

2 Aspect-triggered stem allomorphy in Greek

(14) Greek 1st conjugation verb *ḍéno* 'I tie'

a.	NONPAST.ACTIVE.IMPERFECTIVE		NONPAST.NONACTIVE.IMPERFECTIVE	
1sg	ḍén- o	1pl ḍén- ume	1sg ḍén- ome	1pl ḍen- ómaste
2	ḍén- is	2 ḍén- ete	2 ḍén- ese	2 ḍén- este
3	ḍén- i	3 ḍén- un	3 ḍén- ete	3 ḍén- onde
b.	NONPAST.ACTIVE.PERFECTIVE		NONPAST.NONACTIVE.PERFECTIVE	
1sg	ḍés- o	1pl ḍés- ume	1sg ḍe- θ-ó	1pl ḍe- θ-úme
2	ḍés- is	2 ḍés- ete	2 ḍe- θ-ís	2 ḍe- θ-íte
3	ḍés- i	3 ḍés- un	3 ḍe- θ-í	3 ḍe- θ-ún
c.	PAST.ACTIVE.IMPERFECTIVE		PAST.NONACTIVE.IMPERFECTIVE	
1sg	é-ḍen- a	1pl ḍén- ame	1sg ḍen- ómun	1pl ḍen- ómastan
2	é-ḍen- es	2 ḍén- ate	2 ḍen- ósun	2 ḍen- ósastan
3	é-ḍen- e	3 é-ḍen- an	3 ḍen- ótan	3 ḍén- ondan
d.	PAST.ACTIVE.PERFECTIVE		PAST.NONACTIVE.PERFECTIVE	
1sg	é-ḍes- a	1pl ḍés- ame	1sg ḍé- θ-ik-a	1pl ḍe- θ-ík-ame
2	é-ḍes- es	2 ḍés- ate	2 ḍé- θ-ik-es	2 ḍe- θ-ík-ate
3	é-ḍes- e	3 é-ḍes- an	3 ḍé- θ-ik-e	3 ḍé- θ-ík-an
e.	ACTIVE.IMPERFECTIVE.IMPERATIVE		NONACTIVE.IMPERFECTIVE.IMPERATIVE (formed periphrastically)	
2sg	ḍén- e	2pl ḍén- ete		
f.	ACTIVE.PERFECTIVE.IMPERATIVE		NONACTIVE.PERFECTIVE.IMPERATIVE	
2sg	ḍés- e	2pl ḍés- te	2sg ḍé- su	2pl ḍe- θ-íte

(15) Holton et al. 1997, Joseph and Smirniotopoulos 1993: Greek verbs have three stems:

- $\sqrt{\text{TIE}} \rightarrow \delta\text{es} / _ \text{Voice}[+\text{ACT}] \text{Asp}[+\text{PERF}]$
- $\sqrt{\text{TIE}} \rightarrow \delta\text{e} / _ \text{Voice}[-\text{ACT}] \text{Asp}[+\text{PERF}]$
- $\sqrt{\text{TIE}} \rightarrow \delta\text{en}$

(16) Rivero 1990 gives a syntactic decompositional account of these alternations, with an independent one-to-one mapping of morpheme to syntactic head, but Joseph and Smirniotopoulos 1993 argues that such an approach fails to account for the complex interaction between aspect, tense, voice, and the stem we have just observed, in particular the many patterns of allomorphy.

(17) Greek verb classes (Holton et al. 1997:156-158)

class	imperfective stem	active perfective stem	nonactive perfective stem + affix	meaning
1.	aku-	akus-	akus-t-	'hear'
2.	epenḍi-	epenḍis-	epenḍi-θ-	'invest'
3.	empne-	empnefs-	empnefs-t-	'inspire'
4.	vaf-	vaps-	vaf-t-	'paint'
5.	jatrev-	jatreps-	jatref-t-	'cure'
6.	ḍesmev-	ḍesmefs-	ḍesmef-t-	'bind'
7.	ḍiḍask-	ḍiḍaks-	ḍiḍax-t-	'teach'
8.	plaθ-	plas-	plas-t-	'knead'
9.	anaptis-	anaptiks-	anaptix-t-	'develop'
10.	eksetaz-	eksetas-	eksetas-t-	'examine'
11.	piraz-	piraks-	pirax-t-	'annoy'
12.	din-	dis-	di-θ-	'dress'
13.	klin-	klis-	klis-t-	'close'
14.	krin-	krin-	kri-θ-	'judge'
15.	enḍarin-	enḍarin-	enḍarin-θ-	'encourage'
16.	ksiren-	ksiran-	ksiran-θ-	'dry'
17.	trelen-	trelan-	trela-θ-	'make crazy'
18.	varen-	varin-	–	'become heavy'
19.	paḍen-	paḍ-	–	'suffer'
20.	xorten-	xortas-	–	'become satisfied'
21.	afksen-	afksis-	afksi-θ-	'increase'
22.	sokar-	sokaris-	sokaris-t-	'shock'
23.	apand-	apandis-	apandi-θ-	'answer'
24.	krem-	kremas-	kremas-t-	'hang'
25.	kal-	kales-	kales-t-	'call'
26.	epen-	epenes-	epene-θ-	'praise'
27.	kit-	kitaks-	kitax-t-	'look at'
28.	trav-	traviks-	travix-t-	'pull'
29.	ksexn-	ksexas-	ksexas-t-	'forget'

