of phonological relatedness in suppletion phenomena, might make us suspicious of a one-size-fits-all solution, wherein every alternation that is not ‘productively’ or ‘exceptionlessly’ phonological has to be suppletive
- perhaps the real lesson from the ‘dividing-line’-problem is not that suppletion is all there is, but rather, that phonological relatedness as the sole criterion for or against a suppletion analysis is a flawed diagnostic
- instead, it matters how the morpho-phonology of a system interacts with the morphological decomposition on the one hand, and the regular phonology on the other
- the verb system of French, including finite inflection and verb Root alternation, has featured in theoretical morphology discussion as a *moderately messy* system - featuring a relatively high degree of syncretism in inflection and a non-negligible number of morpho-phonologically alternating verbs

- with these properties (but without infixation or reduplication), this system is amenable to analyses that posit a suppletive stem set plus a very small number of suffixal morphemes (0-1) in their decomposition of the verb
- with the exception of early work on rule-based phonological treatments of French (Schane 1968, Selkirk 1972, Dell 1980), which decompose on the basis of the phonology alone, that is exactly the route that previous work has taken, cf. Bonami & Boyé (2003), Aronoff (2012), Pomino & Remberger (2019), El Fenne (2020), Starke (2020)
- note: this is an empirical domain where the question of relative ‘complexity’ of a (stem) suppletion account and a MP-rule account is at best inconclusive
- traditional classification of French verbs:
 1. 1st group - all infinitives in *-er*, except for *aller* and *envoyer*
 2. 2nd group - the invariant verbs in *-ir*
 3. 3rd group - the rest
- most previous accounts start from the most irregular verbs in the 3rd group to draw conclusions about the system as a whole
- but if we go the other way around...

3 Decomposing the French verb

- an alternative to the approaches mentioned above, consider the highly decompositional analysis indicated in paradigm 1

Paradigm 1: *finir* (‘finish’)

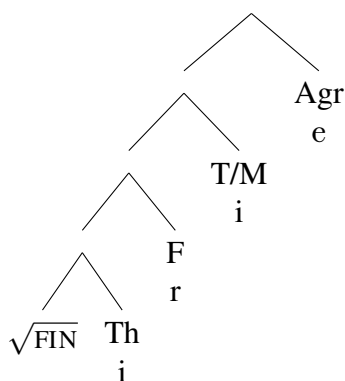
| | indicative | | | conditional | subjunctive |
|------------|----------------|---------------|--------------|-----------------|----------------|
| | present | past | future | | present |
| <i>1sg</i> | fin -i -Ø-Ø | fin -is -Ø-ε | fin -i -r -ε | fin -i -r -Ø-ε | fin -is -Ø(-ə) |
| <i>2sg</i> | fin -i -Ø-Ø | fin -is -Ø-ε | fin -i -r -a | fin -i -r -Ø-ε | fin -is -Ø(-ə) |
| <i>3sg</i> | fin -i -Ø-Ø | fin -is -Ø-ε | fin -i -r -a | fin -i -r -Ø-ε | fin -is -Ø(-ə) |
| <i>1pl</i> | fin -is -Ø-ĩ | fin -is -i -ĩ | fin -i -r -ĩ | fin -i -r -i -ĩ | fin -is -i -ĩ |
| <i>2pl</i> | fin -is -Ø-e | fin -is -i -e | fin -i -r -e | fin -i -r -i -e | fin -is -i -e |
| <i>3pl</i> | fin -is -Ø(-ə) | fin -is -Ø-ε | fin -i -r -ĩ | fin -i -r -Ø-ε | fin -is -Ø(-ə) |
| | √-Th-T/M-Agr | √-Th-T/M-Agr | √-Th-F-Agr | √-Th-F-T/M-Agr | √-Th-T/M-Agr |

1. the **Root** of *finir* undergoes no changes of any kind
2. the **Theme** alternates between *-i* and *-is* (cf. Embick 2016 on *-isc* in Italian)

