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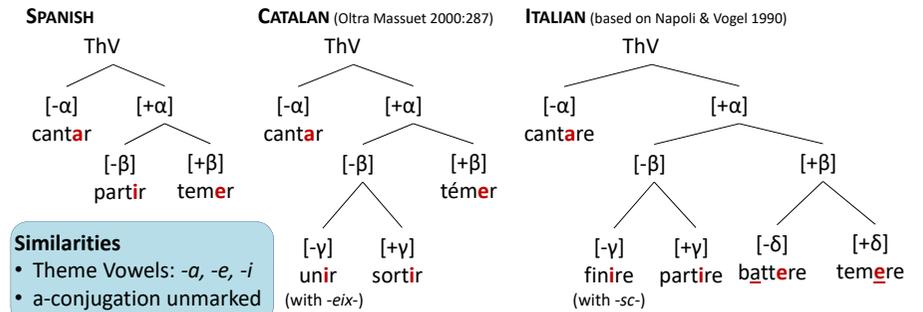
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Romance theme vowels:
Not just ornamental morphemes,
but not syntactic elements either



1. Introduction

- Spanish, Catalan and Italian have clearly preserved **thematic** conjugation systems, despite many diachronic and synchronic differences.
- In all these languages the respective conjugation classes (CCs) are not equally productive, not equally regular and they also have different (type) sizes.
- What is more, conjugation class oppositions (of the more marked CCs) may be neutralized.
- Oltra-Massuet (1999, 2000) argues that theme vowels (ThVs) involved are bundles of subatomic idiosyncratic features organized in a markedness hierarchy or feature geometry:



1. Introduction

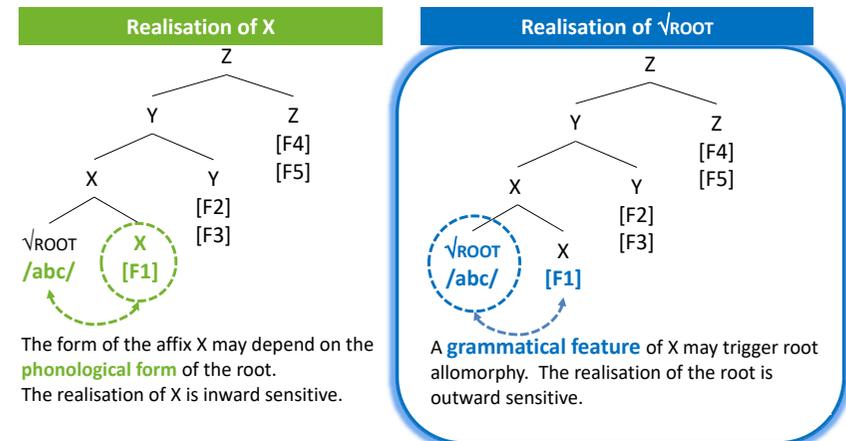
- ThV are considered by many linguists – as in Oltra-Massuet 1999 – to be mere **ornamental elements** without any effect on syntax and semantics (see however Kayne 2016, 2019 and Fábregas 2017, 2022, who analyse ThVs as **verbalizers**).
- We agree with the idea that they are not to be confused with the realizations of the verbalizer v^0 , but we want to highlight that they are not as ornamental as one may think:

ThV have an impact on the (ir)regularity of verbal forms
(Calabrese 2015)

- In our talk, we will illustrate and give an explanation for the link between **athematicity and irregularity** in Romance.
- We claim that a realized ThV at the right edge of the phase head specified by v^0 does condition the interaction between the root and its grammatical environment. More precisely, it **blocks allomorphy**.

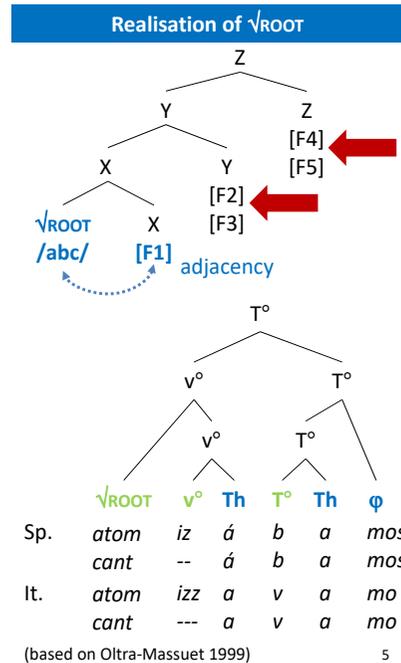
1. Introduction

- Two basic types of allomorphy (cf. *inward* vs. *outward sensitivity*; Bobaljik 2000):