(18) Could the traditional segmentation reduce the inventory to two stems, and save Embick's locality hypothesis? (Philippaki-Warburton 1973 and many others)

- $\sqrt{\text{TIE}} \rightarrow \delta\text{e} / _ \text{(Voice?) Asp}[+\text{PERF}]$
- $\sqrt{\text{TIE}} \rightarrow \delta\text{en}$
- $\text{Asp}[+\text{PERF}] \rightarrow \text{s} / _ \text{Voice}[+\text{ACT}]$

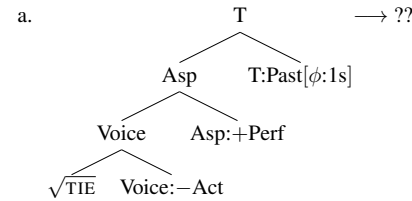
- (19) Selected irregular first conjugation verbs in Greek, principal parts

<i>imperfective stem</i>	<i>active perfective stem</i>	<i>nonactive perfective stem + affix</i>	<i>meaning</i>
apelavn-	apilas-	apela-θ-	'depart'
afin-	afis-	afe-θ-	'leave'
ðern-	ðir-	ðar-θ-	'beat'
ðin-	ðos-	ðo-θ-	'give'
eyir-	iyir-	eyer-θ-	'erect'
efevrisk-	efevr-	efevre-θ-	'invent'
fern-	fer-	fer-θ-	'bring'
fevy-	fiy-	fefx-θ-	'leave'
ksen-	ksan-	ksas-t-	'comb (wool)'
maθen-	maθ-	maθef-t-	'learn'
pern-	pir-	par-θ-	'take'
parex-	parix-	parsxe-θ-	'provide'
pin-	pi-	pio-θ-	'drink'
plen-	plin-	pli-θ-	'wash'
priz-	priks-	pris-t-	'swell'
proslamvan-	proslav-	proslif-θ-	'comprehend'
prosva-	prosva-	prosvli-θ-	'insult'
sern-	sir-	sir-θ-	'drag'
steln-	stil-	stal-θ-	'send'
soz-	sos-	so-θ-	'save'
tin-	tin-	ta-θ-	'tend'
θet-	θes-	te-θ-	'place'
vaz-	val-	val-θ-	'put'
vγaz-	vγal-	vγal-θ-	'take out'
vrisk-	vrik-	vre-θ-	'find'

- (20) V(-v)-Voice-Aspect-Tense

- (21)
- Voice: -ACT → θ / __ Asp: +PERF
 - Asp: +PERF → ik / θ __ Tns: Past
 - Tns: Past; φ: 1s → a Tns: Past; φ: 1p → ame
 - Tns: Past; φ: 2s → es Tns: Past; φ: 2p → ate
 - Tns: Past; φ: 3s → e Tns: Past; φ: 3p → an

- (22) Failed derivation 1: (Morphological structure, whether the result of V-to-T-movement or independent morphological phrase structure rules):



- b. Problem: By (8) (A1: 'Insertion proceeds from the inside-out'), Vocabulary Insertion must start at \sqrt{TIE} , selecting from among the three stems *den-*, *des-*, *de-*. But choosing the correct stem—the nonactive perfective *de-*—would require that we access the features of both Voice and Aspect, and thus contravenes (9) (A2: 'Contextual allomorphy requires linear adjacency').

- (23) Failed derivation 2: (Assuming only linear relations or a template)

- $\sqrt{TIE} \wedge [Voice: -Act] \wedge [Asp: +Perf] \wedge T: Past[\phi: 1s]$ → (Insert *de-*):
- $\delta e \wedge [Voice: -Act] \wedge [Asp: +Perf] \wedge T: Past[\phi: 1s]$ → (Insert *-θ-*):
- $\delta e \wedge \theta \wedge [Asp: +Perf] \wedge T: Past[\phi: 1s]$ → (Insert *-ik-*):
- $\delta e \wedge \theta \wedge ik \wedge T: Past[\phi: 1s]$ → (Insert *-a*):
- $\delta e \wedge \theta \wedge ik \wedge a$ (*ðeθika*)
- Problem: Condition on insertion of *de-* contravenes A2.