- (a) note 1, terminology: I avoid the term *Theme vowel* because the 2nd group Theme is underlyingly *-is*. In French academic writing, *thème* is sometimes used to refer to the verb stem, this is not the intended meaning here.
 - (b) note 2: this analysis breaks with the common assumption that French is unlike other Romance languages in lacking Themes altogether, instead, I will argue that the Theme can protect French verb Roots from participating in alternations
 - (c) note 3: the alternation of the 2nd group Theme is phonologically conditioned: ‘s’ appears where a vowel follows / disappears at the end of the word and before /r/
3. the **Future** morpheme F appears only in the future and the conditional forms (cf. Oltra-Massuet & Arregi 2005) - straightforwardly a dedicated future morpheme with a future interpretation and the single exponent ‘r’
 4. the morpheme that I have labeled ‘T/M’ in the table encodes **Tense and Mood**. I assume that it can have the feature values $[\pm\text{PAST}]$ and $[\pm\text{SUBJ}]$.
 5. the last morpheme in the verb marks **Agreement**. The Agreement markers are subject to allomorphy conditioned by T/M (and by F in the future), except in the first and second person plural, which show the same exponents of Agr across the entire paradigm
 - though not in the *passé simple*, where I tentatively assume Agreement allomorphy to be conditioned by Aspect
 - as an example, the syntactic structure and exponents of *finir* in the conditional second person plural (*vous finiriez*) is given below:

Conditional 2pl:

(1)



- under this analysis, the only difference between the 2nd group conjugation above and the 1st group conjugation below is the choice of Theme:

Paradigm 2: trouver ('find')

| indicative | | | conditional | subjunctive |
|------------|------------------|-----------------|----------------|------------------|
| present | imparfait | future | | present |
| <i>1sg</i> | truv (-ə) -Ø-Ø | truv (-ə) -Ø-ε | truv -ə -r -ε | truv (-ə) -Ø(-ə) |
| <i>2sg</i> | truv (-ə) -Ø-Ø | truv (-ə) -Ø-ε | truv -ə -r -a | truv (-ə) -Ø(-ə) |
| <i>3sg</i> | truv (-ə) -Ø-Ø | truv (-ə) -Ø-ε | truv -ə -r -a | truv (-ə) -Ø(-ə) |
| <i>1pl</i> | truv (-ə) -Ø-õ | truv (-ə) -i -õ | truv -ə -r -õ | truv (-ə) -i -õ |
| <i>2pl</i> | truv (-ə) -Ø-e | truv (-ə) -i -e | truv -ə -r -e | truv (-ə) -i -e |
| <i>3pl</i> | truv (-ə) -Ø(-ə) | truv (-ə) -Ø-ε | truv -ə -r -õ | truv (-ə) -Ø(-ə) |
| | √-Th-T/M-Agr | √-Th-T/M-Agr | √-Th-F-Agr | √-Th-F-T/M-Agr |
| | | | √-Th-F-T/M-Agr | √-Th-T/M-Agr |

- French schwa, the really short version: schwa is often deleted, depending on the context, this deletion is obligatory or optional (Dell 1980) and in some contexts arguably probabilistic (Purse 2019)
- here:
 1. schwa Theme optionally surfaces in the future and conditional
 2. never surfaces when followed by a vowel
 3. optionally surfaces word-finally and is assumed to be present underlyingly to prevent final consonant deletion (following Dell 1980; depending on theory of phonological representation, this latter task can be accomplished by any underlying and subsequently deleted vowel, or an empty vowel slot (Anderson 1982, Charette 1991))

To summarize,

- the vast majority of French verbs, the regular 1st and 2nd group conjugations, are completely regular in two ways: the Root never alternates, and the morphological decomposition is exactly the same
- the only difference is the Theme, which is -ə in the 1st group, and -is/-i in the 2nd