1. Introduction

- Allomorphy triggered by **adjacent elements** (here: $\sqrt{\text{ROOT}}$ and X) is not considered to be problematic.
- Yet, can the features of the non-adjacent elements Y and/or Z influence the realisation of the root?
 - No, since they do not meet the **locality restrictions** (cf. e.g. Embick 2010, Moskal 2013).
 - Yes, since there are abundant examples for it (e.g. suppletion).
- Starting from the structure proposed by Oltra-Massuet (1999), the main question is thus: Under which conditions may T° and/or φ (or other non-adjacent features, e.g. Asp°) trigger root allomorphy?



1. Introduction

- Sp. *cant-o* vs. **cant-a-o* (avoidance of a hiatus (?))
- Lat. *cant-ā-re* vs. *leg-ē^{epenthetic}-re* (athematic CC*)
- Sp. *quer-e-mos* vs. *quis-imos* (grammatically determined)

- We have to distinguish different cases of athematicity:
- Of the latter two we will discuss the following cases of allomorphy:

	trigger	thematic	athematic
(1)	Asp°	It. <i>amato</i> 'love _{PST.PRTCPL} '	<i>perso</i> 'lose _{PST.PRTCPL} '
(2)	φ	It. <i>andate</i> 'go _{2PL} '	<i>vai</i> 'go _{2SG} '
(3)	T°	Sp. <i>queremos</i> 'want _{INF} '	<i>quisimos</i> 'want _{1SG.INDEF} '
		<i>ponemos</i> 'put _{1PL.PRES} '	<i>pondremos / pondríamos</i> 'put _{1PL.FUT / 1PL.COND} '
(4)	CCs	Fr. <i>arriver</i> ~ <i>arrive</i> s 'arrive _{INF ~ 2SG} '	<i>vivre</i> ~ <i>vis</i> 'live _{INF ~ 2SG} '

- The presence of a ThV has a direct effect on regularity (and productivity) of the respective verbal forms whereas its **absence** may cause **allomorphy**.
- In our talk, we argue that **theme vowels** (ThV) at right edge of v° function as a kind of **"intermediate domain delimiter"** in the sense of Bobaljik (2015).
- Following the DM-based *Vocabulary Insertion Only Model* proposed by Haugen & Siddiqi (2016), we will propose an analysis for the mentioned link between athematicity and irregularity based on **Spanning**.

*Note that the synchronic view on Romance differs from the definition of athematic CCs as applied by traditional Indoeuropean studies.

1. Introduction

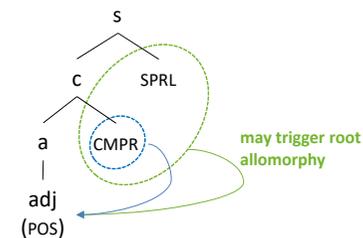
Outline of the talk

- Introduction
- Theoretical background
 - 2.1 Locality domains
 - 2.2 Suppletion generalisation
 - 2.3 Athematicity in DM-approaches
- Analysis of irregular verbs
 - 3.1 It. *amato* vs. *perso*
 - 3.2 It. *vai* vs. *andate*
 - 3.3 Sp. *queremos* vs. *quisimos* (*ponemos* vs. *pondríamos*)
 - 3.4 Fr. *arriver* vs. *vivre*
- Conclusion

2.1 Locality domains

- Bobaljik (2012, 2015) has shown that suppletion follows a certain systematicity: three attested vs. two unattested suppletion patterns.

Fig. 1: Structure (Bobaljik 2012, 2015)



Tab. 1: Suppletion patterns – grades of the adjective (Bobaljik 2012, 2015)

POS	CMPR	SPRL	example
A	A	A	<i>big – bigger – biggest</i>
A	B	B	<i>good – better – best</i>
A	B	C	<i>bonus – melior – optimus</i>
A	B	A	* <i>good – better – goodest</i>
A	A	B	* <i>good – gooder – best</i>