- (24) A local fix?:
- $\sqrt{TIE} \rightarrow \delta e / _ \theta$
-
- Won't work for ...

- (25) Greek athetic verbs (verbs that do not take -θ- in the nonactive)

<i>imperfective stem</i>	<i>active perfective stem</i>	<i>nonactive perfective stem + affix</i>	<i>meaning</i>
fθir-	fθir-	fθar-	'corrupt'
ke-	kaps-	ka-	'burn'
klev-	kleps-	klap-	'steal'
kov-	kops-	kop-	'cut'
pniy-	pniks-	pniy-	'strangle'
stref-	streps-	straf-	'turn'
trep-	treps-	trap-	'turn'
tref-	θreps-	traf-	'nourish'
vrex-	vreks-	vrax-	'wet'

(26) Greek athetic passive verb *kovo* ‘I cut’

a.	NONPAST.ACTIVE.IMPERFECTIVE			NONPAST.NONACTIVE.IMPERFECTIVE			
1sg	kóv- o	1pl	kóv- ume	1sg	kóv- ome	1pl	kov- ómaste
2	kóv- is	2	kóv- ete	2	kóv- ese	2	kóv- este
3	kóv- i	3	kóv- un	3	kóv- ete	3	kóv- onde
b.	NONPAST.ACTIVE.PERFECTIVE			NONPAST.NONACTIVE.PERFECTIVE			
1sg	kóps- o	1pl	kóps- ume	1sg	kop- ó	1pl	kop- íme
2	kóps- is	2	kóps- ete	2	kop- ís	2	kop- íte
3	kóps- i	3	kóps- un	3	kop- í	3	kop- ún
c.	PAST.ACTIVE.IMPERFECTIVE			PAST.NONACTIVE.IMPERFECTIVE			
1sg	é-kov- a	1pl	kóv- ame	1sg	kov- ómun	1pl	kov- ómastan
2	é-kov- es	2	kóv- ate	2	kov- ósun	2	kov- ósastan
3	é-kov- e	3	é-kov- an	3	kov- ótan	3	kóv- ondan
d.	PAST.ACTIVE.PERFECTIVE			PAST.NONACTIVE.PERFECTIVE			
1sg	é-kops- a	1pl	kóps- ame	1sg	kóp- ik-a	1pl	kop- ík-ame
2	é-kops- es	2	kóps- ate	2	kóp- ik-es	2	kop- ík-ate
3	é-kops- e	3	é-kops- an	3	kóp- ik-e	3	kóp- ik-an
e.	ACTIVE.IMPERFECTIVE.IMPERATIVE			NONACTIVE.IMPERFECTIVE.IMPERATIVE (formed periphrastically)			
2sg	kóv- e	2pl	kóv- ete				
f.	ACTIVE.PERFECTIVE.IMPERATIVE			NONACTIVE.PERFECTIVE.IMPERATIVE			
2sg	kóps- e	2pl	kóps- te	2sg	kóp- su	2pl	kop- íte

(27) Greek suppletive stem verbs

<i>imperfective stem</i>	<i>active perfective stem</i>	<i>nonactive perfective stem + affix</i>	<i>meaning</i>
le(γ)-	p-	lex-θ-/ipo-θ-	‘say’
tro(γ)-	fa(γ)-	fayo-θ-	‘eat’
vlep-	ð-	iðo-θ-	‘see’

(28) Greek suppletive stem verb *troo* ‘I eat’

a.	NONPAST.ACTIVE.IMPERFECTIVE			NONPAST.NONACTIVE.IMPERFECTIVE			
1sg	tró- o	1pl	tró- me	1sg	tróγ- ome	1pl	tróγ- ómaste
2	tró- s	2	tró- te	2	tróγ- ese	2	tróγ- este
3	tró- i	3	tró- n	3	tróγ- ete	3	tróγ- onde
b.	NONPAST.ACTIVE.PERFECTIVE			NONPAST.NONACTIVE.PERFECTIVE			
1sg	fá- o	1pl	fá- me	1sg	fayo- θ-ó	1pl	fayo- θ-íme
2	fá- s	2	fá- te	2	fayo- θ-ís	2	fayo- θ-íte
3	fá- i	3	fá- n	3	fayo- θ-í	3	fayo- θ-ún
c.	PAST.ACTIVE.IMPERFECTIVE			PAST.NONACTIVE.IMPERFECTIVE			
1sg	é-troy- a	1pl	tróγ- ame	1sg	troy- ómun	1pl	troy- ómastan
2	é-troy- es	2	tróγ- ate	2	troy- ósun	2	troy- ósastan
3	é-troy- e	3	é-troy- an	3	troy- ótan	3	tróγ- ondan
d.	PAST.ACTIVE.PERFECTIVE			PAST.NONACTIVE.PERFECTIVE			
1sg	é-fay- a	1pl	fáy- ame	1sg	fayó- θ-ik-a	1pl	fayo- θ-ík-ame
2	é-fay- es	2	fáy- ate	2	fayó- θ-ik-es	2	fayo- θ-ík-ate
3	é-fay- e	3	é-fay- an	3	fayó- θ-ik-e	3	fayó- θ-ik-an
e.	ACTIVE.IMPERFECTIVE.IMPERATIVE			NONACTIVE.IMPERFECTIVE.IMPERATIVE (formed periphrastically)			
2sg	tróγ- e	2pl	tróγ- ete				
f.	NONACTIVE.PERFECTIVE.IMPERATIVE			ACTIVE.PERFECTIVE.IMPERATIVE			
2sg	fá- e	2pl	fá- te	2sg	fayó- su	2pl	fayo- θ-íte