Looking ahead,

- the 'irregular' 3rd group also shares the same regular morphological decomposition, with one exception: 3rd group verbs are partially *athematic*, leaving the Root vulnerable to phonological and morpho-phonological alternation

4 Phonology and Morpho-Phonology

- verb Roots that are not protected from alternation by their Theme vowel are vulnerable to two kinds of alternation

1. purely phonological alternations, in particular those that apply at the end of the word
 2. morpho-phonological alternations conditioned by a following morpheme (such as T/M) or exponent (such as *-r*)
- in this section, demonstrations come from six irregular French verbs in ascending order of irregularity: *vendre* ('to sell'), *écrire* ('to write'), *mourir* ('to die'), *acquérir* ('to acquire'), *prendre* ('to take'), and *tenir* ('to hold')

4.1 Latent consonant deletion and Nasalization

- the idea that regular French phonology can cause Root alternation is easily exemplified by athematic verbs from the 3rd group such as *vendre* ('to sell') (the same pattern is observed in eg. *battre* ('to beat'), *perdre* ('to lose'), *vaincre* ('to conquer'))

Paradigm 3: *vendre* ('sell')

| | indicative | | | conditional | subjunctive |
|------------|------------|-----------|-----------|--------------|-------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | vã -Ø-Ø | vãd -Ø-ε | vãd -r -ε | vãd -r -ε | vãd -Ø(-ə) |
| <i>2sg</i> | vã -Ø-Ø | vãd -Ø-ε | vãd -r -a | vãd -r -ε | vãd -Ø(-ə) |
| <i>3sg</i> | vã -Ø-Ø | vãd -Ø-ε | vãd -r -a | vãd -r -ε | vãd -Ø(-ə) |
| <i>1pl</i> | vãd -Ø-õ | vãd -i -õ | vãd -r -õ | vãd -r -i -õ | vãd -i -õ |
| <i>2pl</i> | vãd -Ø-e | vãd -i -e | vãd -r -e | vãd -r -i -e | vãd -i -e |
| <i>3pl</i> | vãd -Ø(-ə) | vãd -Ø-ε | vãd -r -õ | vãd -r -ε | vãd -Ø(-ə) |
| | √-T/M-Agr | √-T/M-Agr | √-F-Agr | √-F-T/M-Agr | √-T/M-Agr |

- if the Root-final consonant in *vendre*, unlike the one in *trouver*, is truly word-final in the present indicative, it is correctly predicted to be subject to *latent consonant deletion*
- classic examples of latent consonant deletion come from the adjectival domain (*pe-tit* vs. *petite*)
- analyses differ (see Tranel 1995 for an overview), but usually conclude that this is a process of deletion, not epenthesis, achieved by a truncation rule (Dell 1980) or failure to license the final consonant representationally, with the final consonant underlyingly extrasyllabic (Booij 1984) or floating (Charette 1991, Paradis & El Fenne 1995 a.o.)
- the other general phonological rule of French at work is nasalization

$$(2) \quad \text{NAS: VN} \rightarrow \tilde{V} / __ \{ \text{C, \#} \}$$

- in the case of *vendre*, with an underlying Root-final consonant, Nasalization applies across the entire paradigm, as every instance of VN is either pre-consonantal or word-final (contrast this with *prendre* later)

4.2 Morpho-phonological consonant deletion

- consider now the paradigm of *écrire* ('to write') below - for the first time, we encounter a Root alternation that is not *quite* predicted from the regular phonology of French

