

Cycles, the Lexicon, and Constraints

Palestinian Arabic - First consider verbs without objects:

<i>subject</i>	<i>'study'</i>	<i>'understand'</i>
2sg. masc.	da.rás+t	fhím+t
2sg. fem.	da.rás.+ti	fhím.+ti
3sg. masc.	dá.ras	fí.him
3sg. fem.	dá.ra.s+at	fíh.m+at
1pl.	da.rás.+na	fhím.+na
2pl.	da.rás.+tu	fhím.+tu
3pl.	dá.ra.s+u	fíh.m+u

(1) **Stress Rule:**

(2) **Syncope:**

Q: What is the ordering?

(3)	/fihim/	/fihim-na/	/fihim-u/
Stress			
Syncope			
	[]	[]	[]

Q: How does the story change when we consider verbs with objects?

Object	<i>'he understood X'</i>	<i>'she understood X'</i>	<i>'you (m) understood X'</i>
1sg.	fi.hím.+ni	fih.m+át.+ni	fhím+t.+ni
2sg. masc.	fíh.m+ak	fíh.m+a.t+ak	fhím+t.+ak
2sg. fem.	fíh.m+ik	fíh.m+a.t+ik	fhím+t.+ik
3sg. masc.	fíh.m+u	fíh.m+a.t+u	fhím+t.+u
3sg. fem.	fi.hím.+ha	fih.m+át.+ha	fhím+t.+ha
1pl.	fi.hím.+na	fih.m+át.+na	fhím+t.+na
2pl.	fi.hím.+kum	fih.m+át.+kum	fhím+t.+kum
3pl.	fi.hím.+hum	fih.m+át.+hum	fhím+t.+hum

Derive these:

[fihim+Ø]	[fihim+na]	[[fihim+Ø]+na]	[[fihim+Ø]+ak]
V	he V	we	V
	he	us	he
			you

[[fihim+at]+ni]	[[fihim+at]+ak]	[[fihim+t]+ni]
V	she me	V
		she you
		V
		you me

- The forms with 'accusative' suffixes display what's called **trans-derivational identity** – stress placement in one derivation influences syncope in another.

Q: How does this account explain the forms below?

(4) *Verb plus accusative suffix*

a.	/fihim/	fihim		'he understood'
b.i	/fihim-ak/	fíh-m-ak		'he understood you m.'
b.ii	/fihim-ik/	fíh-m-ik		'he understood you f.'
b.iii	/fihim-u/	fíh-m-u		'he understood him'
c.i	/fihim-ni/	fíhím-ni	*fhím-ni	'he understood me'
c.ii	/fihim-ha/	fíhím-ha	*fhím-ka	'he understood her'
c.iii	/fihim-na/	fíhím-na	*fhím-na	'he understood us'

- In this case i-Syncope 'under-applies' to forms that have a morphological base form in which [i] is stressed. This shows up in possessives as well:

(5) a.	/birak/	bírak		'pools'
b.	/birak-u/	bírak-u		'his pools'
c.	/birak-na/	bírák-na	*brák-na	'our pools'

Q: The apparent **underapplication** comes from what?

Input	[fihim-na] _{Subj}	[fihim-u]	Subj	[[fihim]na] _{Acc}	[[fihim]u] _{Acc}
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Cycle1

Stress

Cycle2

Stress

Postcyclic

i-Syncope

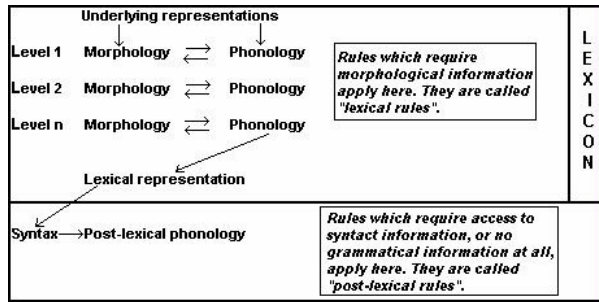
Destressing

Output

- In this case underapplication arises from linearly ordered rules that have no access to the underlying representations but only to the representation present at the point in the derivation where they apply.

Lexical Phonology (see Kiparsky for more)

- The idea is that there are several 'rounds' of phonology:



Lexical rules ...