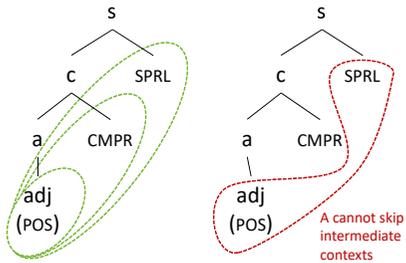
Exponents for adj:

AAA	BIG → <i>big-</i>
A BB	GOOD → <i>bett-</i> / ___] CMPR] SPRL GOOD → <i>good</i> (elsewhere)
A B C	GOOD → <i>opt-</i> / ___] CMPR] SPRL GOOD → <i>mel-</i> / ___] CMPR GOOD → <i>bon-</i> (elsewhere)

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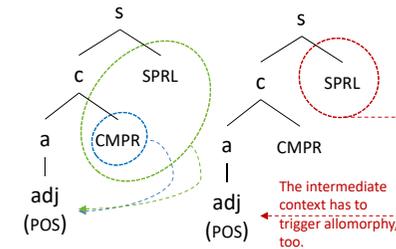
- *ABA:** The default form A is available for the context C (here: SPRL) only if it is also available for the context B (here: CMPR) (cf. Bobaljik 2015:5, 13).

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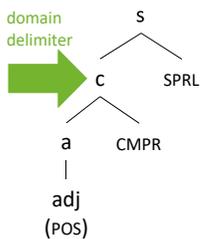
- *AAB:** Context C (here: SPRL) can trigger root allomorphy only if context B (here: CMPR) causes allomorphy as well (cf. Bobaljik 2015:13).

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$\alpha \dots]_X \dots \beta$

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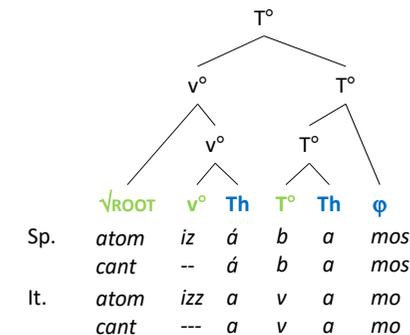
There are **locality domains** within complex words:

„Node α may not be conditioned by node β in the configuration $\alpha \dots]_X \dots \beta$, where X is a domain delimiter“ (Bobaljik 2015: 13; based on Embick 2010, Moskal 2013).

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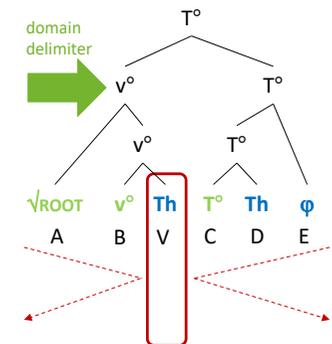
2.1 Locality domains

- In Romance, it seems as if **ThVs** have also a **domain delimiting function** since they are at the right edge of the phase head v° .



(based on Oltra-Massuet 1999)

green = syntactic terminal nodes
blue = post-syntactic elements



The theme vowel “delimites” (or determines) the interaction between the context to its right and to its left.

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2.2 Suppletion generalisation

- Different generalizations regarding suppletion (or irregularities) and the number of affixes have been proposed in the literature.
- *The Comparative Suppletion Generalisation (CSG)* (Caha et al. 2019)
If there is root suppletion, the number of overt markers of the comparative is reduced.

regular		irregular
<i>mil-</i>	<i>-ej-</i> <i>-š-</i> <i>-í</i> 'nicer'	<i>lep-</i> \emptyset <i>-š-</i> <i>-í</i> 'better' (<i>dobr-ý</i> 'good')
<i>kulat-</i>	<i>-ěj-</i> <i>-š-</i> <i>-í</i> 'rounder'	<i>hor-</i> \emptyset <i>-š-</i> <i>-í</i> 'worse' (<i>špatn-ý</i> 'bad')
<i>hloup-</i>	<i>-ěj-</i> <i>-š-</i> <i>-í</i> 'more stupid'	<i>men-</i> \emptyset <i>-š-</i> <i>-í</i> 'smaller' (<i>mal-ý</i> 'small')

Tab. 2: Czech comparatives (Caha et al. 2019)

- *Generalization based on the (C)SG*
„Root-determined zeroes spread from the inside out, and cannot skip intervening heads“. (Caha et al. 2019:12)
- *The Suppletion Generalization (SC)* (Vanden Wyngaerd 2018:1)
“If there is **irregularity** in the form of **either the root or the suffixes**, the number of suffixes gets reduced”.
➔ I.e., the features encoded in the “lost” suffix are formally reflected in the irregularity.

