Degrees of dominance: Lexical accent typology as argument for gradient representations

Eva Zimmermann, Razieh Shojaei, Ekaterina Medvedeva, Prithivi Pattanayak

Universität Leipzig

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Main Goals

- present results of a **representative empirical survey** of 32 lexical accent languages from 13 language families and 3 isolates that transcends existing empirical evidence:
  - across languages
  - within one language (=a full picture including 'exceptions').

  (extending the studies in, for example, Revithiadou 1999; Alderete 2001; Vaxman 2016; Yates 2017, or Bogomolets 2020)

- show that lexical accent competition is best analysed with **gradient phonological representations** that naturally capture **degrees of accentual dominance** and avoid undergeneration problems alternative accounts face

Plan

1. A Typology of Lexical Accent
1.1 Methodology
1.2 Results

2. Theoretical Proposal: Gradient Representations
2.1 Case study: Ukrainian

3. Conclusion

4. Appendix

Lexical Accent Competition

(1) Colville (Salishan; Mattina, 1973)

(ul. accent surfaces= V , ul. accent not realized= V , surface accent= V)

a. [ʕ **á** ʾcəntiʔ] 'Look at it!' (pl.) (M:72)
ʕaʾc-n-t-iʔ ➙ No ul. accent: Initial default

b. [x̣stw **í** lx] 'He gets better' (M:28)
x̣as-t-w í lx ➙ One ul. accent: surfaces

c. [x^w **ú** kəntx^w] 'You pull it out' (M:27)
x^w ú k-n-t- í x^w ➙ Multiple ul. accents: LMost/root 'wins'

d. [x^wkn **ú** ntx^w] 'You managed to pull it out' (M:27)
x^w ú k-n ú -n-t- í x^w ➙ Same root 'loses' against different affix

- morphemes can be **dominant** and override the expected winner of an **accentual** competition

A Typology of Lexical Accent

A database of lexical accent competition (in progress)

Our database

- **theory-neutral** collection of accent competition patterns from descriptive sources
- includes languages with **competition of underlying prominence** = abstracting away from whether this is stress/tone/'pitch accent'

Our methodology

- baseline assumption: binary distinction into **non-accentual** and **accentual** morpheme classes
- a single parameter **LMost/RMost** decides the accentual morphemes competition (Dec.W.Mc); this **may conflict** with **default** accent
- a hierarchy of **accentual morpheme classes** is assumed only if the two simple assumptions are insufficient

The methodology: Finding morpheme classes in a toy example: Hypothesis A

(=Underlying accentedness already determined from combination with accent-less roots/suffixes)

(2)

a. kul-s **ú** – [kuls **ú**] → Hypothesis: **RMost**

b. kul-p **á** -s **ú** – [kulp **á** su] → **DomAfx**: pá > sú

c. kul-t **ó** -p **á** – [kult **ó** pa] → **ExtraDomAfx**: tó > pá

(3) Resulting hierarchy of MClasses

1		2		3		4 (unacc)
tó	>	pá	>	sú	>	kul
A1	>	A2	>	A3	>	R1

(4) Database parameters

N°.Acc.M.Classes:	4
N°.M.Classes	1 root, 3 affix
Dec.within.M.class	RMost

The methodology: Finding morpheme classes in a toy example: Hypothesis B

(5)

a. kul-s ú – [kuls **ú**] ➙ Hypothesis: **LMost**

b. kul-p á -s ú – [kulp **á** su] ➙ LMost

c. kul-t ó -p á – [kult **ó** pa] ➙ LMost

(6) Resulting hierarchy of MClasses

1		2 (unacc)
tó, pá, sú	>	kul
A1	>	R1

(7) Database parameters

N°.Acc.M.Classes:	2
N°.M.Classes	1 root, 1 affix
Dec.within.M.class	LMost

The methodology: Finding morpheme classes

- we always went for the hypothesis with the **fewest morpheme classes** (i.e. Hypothesis B in our toy example)
- the result of applying this algorithm of MClasses is often in **contrast to the surface** generalization