Paradigm 4: *écrire* ('write')

| | indicative | | | conditional | subjunctive |
|------------|--------------|-------------|------------|---------------|--------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | ekri -Ø-Ø | ekriv -Ø-ε | ekri -r -ε | ekri -r -Ø-ε | ekriv -Ø(-ə) |
| <i>2sg</i> | ekri -Ø-Ø | ekriv -Ø-ε | ekri -r -a | ekri -r -Ø-ε | ekriv -Ø(-ə) |
| <i>3sg</i> | ekri -Ø-Ø | ekriv -Ø-ε | ekri -r -a | ekri -r -Ø-ε | ekriv -Ø(-ə) |
| <i>1pl</i> | ekriv -Ø-õ | ekriv -i -õ | ekri -r -õ | ekri -r -i -õ | ekriv -i -õ |
| <i>2pl</i> | ekriv -Ø-e | ekriv -i -e | ekri -r -e | ekri -r -i -e | ekriv -i -e |
| <i>3pl</i> | ekriv -Ø(-ə) | ekriv -Ø-ε | ekri -r -õ | ekri -r -Ø-õ | ekriv -Ø(-ə) |
| | √-T/M-Agr | √-T/M-Agr | √-F-Agr | √-F-T/M-Agr | √-T/M-Agr |

- as before, the disappearance of the Root-final consonant in the present indicative singular is already accounted for by latent consonant deletion
- but in some verbs, the Root-final consonant also disappears before 'r' in the future and the conditional
- a morpho-phonological consonant deletion rule needs to be specified for the morphemes it applies to:

$$(3) \quad \text{C-DEL: } C \rightarrow \emptyset / X_r \quad X = \text{Roots } (\sqrt{\text{LIS}}, \sqrt{\text{SUFIS}}, \sqrt{\text{EKRIV}}, \sqrt{\text{PUV}}, \sqrt{\text{VUL}} \dots), \text{ Th } /-is/$$

- as indicated in the list, this applies not only to Roots, but also handles the *-i/-is* alternation in the Theme
- the Theme-final /s/ has the same distribution as the Root-final consonants specified in this rule
- on this account, a rule for 'irregular' verbs actually applies in the regular 2nd group verbs as well, but does not require reference to stems
- the rule avoids clusters that we might characterize as 'not fantastic', but that are crucially not entirely illicit in French, compare *israélien* ('Israeli'), *avril* ('april'), most importantly, *devrait* ('should')

4.3 Reanalyzing ‘hypermetaphony’

- there are of course more dramatic examples of processes that are restricted to special morphological contexts
- *mourir* (‘to die’) lacks a Theme across the board, and has Root-final /ʁ/ (which is immune to latent consonant deletion)
- unlike for example *courir* (‘to run’), *mourir* shows a vowel alternation between /œ/ and /u/ in the Root

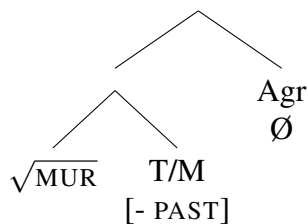
Paradigm 5: mourir (‘die’)

| | indicative | | | conditional | subjunctive |
|------------|------------|-----------|-----------|--------------|-------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | mœr -Ø-Ø | mur -Ø-ε | mur -r -ε | mur -r -ε | mœr-Ø(-ə) |
| <i>2sg</i> | mœr -Ø-Ø | mur -Ø-ε | mur -r -a | mur -r -ε | mœr -Ø(-ə) |
| <i>3sg</i> | mœr -Ø-Ø | mur -Ø-ε | mur -r -a | mur -r -ε | mœr -Ø(-ə) |
| <i>1pl</i> | mur -Ø-õ | mur -i -õ | mur -r -õ | mur -r -i -õ | mur -i -õ |
| <i>2pl</i> | mur -Ø-e | mur -i -e | mur -r -e | mur -r -i -e | mur -i -e |
| <i>3pl</i> | mœr -Ø(-ə) | mur -Ø-ε | mur -r -õ | mur -r -ε | mœr -Ø(-ə) |
| | √-T/M-Agr | √-T/M-Agr | √-F-Agr | √-F-T/M-Agr | √-T/M-Agr |