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2.2 Suppletion generalisation

- Vanden Wyngaerd (2018) mentions e.g. Italian past participle to illustrate his idea (in line with Calabrese 2015).

regular		Irregular*
<i>am-</i>	<i>-a-</i> <i>-t-</i> <i>-o</i> 'loved'	<i>per-</i> \emptyset <i>-s-</i> <i>-o</i> 'lost'
<i>batt-</i>	<i>-u-</i> <i>-t-</i> <i>-o</i> 'beaten'	<i>cor-</i> \emptyset <i>-s-</i> <i>-o</i> 'run'
<i>part-</i>	<i>-i-</i> <i>-t-</i> <i>-o</i> 'left'	<i>eccel-</i> \emptyset <i>-s-</i> <i>-o</i> 'excelled'

Table 1: Italian past participles

- **thematic** verbal forms
- $\sqrt{\text{root}}$ is extended by a ThV to form a stem
- ThVs indicate membership to a specific conjugation class
- link between thematicity and **regularity**

- **athematic** verbal forms
- $\sqrt{\text{root}}$ is not extended by a ThV
- $\sqrt{\text{root}}$ equals the stem
- irregular past participle marker (and sometimes irregular $\sqrt{\text{root}}$)
- link between athematicity and **irregularity**

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Table 1: Italian past participles

- Note that the irregular past participles are segmented by Calabrese (2015) based on the Latin sigmatic perfect.
- We argue instead that, in a synchronic view, Italian *pers-*, *cors-*, *eccels-* etc. should be represented as allomorphic VIs to *perd-*, *corr-*, *eccell-* etc. and thus not be segmented anymore (as e.g. *fec-* ~ *fac-*, *vid-* ~ *ved-*).
- That means, the irregularity has become part of the exponent which realizes the root, together with functional features.

regular		Irregular*
<i>am-</i>	<i>-a-</i> <i>-t-</i> <i>-o</i> 'loved'	<i>pers-</i> <i>-o</i> 'lost'
<i>batt-</i>	<i>-u-</i> <i>-t-</i> <i>-o</i> 'beaten'	<i>cors-</i> <i>-o</i> 'run'
<i>part-</i>	<i>-i-</i> <i>-t-</i> <i>-o</i> 'left'	<i>eccels-</i> <i>-o</i> 'excelled'

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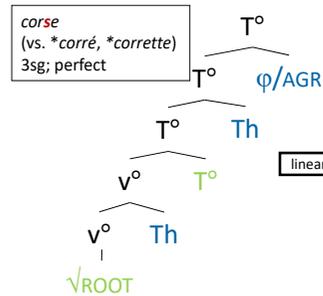
2.3 Athematicity in DM-approaches

- How can we implement the absence of a ThV?
- There are different proposals for (grammatically determined) athematicity:
 - ➔ (A) A terminal does not surface because it is realized by \emptyset (zero exponence with pruning of \emptyset) (e.g. Calabrese 2012).
 - ➔ (B) A terminal does not surface due to **fusion** with another terminal.
 - ➔ (C) A terminal does not surface because it is realized **cumulative** with other features.
 - (D) Some roots are specified with the **diacritic feature** [-TV] that avoids the insertion of a ThV ([-TV] is impoverished in some cases) (e.g. Calabrese 2015a, 2015b).
 - (E) Roots are stored in the **lexicon** with (or without) their corresponding ThVs (e.g. Bermúdez-Otero 2012, 2016).
- etc.
- We will shortly discuss option (A) and (B) in what follows in order to illustrate the problems of this kind of approach and propose later an analysis based on option (C) in Section 3.

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2.3 Athematicity in DM-approaches

Option (A): A terminal does not surface because it is realized by \emptyset (zero exponence with pruning of \emptyset) (e.g. Calabrese 2012).