  (e.g. Spokane (Bates and Carlsen, 1989; Carlsen, 1989) is usually described as having a hierarchy of 5 (=3 suffix and 2 root) morpheme classes but ended up having only 2 in our database)

Some expectations: Predictions of classical theories

		Lexical Phonology (e.g. Halle and Mohanan, 1985)	Head Dominance (Revithiadou, 1999)	Anti-faithfulness (Alderete, 2001)
A. **Af≤3**	Affixes can be ± accentual or 'dominant' accentual.	Restr.A	Restr.A	Restr.A
B. **Rt≤2**	Roots can be ± accentual.	Restr.B		Restr.B
C. **HdWin**	The accentual property of the morphological head always wins over accentual patterns of non-heads.		Restr.C	

Evaluating the theoretical predictions

	Af≤3	Rt≤2	HdWin
Bulgarian	✓	✓	✓
Colville	✓	✓	✓
Greek (Modern)	✓	✓	✓
Hittite	✓	✓	✓
Shuswap	✓	✓	✓
Thompson River Salish	✓	✓	✓
Hidatsa	✓	✓	✓
A'ingae	✓	✓	☹
Choguita Rarámuri (Tarahumara)	✓	☹	☹
Nez Perce	✓	✓	☹
Parabel Selkup	✓	✓	☹
Vedic Sanskrit	✓	☹	☹
Lithuanian (N, infl)	☹	✓	☹
Arapaho	☹	✓	☹
Russian (N,infl)	☹	☹	☹
Sahaptin (Northwest) Yakima	✓	☹	☹
Coastal Bizkaian Basque	✓	☹	✓
Cupeno A	☹	✓	✓
Moses Columbian Salish	☹	☹	✓
Japanese	☹	☹	☹
Chamorro	☹	☹	☹
Ukrainian (N, infl)	☹	☹	☹
Problematic	8	9	12

The most important empirical findings

A. there are **degrees of dominance** (independent of status as root, affix, or head), that in many languages lead to co-dependencies between morphemes

B. there are **no patterns where the 'Outermost morpheme' necessarily decides the competition**; either LMost or RMost parameter determines the surface accent if more than one accented morpheme is present

A. Degrees of dominance

- 22 languages require more than 2 classes and 12 require more than 3
  → some mechanism of (degrees of) dominance is necessary

				Nr	Dec	Def	
1.	Bulgarian	bul	Indo-European	3	LMost	Penult	Dominance
2.	Hittite	hit	Indo-European	3	LMost	LMost	
3.	M. Greek	ell	Indo-European	3	LMost	Antepenult	
4.	Nez Perce	nez	Sahaptian	3	LMost	Penult	
5.	Colville	oka	Salishan	3	LMost	LMost	
6.	Shuswap	shs	Salishan	3	LMost	n.d.	
7.	Parabel Selkup	sel	Uralic	3	LMost	n.d.	
8.	A'ingae	con	-	3	LMost	Penult	
9.	Thompson River Salish	thp	Salishan	3	LMost	RMost	
10.	Hidatsa	hid	Siouan	3	LMost	n.d.	
11.	Chamorro	chw	Austronesian	3	RMost	RMost	
12.	Choguita Rarámuri	tar	Uto-Aztecan	4	LMost	Postin	Degrees of D.
13.	Sahaptin	yak	Sahaptian	4	RMost	n.d.	
14.	Russian (N, infl)	rus	Indo-European	4	LMost	LMost	
15.	Vedic Sanskrit	san	Indo-European	4	LMost	LMost	
16.	Arapaho	arp	Algic	4	RMost	Penult	
17.	Japanese	jpn	Japonic	4	RMost	Antepenult	
18.	Cupeño A	cup	Uto-Aztecan	4	RMost	LMost	
19.	Coastal Bizkaian Basque	eus	-	4	LMost	RMost	
20.	Moses Columbian Salish	thp	Salishan	5	RMost	RMost	
21.	Lithuanian (N, infl)	lit	Indo-European	6	LMost	LMost	
22.	Ukrainian (N, infl)	ukr	Indo-European	7	LMost	LMost	