- the /œ/-alternant is found in the indicative and subjunctive present, but not in the 1st and 2nd person plural
- one possible analysis, proposed by Dell & Selkirk (1978), is to treat this as a stress-conditioned process of hypermetaphony, whereby /œ/ raises to /u/ in an unstressed syllable
- under the assumption that there is word-level stress on the last non-schwa syllable in French, the stress condition correctly picks out all cells in the paradigm apart from the present indicative and subjunctive singular and 3rd plural
- this is a purely phonological analysis, but one that references an abstract notion of word-level stress in French that is controversial (cf. Ulfsbjorninn 2022)
- alternatively, consider that the alternation could be triggered by T[-PAST]

Present Singular:

(4)



- to explain why T[-PAST] fails to trigger the alternation in the 1st and 2nd person plural in both Moods, we can appeal to an Impoverishment rule

$$(5) \quad [-\text{PAST}] \rightarrow \emptyset / _ \text{ [+PART, +PL]}$$

- the morpho-phonological rule which triggers the alternation itself is given with the list of Roots that it applies to

$$(6) \quad /u/ > /œ/ / X_T[-\text{PAST}] \quad X = \text{Roots} (\sqrt{\text{MUR}}, \sqrt{\text{VUL}}, \sqrt{\text{MUV}}, \sqrt{\text{PUV}})$$

4.4 Closed Syllable Adjustment and Diphthongization

- in the paradigm of *aquérir* ('to acquire'), we see another (arguably) general process of the phonology of French at work
- traditionally referred to as the *loi de position*, this process regulates the distribution of mid vowels in reference to syllable structure
- I will adopt Dell's (1980) account that collapses alternations of both /e/ and /ə/ in open syllables with /ɛ/ in closed syllables

$$(7) \quad \text{CSA: } \{e, ə\} \rightarrow \varepsilon / _ C \{ \#, C, ə \}$$

Paradigm 6: *aquérir* ('acquire')

| | indicative | | | conditional | subjunctive |
|------------|--------------------------|--------------------------|------------------------|----------------------------|--------------------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | akjɛr -Ø-Ø | aker -Ø-ɛ | akɛr -r -ɛ | akɛr -r -ɛ | akjɛr -Ø(-ə) |
| <i>2sg</i> | akjɛr -Ø-Ø | aker -Ø-ɛ | akɛr -r -a | akɛr -r -ɛ | akjɛr -Ø(-ə) |
| <i>3sg</i> | akjɛr -Ø-Ø | aker -Ø-ɛ | akɛr -r -a | akɛr -r -ɛ | akjɛr -Ø(-ə) |
| <i>1pl</i> | aker -Ø-õ | aker -i -õ | akɛr -r -õ | akɛr -r-i -õ | aker -i -õ |
| <i>2pl</i> | aker -Ø-e | aker -i -e | akɛr -r -e | akɛr -r-i -e | aker -i -e |
| <i>3pl</i> | akjɛr -Ø(-ə) | aker -Ø-ɛ | akɛr -r -õ | akɛr -r -ɛ | akjɛr -Ø(-ə) |
| | $\sqrt{-\text{T/M-Agr}}$ | $\sqrt{-\text{T/M-Agr}}$ | $\sqrt{-\text{F-Agr}}$ | $\sqrt{-\text{F-T/M-Agr}}$ | $\sqrt{-\text{T/M-Agr}}$ |

- the *aquérir* class shows another alternation, this one with the same distribution as the /u/~œ/ alternation which we discussed above
- in the indicative present and subjunctive, all but the first and second person plural appear with a diphthongized Root vowel
- as above, I adopt an analysis where this is an alternation triggered by T[-PAST]

$$(8) \quad /ɛ/ > /jɛ/ / X_T[-\text{PAST}] \quad X = \text{Roots} (\sqrt{\text{AKER}}, \sqrt{\text{VəN}}, \sqrt{\text{TəN}}, \dots)$$

- we have already posited Impoverishment of [- PAST] for the first and second plural above, they are now expected to once again escape the morpho-phonological process, *even though it is a different process*
- the Impoverishment rule bleeds both morpho-phonological processes that we have seen so far