LS: $\sqrt{\text{root}} \widehat{[\text{Th}]}, [\text{Th}] \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 VI: $\text{cor}(\text{r}) \widehat{[\text{Th}]}, [\text{Th}] \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 VI: $\text{cor}(\text{r}) \widehat{[\emptyset]}, [\emptyset] \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$

linearization

Rule for the realization of Th:

$\text{TV} \leftrightarrow \emptyset / \sqrt{\text{root}}_{\alpha/i}^{[+TV\text{-pruning}]} \text{ ___ } [+perf]$
 { $\text{root}_{\alpha/i}^{[+TV\text{-pruning}]} = \text{corr}, \text{muov}$ etc.}

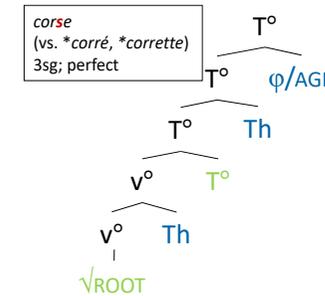
(cf. Calabrese 2012:29)

- context-sensitive and root-specific rule;
- root marked with diacritic features;
- not without exceptions (cf. *corremmo*), i.e. additional assumptions are necessary (e.g. impoverishment of the diacritic in certain contexts).

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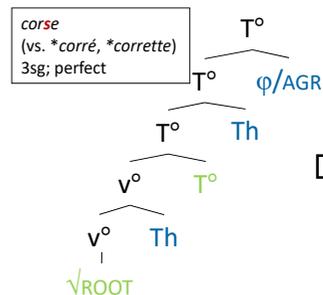
linearization

- Vocabulary Insertion (VI) takes place at the linearized structure (LS).
- Thus, the locality condition on allomorphy is also linearly defined:
 - (a) Node α morphologically interacts with node β iff α, β are **local**.
 - (b) α, β are local if no overt node intervenes (**linear adjacency**).
- $\sqrt{\text{root}}$ and T are not linear adjacent, but the root triggers allomorphy on T.
- **Pruning (P):** Nodes that are not exponed with phonological material are removed from the structure (Embick 2003, 2010).

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2.3 Athematicity in DM-approaches

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 VI: $\text{cor}(\text{r}) \widehat{[\emptyset]}, [\emptyset] \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 P: $\text{cor}(\text{r}) \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 VI: $\text{cor}(\text{r}) \widehat{[-s]}_{\text{T}}, [-s]_{\text{T}} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$

linearization

After pruning root and T are linearly adjacent and interact!

Rule for the realization of T:

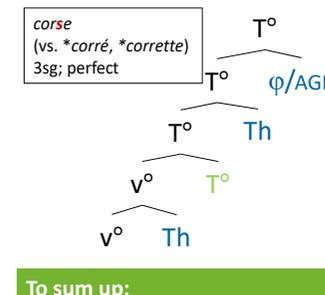
$[-s] \leftrightarrow [+perf]_{\text{T}} / \sqrt{\text{root}}^{\text{s}} \text{ ___ }$
 { $\text{root}^{\text{s}} = \text{corr}, \text{muov}$ etc.}

- context-sensitive rule;
- root marked with diacritic features.

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2.3 Athematicity in DM-approaches

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linearization

P: $\text{cor}(\text{r}) \widehat{\text{T}}, \text{T} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 VI: $\text{cor}(\text{r}) \widehat{[-s]}_{\text{T}}, [-s]_{\text{T}} \widehat{\text{Th}}, \text{Th} \widehat{\varphi}$
 etc.

To sum up:

- Calabrese's analysis is quite complex. He assumes wellformedness conditions, exceptions to this wellformedness conditions, zero exponence, different diacritic features, impoverishment (of diacritic features), listing of roots, highly context-sensitive vocabulary items etc. etc.
- Additionally, it is not clear how his analysis works for root allomorphy, i.e. for cases where T or other elements trigger allomorphy on the root.
- NB: The root is realized as first element! (look-ahead problem)

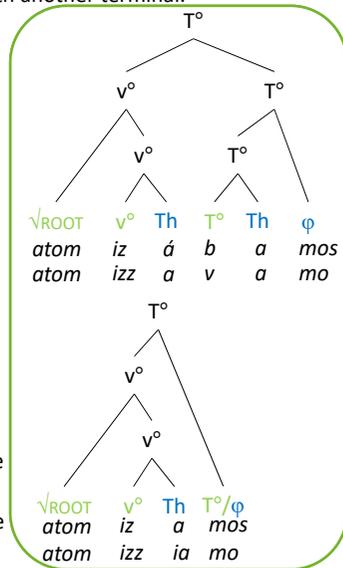
2.3 Athematicity in DM-approaches

Option (B): A terminal does not surface due to **fusion** with another terminal.