(29) Conclusion: Embick’s locality conditions are not correct

(30) So, anything goes?

(31) Comparatives, cross-linguistically (Bobaljik 2012)

<i>pattern</i>	<i>positive</i>	<i>comparative</i>	<i>superlative</i>	<i>meaning</i>
A A A	tall	tall-er	tall-est	‘psilos’
A B B	god	bed-re	bed-st	‘good’ (Dan.)
A B C	bon-us	mel-ior	opt-imus	‘good’ (Lat.)
*A A B	good	good-er	best	(unattested)
*A B A	good	bett-er	good-est	(unattested)

(32) German ablaut patterns

<i>pattern</i>	<i>infinitive</i>	<i>past participle</i>	<i>simple past, 1sg</i>	<i>meaning</i>
A A A	spiel-en	ge-spiel-t	spiel-te	‘play’
A B B	leid-en	ge-litt-en	litt	‘suffer’
A B C	stehl-en	ge-stohl-en	stahl	‘steal’
A A B	geb-en	ge-geb-en	gab	‘give’
*A B A	geb-en	ge-gob-en	geb-te	(unattested)

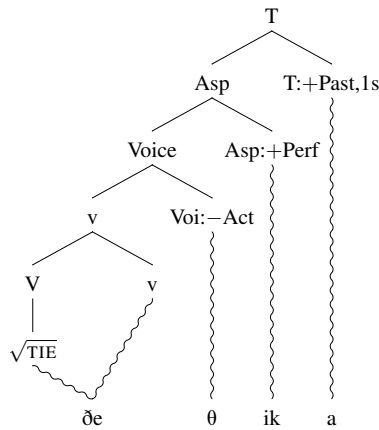
(33) Let T be an ordered n -tuple of terminal nodes $\langle t_1, \dots, t_n \rangle$ such that for all $t \in T, t = t_1$ or t is an element of the extended projection of t_1 .a. For all $k = 1 \dots n, t_k$ is a span. (Every node is a trivial span.)b. For any $n \geq 0$, if t_k is a span, then $\langle t_k, \dots, t_{k+n} \rangle$ is a span.(34) **Allomorphy Conditioning Hypothesis:**Allomorphy is conditioned only by an adjacent *span*.(35) **Spanning Hypothesis:** (Svenonius)A *span* and only a span can be targeted for Vocabulary Insertion.

(36) Spans in the verbal extended projection in Greek:

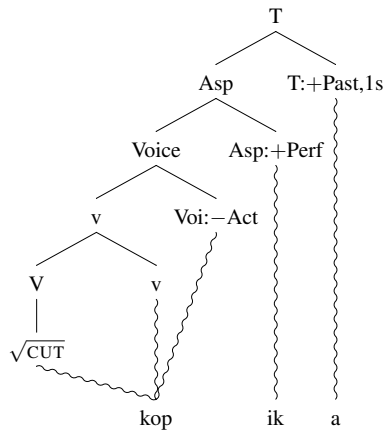
- <V, v> <v, Voice> <Voice, Asp> <Asp, T>
- <V, v, Voice> <v, Voice, Asp> <Voice, Asp, T>
- <V, v, Voice, Asp> <v, Voice, Asp, T>
- <V, v, Voice, Asp, T>

“[M]orphological exponents are always associated with spans, trivial or nontrivial ... A single morphological exponent (morpheme, for short) cannot spell out two heads (cannot “span” two heads) unless those heads are in a complement relation with each other. Thus, a single morpheme cannot spell out a head in an extended projection together with all or part of a specifier, nor can a single morpheme spell out a head in an extended projection together with all or part of an adjunct.” (Svenonius 2012:3)

(37) *ðe-θ-ik-a* ‘I was tied’