A. Degrees of dominance: Co-dependencies between morphemes

- Accent competition in Ukrainian
  - LMost wins

	a. sg.acc	b. sg.nom	c. pl.dat
$\sqrt{foot}$ (R_1)	n ó ɦ-u	noɦ-á	noɦ-ám
$\sqrt{head}$ (R_2)	ɦ ó lov-u	ɦolov-á	ɦólov-am

(Pugh and Press, 1999)

(V=underlying accent; V́ =affix accent surfaces, V́ =stem accent surfaces)

A. Degrees of dominance: Co-dependencies between morphemes

- Accent competition in Ukrainian
  - competition: strongest underlying accent wins
  - -a >> R_1/R_2 >> -u

	a. sg.acc	b. sg.nom	c. pl.dat
$\sqrt{foot}$ (R_1)	n ó ɦ-u	noɦ- á	noɦ-ám
$\sqrt{head}$ (R_2)	ɦ ó lov-u	ɦolov- á	ɦólov-am

(Pugh and Press, 1999)

(V=underlying accent; V́ =affix accent surfaces, V́ =stem accent surfaces)

A. Degrees of dominance: Co-dependencies between morphemes

- Accent competition in Ukrainian
  - degrees of dominance
  - -a >>R_2 >> -am >> R_1 >> -u

	a. sg.acc	b. sg.nom	c. pl.dat
$\sqrt{foot}$ (R_1)	n ó ɦ-u	noɦ- á	noɦ- á m
$\sqrt{head}$ (R_2)	ɦ ó lov-u	ɦolov- á	ɦ ó lov-am

(Pugh and Press, 1999)

(V=underlying accent; V́ =affix accent surfaces, V́ =stem accent surfaces)

B. No Outermostness: Morpheme dominance instead of cyclicity

- Nez Perce (Sahaptian; Crook, 1999)

  (ul. accent surfaces as main accent= V , ul. accent not realized= V , surface accent= V)

  a. [[hìp] síix] 'We eat' (Cr:101)
  hip - síix → One ul. accent: surfaces

  b. [[cikáa]cìix] 'We fear' (Cr:101)
  cháaw - cíix → multiple ul. accents: LMost surfaces

  c. ['ìmemé [[hìnewi]sìx]] 'You/they are trying' (Cr:133)
  'imemée - hínewii - síix → multiple ul. accents: LMost surfaces

  d. [pè[[wỳik] úu]]se 'he is crossing towards her' (Cr:174)
  pée - wéeyik - úu - see → multiple ul. accents: DOM surfaces

Theoretical Proposal: Gradient Representations

Dominance: Alternatives vs. GSR

- various proposals allow (in principle) gradient degrees of accented-ness

  (e.g. Halle and Vergnaud (1987); Idsardi (1991); Inkelas (2015) or Vaxman (2016))

- → our proposal: **OT-implementation**
  - that is fully parallel
  - allows all phonological elements to have a gradient presence
  - predicts all accentual behaviors from a single phonological grammar

GSR: Background assumption

- phonological elements can have different underlying **activities** that result in **gradient constraint violations**
  (Smolensky and Goldrick, 2016; Rosen, 2016)

→ differences between 'accentual morpheme classes' correspond to **activity differences** in underlying representations (of tones, feet, moras,...)

→ one simple mechanism: the **most active one wins**

- harmony evaluation based on Harmonic Grammar where weighted constraints predict threshold effects
  (Legendre et al., 1990; Potts et al., 2010)

Accent competition in GSR

- deletion of the more active element is more costly: **Max** >> **LMost**

		MAX	LMOST	
	1.0 2.0 x^{w}úk-nú	2	1	
☞	a. 2.0 x^{w}úk-nú	-1	-1	-3
	b. 1.0 x^{w}úk-nú	-2		-4

The paradigm: Feminine, 1st Declination class (Butska, 2002)