4.5 d-insertion

- closed syllable adjustment and nasalization together account for a large part of the alternation in the verb *prendre* ('to take')

Paradigm 7: *prendre* ('take')

| | indicative | | | conditional | subjunctive |
|------------|--------------|------------|------------|--------------|-------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | prã -Ø-Ø | prən -Ø-ε | prãd -r -ε | prãd -r -ε | prən -Ø(-ə) |
| <i>2sg</i> | prã -Ø-Ø | prən -Ø-ε | prãd -r -a | prãd -r -ε | prən -Ø(-ə) |
| <i>3sg</i> | prã -Ø-Ø | prən -Ø-ε | prãd -r -a | prãd -r -ε | prən -Ø(-ə) |
| <i>1pl</i> | prən -Ø-õ | prən -i -õ | prãd -r -õ | prãd -r-i -õ | prən -i -õ |
| <i>2pl</i> | prən -Ø-e | prən -i -e | prãd -r -e | prãd -r-i -e | prən -i -e |
| <i>3pl</i> | prən -Ø(-ə)r | prən -Ø-ε | prãd-r -õ | prãd -r -ε | prən -Ø(-ə) |
| | √-T/M-Agr | √-T/M-Agr | √-F-Agr | √-F-T-Agr | √-T/M-Agr |

- neither the rules so far nor the underlying form can explain the presence of a *-d* in the future and the conditional
- note that it is not an option to make this /d/ part of the Root underlyingly: The paradigm of *prendre* contrast with the paradigms of verbs that do have an underlying /d/ in the Root, such as *vendre* ('to sell') or *attendre* ('to wait'). Consider the 1st person plural present indicative forms: *nous prenons*, *nous attendons*
- new rule:

$$(9) \quad \text{D-INS: } \emptyset \rightarrow d / \text{X_r} \quad \text{X} = \text{Roots } (\sqrt{\text{PR}\bar{\text{A}}\text{N}}, \sqrt{\text{VUL}}, \sqrt{\text{T}\bar{\text{A}}\text{N}}, \sqrt{\text{COUS}}\dots)$$

- note that infinitives suggest that d-insertion applies before any /r/ that immediately follows the Root, compare *prendre*, *moudre* ('to grind', cf. *nous moulons*), *coudre* ('to sew', cf. *nous cousons*)

4.6 And now everyone:

- as a final example, consider how the rules above work together to produce almost (!) the entire paradigm of one of the most irregular verbs of French, *tenir* ('to hold'), which has four different surface realizations of the Root

Paradigm 8: tenir (‘hold’)

| | indicative | | conditional | | subjunctive |
|------------|-------------|-----------|-------------|---------------|-------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | tjẽ -Ø-Ø | tən -Ø-ε | tjẽd -r-ε | tjẽd -r -Ø-ε | tjɛn -Ø(-ə) |
| <i>2sg</i> | tjẽ -Ø-Ø | tən -Ø-ε | tjẽd -r-a | tjẽd -r -Ø-ε | tjɛn -Ø(-ə) |
| <i>3sg</i> | tjẽ -Ø-Ø | tən -Ø-ε | tjẽd -r-a | tjẽd -r -Ø-ε | tjɛn -Ø(-ə) |
| <i>1pl</i> | tən -Ø-õ | tən -i-õ | tjẽd -r-õ | tjẽd -r -i -õ | tən -i-õ |
| <i>2pl</i> | tən -Ø-e | tən -i-e | tjẽd -r-e | tjẽd -r -i -e | tən -i-e |
| <i>3pl</i> | tjɛn -Ø(-ə) | tən -Ø-ε | tjẽd -r-õ | tjẽd -r -Ø-ε | tjɛn -Ø(-ə) |
| | √-T/M-Agr | √-T/M-Agr | √-F-Agr | √-F-T/M-Agr | √-T/M-Agr |