(38) *kóp-ik-a* ‘I was cut’



(39) Greek nonactive imperfective verbal desinences

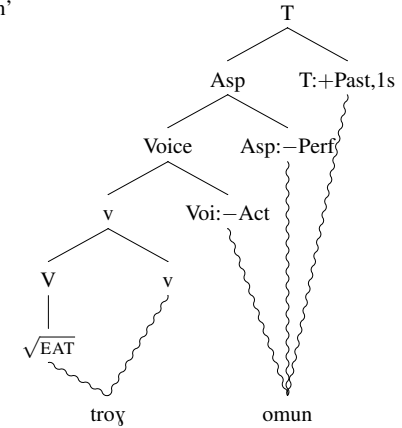
a. NONPAST.NONACTIVE.IMPERFECTIVE

- 1sg **-ome** 1pl **-ómaste**
- 2 **-ese** 2 **-este**
- 3 **-ete** 3 **-onde**

b. PAST.NONACTIVE.IMPERFECTIVE

- 1sg **-ómun** 1pl **-ómastan**
- 2 **-ósun** 2 **-ósastan**
- 3 **-ótan** 3 **-ondan**

(40) *troγ-ómun* ‘I was being eaten’



- (41) Cf.
- tense-triggered**
- augment partially sensitive to the identity of the stem:

NONPAST	PAST	PAST	
IMPERFECTIVE	IMPERFECTIVE	PERFECTIVE	
gráf-o	é-gráf-a	é-graps-a	'write' (regular)
thél-o	í-thél-a	thélis-a	'want'
ksér-o	í-kser-a	í-kser-a	'know'
pín-o	é-pin-a	í-pi-a	'drink'
vlép-o	é-vlep-a	í-ð-a	'see'
lé-o	é-leŷ-a	í-p-a	'say'
éx-o	í-x-a	í-x-a	'have' (vocalic augment)

- (42) Also the
- internal augment**
- verbs: (with prefixes
- amfi-*
- ,
- ana-*
- ,
- anti-*
- ,
- apo-*
- ,
- dia-*
- ,
- is-*
- ,
- ek-*
- ,
- en-*
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- ,
- iper-*
- ,
- ipo-*
- ,
- kako-*
- ,
- kalo-*
- ,
- ksana-*
- ,
- para-*
- ,
- poli-*
-)

NONPAST	PAST	PAST	
IMPERFECTIVE	IMPERFECTIVE	PERFECTIVE	
en-krin-o	en-é-krin-a	en-é-krin-a	'approve'
krín-o	é-krin-a	é-krin-a	'judge'
ípo-vál-o	íp-é-val-a	íp-é-val-a	'submit'
váz-o	é-vaz-a	é-val-a	'put'
ípo-fér-o	íp-é-fer-a	íp-é-fer-a	'suffer'
férn-o	é-fern-a	é-fer-a	'bring'
peri-plék-o	peri-é-plek-a	peri-é-pleks-a	'complicate'
plék-o	é-plek-a	é-pleks-a	'knit, braid'
ep-ana-lamván-o	ep-ana-lámvan-a	ep-an-é-lav-a	'repeat'
lamván-o	lámvan-a	é-lav-a	'receive'

3 Affixal negation in English

Affixal negation (see Zwicky and Pullum 1983) in English, *-n't*:

- (43) *don't* [dɒnt] and *won't* [wɒnt], which appear in place of the expected *[dɒnt] (< *do* /dʊ/ + *n't* /nt/) and *[wɒnt] (< *will* /wɪl/ + *n't* /nt/).²
- (44) English dialectal positive and negative forms of *be*, *have*, *do* (Wolfram 2004:292)

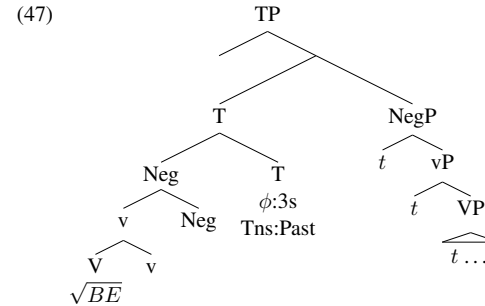
positive	negative
am	ain't
are	ain't
is	ain't
have	ain't
has	ain't
%did	ain't

- (45) a. I/you/he/she/it/we/y'all/they [wɒz] angry about it.
 b. I/you/he/she/it/we/y'all/they [wɒdn] angry about it.