- Morphological complexity stands in direct relation to the syntactic-semantic features of the respective forms (Oltra-Massuet 1999, Arregi 2000).
- T° fuses with φ whenever it encodes a semantically unmarked tense features, i.e. a tense feature that is also morphophonologically never realised.

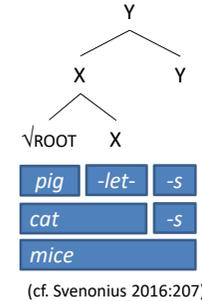
Problems for root allomorphy:

- Fusion reverses the well-formedness condition (WFC), i.e. the adding of φ.
- Why not assume that WFC is not valid for certain tenses?
- Fusion is rejected by many linguistics.
- Even after fusion the T/φ-features are neither structurally nor (in most cases) linearly adjacent to the root.
- Thus, fusion does not alter the closeness of T/φ to the root.



2.3 Athematicity in DM-approaches

- Option (C): Another possibility for the non-realization of certain terminals is **Spanning** that allows to insert phonological material not just in one terminal node at a time.
- Spanning is a way to formalize **cumulative exponence**.
- In contrast to fusion and pruning, spanning is not an additional post-syntactic process, but a **type of Vocabulary Insertion** (cf. Haugen & Siddiqi 2016 for the *Vocabulary Insertion Only Model*).



(im)possible spans

- <√ROOT>
- <X>
- <Y>
- <√ROOT, X>
- <√ROOT, X, Y>
- <X, Y>
- *<√ROOT, Y>

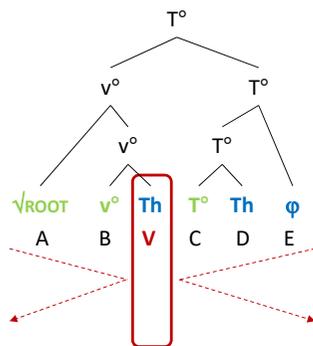
Locality condition on allomorphy

- Span Adjacency Hypothesis:** Allomorphy is conditioned only by an adjacent span.
- I.e. a node may exhibit allomorphy triggered by a nonadjacent head if and only if any and all intervening heads also participate in the allomorphy selection.

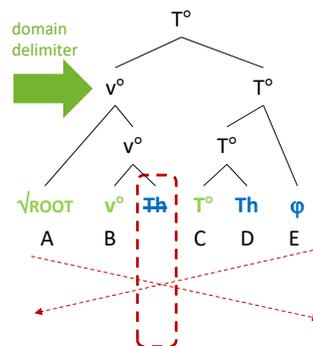
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3. Analysis of irregular verbs

- We agree with Calabrese in that the absence of ThVs may trigger root allomorphy.
- Or the other way round, it seems as if **ThVs** (at the right edge of v°) have a **domain delimiting function**.



The ThV delimites (or determines) the interaction between the context to its right and to its left.



If the ThV is not separately realized, elements to the right may condition those to the left and vice versa.

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3.1 It. *amato* vs. *perso*

- Regular vs. irregular participle forms

thematic verbal form (based on Oltra-Massuet 1999)	athematic verbal form	vocabulary items
		<p>Exponents (Vocabulary Items) (incomplete)</p> <p><i>pers-</i> ↔ <√LOSE, v°, Th> / ___ T°-[perf; 1sg/3] / ___ Asp°-[participle]</p> <p><i>perd-</i> etc. ↔ <√LOSE, v°> (elsewhere)</p> <p><i>fec-</i> ↔ <√DO, v°, Th> / ___ T°-[perf; 1sg/3]</p> <p><i>fatt-</i> ↔ <√DO, v°, Th> / ___ Asp°-[participle]</p> <p><i>fac-</i> ↔ <√DO, v°> (elsewhere)</p> <p>Note that for some verbs the contexts for <i>pers-</i> are realised by different VIs.</p>
<p>irreg. vs. reg. participle</p>	<p>adjacent spans</p>	

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3.1 It. *amato* vs. *perso*

- Regular vs. irregular participle forms

*Note that is not necessarily the case that also Asp° is endowed with a ThV due to the well-formedness condition for functional categories proposed by Ultra-Massuet (1999). Maybe the latter refers only to v° and the finite functional categories in the verbal domain.

thematic verbal form
(based on Ultra-Massuet 1999)

athematic verbal form

vocabulary items

Exponents (Vocabulary Items) (incomplete)

pers- ↔ <√lose, v°, Th> / ___ T°-[perf; 1sg/3]

pers- ↔ <√lose, v°, Th, Asp°-[participle], Th>

perd- ↔ <√lose, v°> (elsewhere)

etc.

fec- ↔ <√do, v°, Th> / ___ T°-[perf; 1sg/3]

fatt- ↔ <√do, v°, Th, Asp°-[participle], Th>

fac- ↔ <√do, v°> (elsewhere)

Therefore it might just as well be that the span for irregular participles is larger than the one for the *passato remoto*, namely including Asp° (and Th*).