- nasalization and closed syllable adjustment account for the alternations between /-ə/ and /-ε/ as well as /-ẽ/ in the paradigm
- d-insertion applies in the future and the conditional
- the only quirk is that diphthongization applies, as expected, triggered by T[- PAST], but additionally in the future and the conditional
- preliminary solution: in the case of *tenir*, the rule is triggered both by T[- PAST] and by F

5 Discussion

- in the light of this case study, let us consider again the claim that weak suppletion is indistinguishable from strong suppletion
- under the analysis presented here, ‘weak’ suppletion is (morpho-)phonological alternation, which has the following advantages:
 1. allows proper integration with the regular phonology of the language
 2. allows consistent morphological decomposition across verb classes
 3. most importantly, reveals that subclasses of the irregular verbs are created by the cumulative subset of morpho-phonological rules that apply to that class
 4. some of the most irregular verbs simply apply a large subset of the rules found elsewhere
- strong/real suppletion, in contrast, is characterized by breaking the mold, that is, *lacking* the properties above:

Paradigm 9: aller ‘go’

| | indicative | | | conditional | subjunctive |
|------------|------------|-----------|---------|-------------|-------------|
| | present | imparfait | future | | present |
| <i>1sg</i> | v -ε | al -Ø-ε | i -r -ε | i -r -Ø-ε | aj -Ø(-ə) |
| <i>2sg</i> | v -a | al -Ø-ε | i -r -a | i -r -Ø-ε | aj -Ø(-ə) |
| <i>3sg</i> | v -a | al -Ø-ε | i -r -a | i -r -Ø-ε | aj -Ø(-ə) |
| <i>1pl</i> | al -õ | al -i -õ | i -r -õ | i -r -i -õ | al -i -õ |
| <i>2pl</i> | al -e | al -i -e | i -r -e | i -r -i -e | al -i -e |
| <i>3pl</i> | v -õ | al -Ø-ε | i -r -õ | i -r -Ø-ε | aj -Ø(-ə) |
| | √-Agr | √-T/M-Agr | √-F-Agr | √-F-T/M-Agr | √-T/M-Agr |

- even here, there is some regularity:
- all cells with the *al-* and *i-* Root allomorphs show exactly the same inflectional morphology that we have gotten used to.
- the future and the conditional are once again uniform in the phonological form of the Root, just like they have been for every other verb in the language
- in the indicative present, we see that the truly suppletive Roots are different from anything we have seen so far not only in the degree of phonological divergence, but also in their failure to appear with the regular agreement morphology
- ‘weakly suppletive’ alternating Roots never condition irregular agreement morphology in the French verb system
- these types of distinctions are impossible in a theory that treats all irregularity as suppletion
- Haugen & Siddiqi’s (2013) argument: the existence of Root suppletion (cf. Harley 2014) should lead to the rejection of Early Root Insertion, which should in turn lead to the rejection of readjustment rules, since a theory with competition for Roots can handle all Root alternations as suppletion
- but the existence of readjustment rules is only tied to the question of whether Roots are inserted early or late if they are inserted early
- while a theory with Early Insertion for Roots clearly does need readjustment rules, and in fact prohibits all but pseudo-suppletion for Roots (cf. Harley & Noyer 2000)
- it does not similarly follow from the assumption of Late Insertion for Roots that *all* Root alternation should be handled as suppletion
- venturing out to less theory-internal debates:

5.1 Morphological decomposition and suppletion

- Aronoff (2012) takes the French verbal system to be an obvious case of the morphomic distribution of a stem, in particular of what he calls the PIPS stem (for present plural/ imperative plural/ subjunctive (plural)/ imperfect/ present participle stem)
- Aronoff's argument rests on the (correct) observation that there is no unifying morpho-syntactic feature in the PIPS cells of the paradigm
- but in our terms, the PIPS stem turns out to be the Root(-Theme) complex (examples provided by Aronoff are *finiss-* and *dorm-*), which, as we have seen, is phonologically distributed - it appears in this form pre-vocally
- Aronoff builds in part on Bonami & Boyé (2003 et seq.), whose stem suppletion account is more ambitious
- Bonami & Boyé distribute stem alternants by postulating dependency relations between different morpho-syntactically specified parts of the stem space
- in this approach each cell of the paradigm ends up either specifying which stem should be employed, or inherits the appropriate form through the dependency tree
- for example, the third plural form by default depends on the indicative present singular stem, and the subjunctive singular and third plural in turn depend on the indicative third plural
- often derives similar results to my analysis, but for very different reasons
- the indicative present singular, for example, 'branches off' in the dependency tree as described above, in my approach, the reason it sometimes employs a unique Root alternant is that the Root finds itself in word-final position
- note also that the size of the stem space and the proliferation of the dependency tree are necessarily determined by the most irregular verbs:
- Bonami & Boyé discuss admitting a latent consonant deletion mechanism, but in their system, this would only reduce the number of stems for *vendre* from 2 to 1, but is inconsequential for the overall structure of the components of the analysis
- both Aronoff and Bonami & Boyé miss generalizations, at some level of abstraction due to *underdecomposition*
- a more fine-grained morphological decomposition provides the contexts to see phonological regularities as conditioned by the morpho-phonological environment
- the *underdecomposition*-problem is shared by the nanosyntax approach put forth in Starke (2020)
- in Starke's account, words are built by Merge, which operates to assemble a fixed sequence of functional projections, each of which encodes only a single syntactic feature

- at each step, the structure as so far assembled is checked against the Lexicon, which stores ‘treelets’ with their exponent. The syntactic structure is spelled out by what is essentially a mechanism of best fit
- if there is no entry in the Lexicon that matches the syntactic structure, last-resort movement applies until the structure is rescued (ie. matched by a lexical entry)
- a property of Starke’s account that is important to stress is the absence of the morpheme - the treelets in the nanosyntactic lexicon are not morphemes with internal structure: they are pieces, but not building blocks, of the syntactic structure that they belong to
- for example, Starke’s representation of ‘irregular’ present indicative singular forms is a big suppletive tree containing the Root and every syntactic projection above it, where I assumed a very small structure, containing just the Root, an impoverished T/M-head, and a zero agreement marker
- to justify the low position of Mood (below T) in his structures, Starke argues that Mood has to be bundled with the Root to the exclusion of T to allow for a Mood-suppletive Root in eg. *savoir* (‘to know’)
- however, Root alternations are far more frequently conditioned by Tense than Mood in French, we have captured the fact that both are possible, and that the Past and the Subjunctive have the same exponent, by positing a single head T/M that houses both Tense and Mood features
- this is impossible in Starke’s system - and he does not address T-conditioned Root changes

In the end, comparing these approaches to the French verb system shows that

1. the granularity of the morphological analysis matters (call this ‘the whys of affixation’)
2. the ability to understand Root alternations in the context of phonology matters (for example, a Root can be word-final in the phonology but not in the syntax)

6 Connections and conclusions

- in this talk, I’ve tried to show that an analysis of morpho-phonological phenomena in terms of MP rules can reveal patterns and generalizations that remain invisible in suppletive and ‘Vocabulary-Insertion-only’ accounts
- in addition, though phonological relatedness by itself is not a great diagnostic against strong suppletion, the MP rules account accommodates relatedness naturally
- What becomes of the concerns against morpho-phonological rules on page 1?

- take Bermúdez-Otero (2012), who writes that ‘the main argument against readjustment rules, however, is that they utterly destroy the empirical content of morphological and phonological hypotheses.’
- personally, I am convinced that the opposite is true: morphological and phonological hypotheses are better off, their empirical coverage improved, when they are allowed to inform each other, and to be linked by morpho-phonology

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