- (46) East Anglia positive/negative
- be*
- (Trudgill 2004:145)

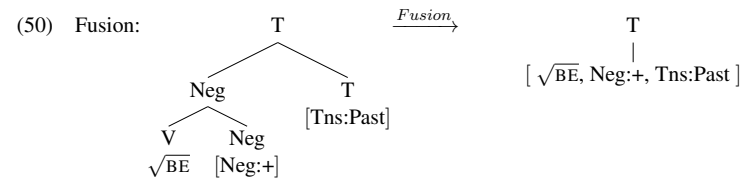
²Also the irregular forms *can't* [kænt], *shan't* [ʃænt], and *mustn't* [mʌsnt], as Zwicky and Pullum 1983 point out.

singular	plural
positive	
I wus	we wus
you wus	you wus
he/she/it wus	they wus
negative	
I weren't	we weren't
you weren't	you weren't
he/she/it weren't	they weren't

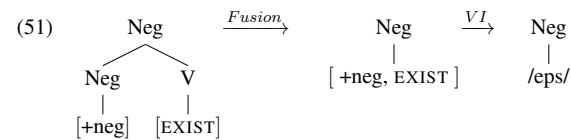


- (48) a. $\sqrt{BE} \rightarrow$ wuz / __ v+T:Past
 b. $\sqrt{BE} \rightarrow$ wudn / __ v+Neg+T:Past

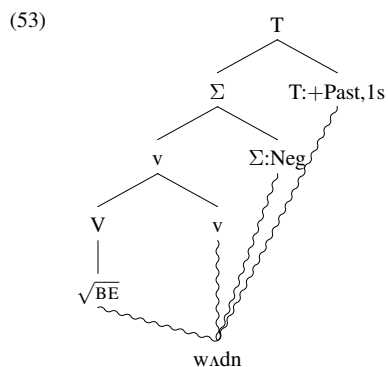
- (49) Cf. Turkish
 a. Ev-de karpuz var-dı.
house-in watermelon exist-PAST
 'There was watermelon in the house.'
 b. Ev-de karpuz yok-tu.
house-in watermelon not.exist-PAST
 'There wasn't watermelon in the house.'



Chung 2007:



- (52) [+neg, EXIST] \rightarrow /eps/



(54) Cf. Dutch stem augment *-er-* with the stem *kind* ‘child’ in plurals and elsewhere (e.g., *kind-er-lijk* ‘child-like’, *kind-er-actig* ‘childish’, *kind-er-kleding* ‘children’s clothing’); with the noun *kind* itself, it occurs only in plurals.:

- | | | |
|----|---------------------------------|--|
| a. | <i>kind</i> | <i>kind-er-en</i> |
| | <i>child</i> | <i>child-er-PL</i> ‘children’ |
| b. | <i>kind-je</i> | <i>kind-er-tje-s</i> |
| | <i>child-DIM</i> ‘little child’ | <i>child-er-DIM-PL</i> ‘little children’ |

4 Cypriot Greek negative future

Merchant and Pavlou 2017

(55) Cypriot Greek copula *ime* ‘be’

	present		past	
	sg	pl	sg	pl
1	<i>ime</i>	<i>imasten</i>	<i>imun</i>	<i>imastan</i>
2	<i>ise</i>	<i>isaste</i>	<i>isun</i>	<i>isastan</i>
3	<i>en</i>		<i>itan/ito/itun</i> ³	

- (56) a. *Ta mora en arosta.*
the child.NEUT.pl be.NONPAST.3 sick.NEUT.pl
 ‘The children are sick.’
- b. *Ta mora en kali mathites.*
the child.NEUT.pl be.NONPAST.3 good.MASC.pl pupils.MASC.pl
 ‘The children are good students.’
- c. *Ta mora en sto dhomatio.*
the child.NEUT.pl be.NONPAST.3 in.the room
 ‘The children are in the room.’

(57) *En na pao.*
be.NONPAST.3 na go.PERF.NONPAST.1sg
 ‘I will go.’

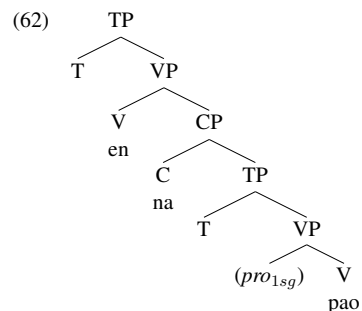
(58) *Thelo na pao.*
want.IMPERF.NONPAST.1sg na go.PERF.NONPAST.1sg

‘I want to go.’

(59) *Thelo na ton dho.*
want.IMPERF.NONPAST.1sg na him see.PERF.NONPAST.1sg
 ‘I want to see him.’ (?;230)

(60) *Thelo na men pais.*
want.1sg na NEG.SUBJ go.PERF.NONPAST.2sg
 ‘I want for you not to go.’

(61) *Akusa oti en na men pais.*
hear.PERF.PAST.1sg that be.NONPAST.3 na NEG.SUBJ go.PERF.NONPAST.2sg
 ‘I heard that you will not go.’