3.1 It. *amato* vs. *perso*

- Overabundance (cf. e.g. Thornton 2011, 2012)

thematic verbal form
(based on Ultra-Massuet 1999)

athematic verbal form

vocabulary items

Exponents (Vocabulary Items) (incomplete):

pers- ↔ <√lose, v°, Th> / ___ T°-[perf; 1sg/3]

pers- ↔ <√lose, v°, Th> / ___ Asp°-[participle]

[usage-index for certain environments]

perd- ↔ <√lose, v°> (elsewhere)

etc.

- Selection of the span <√, v°, Th> depending on criteria based on usage (frequency, sociolinguistic factors, ideolectal preferences, collocational conditions etc., depending on usage-data available)

3.2 It. *vai* vs. *andate*

- Forms of the Italian verb IR 'to go':

- Italian
- vado, vai, va, andiamo, andate, vanno* (present)
 - andavo, andavi, andava, andavamo, andavate, andavano* (imperfect)
 - andrò, andrai, andrà, andremo, andrete, andranno* (future)

	φ-features
	TAM-[-present]

- ➔ Non-categorical (or contextual) suppletion in the present indicative.
- ➔ The φ-features trigger root allomorphy.
- ➔ Two sources of verbs:
 Lat. *vādere* = **athematic** verb
 Lat. *ambitāre* (**andāre*) = **thematic** verb

3.2 It. *vai* vs. *andate*

- Forms of the Italian verb IR 'to go' (cf. Pomino & Remberger under review):

- Italian
- vado, vai, va, andiamo, andate, vanno* (presente)

Exponents (Vocabulary Items) (incomplete):

va- ↔ <√go, v°, Th> / ___ [pres, sg/3pl]

and- ↔ <√go, v°> (elsewhere)

-i ↔ [2sg]

-te ↔ [2pl]

etc.

(based on Ultra-Massuet 1991)

Principle of Maximal Expression (Julien 2015):
 "When two or more vocabulary items meet the conditions for insertion, the item leaving the smallest number of features in the terminal sequence unexpressed must apply."

3.3 Sp. *queremos* vs. *quisimos*

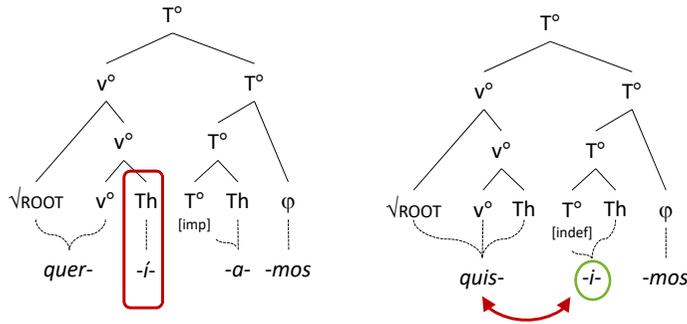
NB: With the exception of the 1st CC, the Spanish *indefinido* forms maintain phonological material of ThV of T° (not of v°):

Lat. v	v	Th	T/Asp	Th	φ
laud-		ā-	v-	i-	mus
mon-			u-	i-	mus
fēc-				i-	mus

- Forms of the verb QUERER 'to love' in Spanish:
 - quier-o, quier-e-s, quier-e, quier-e-mos...* (present)
 - quer-í-a, quer-í-a-s, quer-í-a, quer-í-a-mos, quer-í-a-is, quer-í-a-n* (imperfect)
 - quis-e, quis-i-ste, quis-o, quis-i-mos, quis-i-steis, quis-ie-ron* (*indefinido*)

Exponents (Vocabulary Items) (incomplete):