- Apply only within words.
- Are prone to exceptions.
- Use morphological information.
- Must be structure-preserving.
- Will not be blocked by pauses.
- Apply first.

Post-lexical rules ...

- Apply within words or across word boundaries.
- Do not have exceptions.
- Use only syntactic information (or none)
- Are not necessarily structure-preserving.
- Can be blocked by pauses.
- Apply later.

Halle and Mohanan propose four levels of morphology in the lexicon:
 Level 1: Class 1 derivation, irregular inflection
 Level 2: Class 2 derivation
 Level 3: Compounding
 Level 4: Regular inflection

Level 1	Level 2
Affixes include: <i>-ate, -ion, -ity, -ic, sub-, de-, in-</i>	Affixes include: <i>-ly, -ful, -some, -ness, re-, un-, non-</i>
Affixation causes stress shift: <i>photograph/photographic</i>	Affixation does not affect stress: <i>revenge/revengeful</i>
Trisyllabic shortening occurs: <i>divine/divinity</i>	No trisyllabic shortening occurs: <i>leader/leaderless</i>
Nasal assimilation occurs: <i>in + legal -> illegal</i>	Nasal assimilation is blocked: <i>un + ladylike -> unladylike, not *ulladylike</i>
Affixes may attach to stems: <i>re-mit, de-duce</i>	Affixes attach only to words: <i>re-open, de-regulate</i>
Affixation is less productive and more exception ridden.	Affixation is more productive and less exception ridden.

Icelandic (from Kiparsky)

u-epenthesis

dag+ur	'day <i>m.nom.sg.</i> '	bæ+r	'farm <i>m.nom.sg.</i> '
tek+ur	'take <i>2/3sg.pres.ind.</i> '	næ+r(ð)	'reach <i>2/3sg.pres.ind.</i> '

j-deletion

bylj+ar	'snowstorm <i>gen.sg.</i> '	krefj+i	'request <i>2pl.</i> '
bylj+ir	'snowstorm <i>nom.pl.</i> '	krefj+a	'request <i>3pl.</i> '
bylj+i	'snowstorm <i>acc.pl.</i> '	krefj+um	'request <i>1pl.</i> '
bylj+a	'snowstorm <i>dat.pl.</i> '	kref	'request <i>1sg.</i> '
bylj+um	'snowstorm <i>dat.pl.</i> '	kref+ur	'request <i>2/3sg.</i> '
byl	'snowstorm <i>acc.sg.</i> '		
byl+s	'snowstorm <i>gen.sg.</i> '		
byl+ur	'snowstrom <i>nom.sg.</i> '		

Q: How are these two rules ordered?

Q: How does the following rule fit in?

u-umlaut

/harð+um/	hörðum	'hard <i>dat.pl.</i> '
/kalla+um/	köllum	'call <i>1sg.</i> '
/saga+ur/	sögur	'sagas <i>nom.pl.</i> '
/dag+r/	dagur	'day <i>nom.sg.</i> '

- A syncope rule deletes certain unstressed vowels before CV where C is {l, r, n, ð s}. – It applies before case and derivational endings but not before the enclitics *-inn* & *-ið* are attached.

hamar	'hammer <i>nom.sg.</i> '	akur	'acne <i>nom.sg.</i> '
hamr+i	'hammer <i>dat.sg.</i> '	akr+i	'acne <i>dat.sg.</i> '
hamr+a	'to hammer'		
hamar#inn	'the hammer <i>nom.sg.</i> '	akur#inn	'the acne <i>nom.sg.</i> '
		ökr+um	'acne <i>dat.pl.</i> '
fóður	'lining <i>nom.sg.</i> '	dag+ur	'day <i>nom.sg.</i> '
fóðr+i	'lining <i>dat.sg.</i> '	dag+r+i	'day <i>dat.sg.</i> '
fóðr+a	'to line'		
fóður#ið	'the lining <i>nom.sg.</i> '	dag+ur#inn	'the day <i>nom.sg.</i> '

Q: How can we resolve the fact that we have to order u-umlaut before syncope to counterbleed forms like /bagg+ul+i/ → [bögg+l+i] but we need the feeding order for: /alin+um/ → [öln+um]?