(63) *Itan na pao ekso.*
be.PAST.3 na go.PERF.NONPAST.1sg outside
 ‘I was going to go out.’

(64) a. *En na pao che na kathariso.*
be.NONPAST.3 na go.PERF.NONPAST.1sg and na clean.PERF.NONPAST.1sg
 ‘I will go and clean.’

b. *En na mairepsis i na katharisis?*
be.NONPAST.3 na cook.PERF.NONPAST.2sg or na clean.PERF.NONPAST.2sg
 ‘Are you cooking or cleaning?’

c. *En na mairepsis oksa na katharisis?*
be.NONPAST.3 na cook.PERF.NONPAST.2sg or na clean.PERF.NONPAST.2sg
 ‘Which of the two are you doing: cooking, or cleaning?’
 (Or: ‘Are you cooking, or are you cleaning?’)

4.1 Sentential negator *en* and the periphrastic future

Sentential negation in Cypriot Greek:

(65) *En pieno.*
NEG go.IMPERF.NONPAST.1sg
 ‘I am not going.’

As expected, this negator can co-occur with the copula, both in the present and past:

- (66) a. Ta mora en en arosta.
the children NEG be.NONPAST.3 sick
 'The children are not sick.'
 b. Ta mora en itan arosta.
the children NEG be.PAST.3 sick
 'The children were not sick.'

The expectation, then, is that the negator *en* and the copula with *na* in the periphrastic future should be able to combine. And this is true, when the copula is in the past:

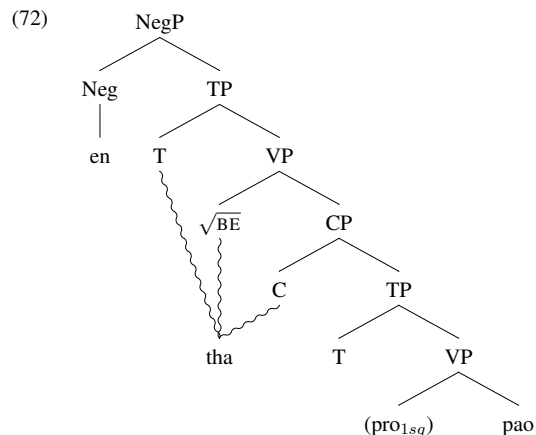
- (67) En itan na pao.
 NEG *be.PAST.3 na go.PERF.NONPAST.1sg*
 'I wasn't going to go.'

It therefore comes as a surprise that sentential negation and the nonpast copula *en* in the periphrastic future cannot co-occur:

- (68) *En en na pao.
 NEG *be.NONPAST.3 na go.PERF.NONPAST.1sg*
 (Intended: 'I will not go.')
- (69) *Tha pao.
tha go.PERF.NONPAST.1sg
 ('I will go.')

The puzzle:

- (70) En tha pao.
 NEG *tha go.PERF.NONPAST.1sg*
 'I will not go.'
- (71) a. $\sqrt{\text{BE}} \leftrightarrow \text{en} / \text{T}[\text{pres}] \text{ __}$
 b. $\text{C} \leftrightarrow \text{na}$
 c. $\text{T}[\text{pres}] \sqrt{\text{BE}} \text{C} \leftrightarrow \text{tha} / \text{NEG} \text{ __}$



CP ellipsis:

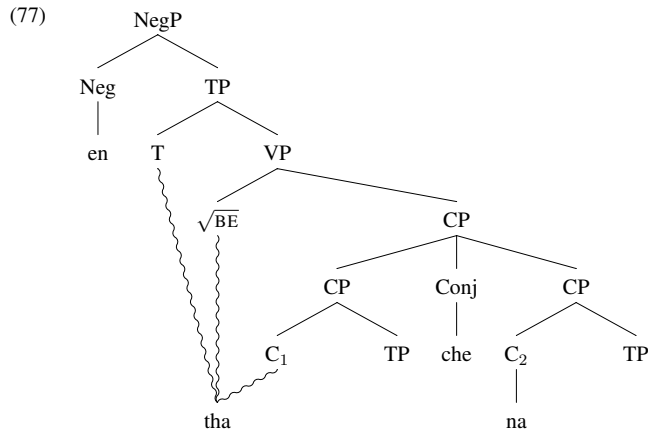
- (73) a. O Yannis itan na pai ekso extes, ala i
the Giannis.NOM be.PAST.3s na go.PERF.NONPAST.3s out yesterday but the
Maria en itan.
Maria.NOM NEG be.PAST.3s
 'Giannis was going to go out yesterday, but Maria wasn't.' (=going to go out yesterday)
 b. O Yannis en na pai ekso avrio, ala i
the Giannis.NOM be.NONPAST.3s na go.PERF.NONPAST.3s out tomorrow but the
Maria en tha pai.
Maria.NOM NEG FUT go.PERF.NONPAST.3
 'Giannis will go out tomorrow, but Maria will not.'
 c. *O Yannis en na pai ekso avrio, ala i
the Giannis.NOM be.NONPAST.3s na go.PERF.NONPAST.3s out tomorrow but the
Maria en tha.
Maria.NOM NEG FUT
 (Intended: 'Giannis will go out tomorrow, but Maria will not.')