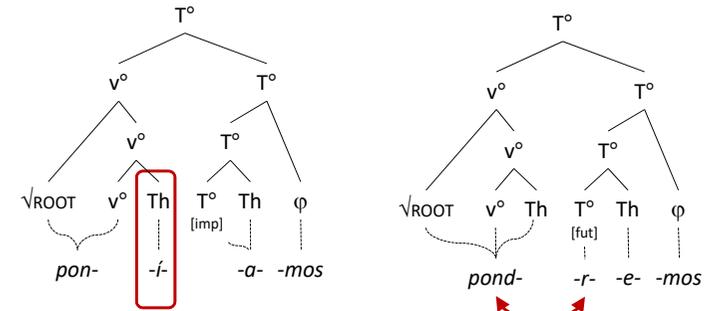
quis- ↔ <√LOVE, v°, Th> / ___ T°-[indef.]
quer- ↔ <√LOVE, v°> (*elsewhere*) etc.



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3.3 Sp. *Ponemos/poníamos* vs. *pondremos*

- The athematic forms of the future tense and the conditional can be analysed in similar vein:



Exponents (Vocabulary Items) (incomplete):

pond- ↔ <√PUT, v°, Th> / ___ T°-[future]
pon- ↔ <√PUT, v°> (*elsewhere*) etc.

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3.4 Fr. *arriver* vs. *vivre*

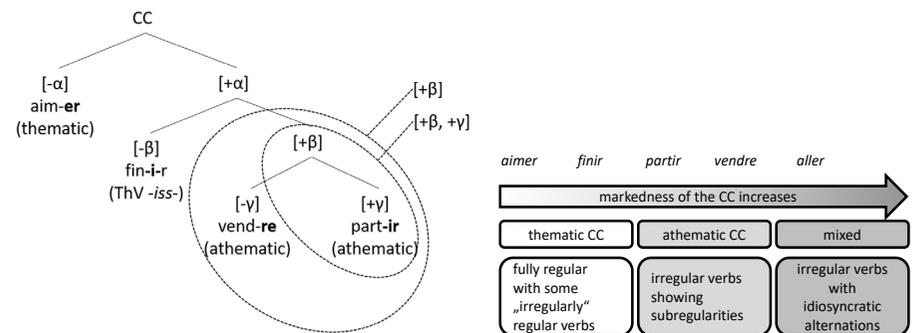
Based on the form of the infinitive, Modern French verbs are traditionally divided into three conjugation classes (CC):

1 st CC	2 nd CC	3 rd CC
<ul style="list-style-type: none"> ○ infinitive in <i>-er</i> [-eʁ], e.g. <i>arriver</i> [aʁive], <i>aimer</i> [ame] (exception: <i>aller</i>) ○ productive ○ 90% of all French verbs ○ Contains mainly regular verbs, i.e. verbs have one single stem for all tense forms. ○ Only a few verbs show stem allomorphy (e.g. <i>lever</i> [lɛ.veʁ] vs. <i>lève</i> [lɛv]) which count as phonologically predictable changes (cf. Meunier & Marslen-Wilson 2004). ➔ The unmarked CC 	<ul style="list-style-type: none"> ○ Infinitive in <i>-ir</i> [-ir]. ○ Verbs have a short and a long or extended stem: <i>fini-</i> [fini] vs. <i>fini-ss-</i> [finiːs] ○ Fully regular (according to Gertner 1973:19 even more regular than the 1st CC). ○ 2,8% of all French verbs ○ Is generally considered to be no longer productive. ➔ More marked than 1st CC 	<ul style="list-style-type: none"> ○ Infinitive endings: <i>viv-re</i> 'to live', <i>pein-dre</i> 'to paint', <i>voul-oir</i> 'want to', <i>dorm-ir</i> 'to sleep', <i>all-er</i> 'to go' ○ Many irregular verbs: <ol style="list-style-type: none"> stem_{irreg} + ending_{reg} e.g. <i>mourir</i> 'to die' whole form is affected from the irregularity (suppletion) e.g. <i>être</i> vs. <i>sommes</i> ○ Unproductive ➔ Marked CC

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3.4 Fr. *arriver* vs. *vivre*

- French *arriver* 'to arrive' vs. *vivre* 'to live': (a)thematic CCs
- Pomino & Remberger (accepted) distinguish for French between thematic (e.g. *arriver*, *finir* 'to finish'), athematic (e.g. *partir*) and mixed CCs (e.g. *aller* 'to go').



(cf. also Pomino & Remberger 2022a, where we still adopt a different feature geometry)

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Romance theme vowels:

Not just ornamental morphemes, but not syntactic elements either

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