Extraction possible, therefore it's ellipsis, not Null Complement Anaphora:

- (74) To aftokinito itan na plini o Kostas, che tin motora itan i Maria
the car was na wash.3s the Kostas.NOM and the motorbike.ACC was the Maria.NOM
(na plini).
na wash.3s
 'The car, Kostas was going to wash, and the motorbike, Maria was (going to wash).'

Coordination adjacency asymmetry:

- (75) Itan (che) na mairepso sup^ha che na kathariso to
be.PAST.3s both na cook.PERF.NONPAST.1sg soup and na clean.PERF.NONPAST.1sg the
domatio avrio.
room tomorrow
 'I was (going) (both) to cook soup and to clean the room tomorrow.'
- (76) a. En tha mairepso che na kathariso avrio.
 NEG *tha cook.PERF.NONPAST.1sg and na clean.PERF.NONPAST.1sg tomorrow*
 'I will not cook and clean tomorrow.'
 b. *En tha mairepso che tha kathariso avrio.
 NEG *tha cook.PERF.NONPAST.1sg and tha clean.PERF.NONPAST.1sg tomorrow*
 ('I will not cook and clean tomorrow.')



A problem for our definition above:

- (78) Let T be an ordered n -tuple of terminal nodes $\langle t_1, \dots, t_n \rangle$ such that for all $t \in T$, $t = t_1$ or t is an element of the extended projection of t_1 .
- For all $k = 1 \dots n$, t_k is a span. (Every node is a trivial span.)
 - For any $n > 0$, if t_k is a span, then $\langle t_k, \dots, t_{k+n} \rangle$ is a span.
- (79) **Spanning Insertion Hypothesis:** A *span* and only a span can be targeted for Vocabulary Insertion.

A fix?:

- (80) Let T_D be the unique totally ordered n -tuple of terminal nodes $\langle t_1, \dots, t_n \rangle$ over the elements in a derivation D that satisfy the Linearization statements generated by D .⁴
- For all $k = 1 \dots n$, t_k is a span. (Every node is a trivial span.)
 - For any $n > 0$, if t_k is a span, then $\langle t_k, \dots, t_{k+n} \rangle$ is a span.

A better fix:

- (81) Let $T_{\prec\prec}$ be the unique set of ordered pairs of terminal nodes $\langle t_i, t_j \rangle$ over the elements in a derivation D such that t_i immediately precedes t_j . Let T_S be the set of all pairs of nodes in D $\langle t_i, t_j \rangle$ such that t_i selects t_j .
- For all $k = 1 \dots n$, t_k is a span. (Every node is a trivial span.)
 - For any $n > 0$, $\langle t_1, \dots, t_n \rangle$ is a span iff for all $1 \leq i \leq n$, $\langle t_i, t_{i+1} \rangle \in T_{\prec\prec} \cap T_S$

A correct prediction:

- (82) a. *En tha ute mairepso sup^ha ute na kathariso to
NEG *tha neither cook*.PERF.NONPAST.1sg *soup nor na clean*.PERF.NONPAST.1sg *the*
dhomatio avrio.
room tomorrow
- b. *En ute tha mairepso sup^ha ute na kathariso to
NEG *neither tha cook*.PERF.NONPAST.1sg *soup nor na clean*.PERF.NONPAST.1sg *the*
dhomatio avrio.
room tomorrow
- (83) En en ute na mairepso sup^ha ute na
NEG *be*.NONPAST.3 *neither na cook*.PERF.NONPAST.1sg *soup nor na*
kathariso to dhomatio avrio.
clean.PERF.NONPAST.1sg *the room tomorrow*
'I will neither cook soup nor clean the room tomorrow.'

5 Conclusions

- (84) Words have internal structure; allomorphy, suppletion, and portmaneuism are sensitive to this structure
- (85) Allomorphs can be conditioned by a contiguous set of feature bundles, within a word
- (86) Allomorph conditioning is not limited to linear adjacency (contra Embick)

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⁴On some theories, such an ordered tuple is the output of Linearization; on others, it can be generated by the transitive closure over the Linearized pairs. Arregi and Nevins 2012 argue that the output of Linearization maintains hierarchical information as well.

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