		$\sqrt{article}$	$\sqrt{height}$	$\sqrt{foot}$	$\sqrt{head}$	$\sqrt{base}$
sg	nom	statt^{j}- á	vysot- á	noɦ- á	ɦolov- á	osnóv -a
	gen	statt^{j}- í	vysot- ý	noɦ- ý	ɦolov- ý	osnóv -y
	dat	statt^{j}- í	vysot^{j}- í	noz^{j}- í	ɦolov^{j}- í	osnóv^{j} -i
	acc	statt^{j}- ú	vysot- ú	nóɦ -u	ɦólov -u	osnóv -u
	inst	statt^{j}- éju	vysot- óju	noɦ- óju	ɦolov- óju	osnóv -oju
	loc	statt^{j}- í	vysot^{j}- í	noz^{j}- í	ɦolov^{j}- í	osnóv^{j} -i
	voc	—	vysót -o	nóɦ -o	ɦólov -o	osnóv -o
pl	nom	statt^{j}- í	vysót -y	nóɦ -y	ɦólov -y	osnóv -y
	gen	statt^{j}- éj	vysót-ø	n^{j}íɦ -ø	ɦol^{j}ív -ø	osnóv -ø
	dat	statt^{j}- ám	vysót -am	noɦ- ám	ɦólov -am	osnóv -am
	acc	statt^{j}- í	vysót -y	nóɦ -y	ɦólov -y	osnóv -y
	inst	statt^{j}- ámi	vysót -amy	noɦ- ámy	ɦólov -amy	osnóv -amy
	loc	statt^{j}- áx	vysót -ax	noɦ- áx	ɦólov -ax	osnóv -ax
	voc	—	vysót -y	nóɦ -y	ɦólov -y	osnóv -y

The GSR representations

	ø $\sqrt{article}$	$H_{0.2}$ $\sqrt{height}$	$H_{0.6}$ $\sqrt{foot}$	$H_{0.8}$ $\sqrt{head}$	$H_{1.0}$ $\sqrt{base}$	
sg.nom	statt^{j}- á	vysot- á	noɦ- á	ɦolov- á	osnóv -a	
sg.gen	statt^{j}- í	vysot- ý	noɦ- ý	ɦolov- ý	osnóv -y	
sg.dat	statt^{j}- í	vysot^{j}- í	noz^{j}- í	ɦolov^{j}- í	osnóv^{j} -i	$H_{1.0}$
sg.inst	statt^{j}- éju	vysot- óju	noɦ- óju	ɦolov- óju	osnóv -oju	
sg.loc	statt^{j}- í	vysot^{j}- í	noz^{j}- í	ɦolov^{j}- í	osnóv^{j} -i	
pl.dat	statt^{j}- ám	vysót -am	noɦ- ám	ɦólov -am	osnóv -am	
pl.inst	statt^{j}- ámi	vysót -amy	noɦ- ámy	ɦólov -amy	osnóv -amy	$H_{0.8}$
pl.loc	statt^{j}- áx	vysót -ax	noɦ- áx	ɦólov -ax	osnóv -ax	
sg.acc	statt^{j}- ú	vysot- ú	nóɦ -u	ɦólov -u	osnóv -u	$H_{0.5}$
sg.voc	—	vysót -o	nóɦ -o	ɦólov -o	osnóv -o	
pl.nom	statt^{j}- í	vysót -y	nóɦ -y	ɦólov -y	osnóv -y	
pl.acc	statt^{j}- í	vysót -y	nóɦ -y	ɦólov -y	osnóv -y	$H_{0.1}$
pl.voc	—	vysót -y	nóɦ -y	ɦólov -y	osnóv -y	
pl.gen	statt^{j}- éj	vysót-ø	n^{j}íɦ -ø	ɦol^{j}ív -ø	osnóv -ø	ø

The GSR analysis: Competition and Coalescence

root →	**ø**	**$H_{0.2}$**	**$H_{0.6}$**	**$H_{0.8}$**	**$H_{1.0}$**	affix↓
sg.nom	ø+ $H_{1.0}$	$H_{0.2}$+$H_{1.0}$	$H_{0.6}$+$H_{1.0}$	$H_{0.8}$+$H_{1.0}$	$H_{1.0}$ +$H_{1.0}$	**$H_{1.0}$**
pl.dat	ø+ $H_{0.8}$	$H_{0.2}$+$H_{0.8}$	$H_{0.6}$+$H_{0.8}$	$H_{0.8}$+$H_{0.8}$	$H_{1.0}$+$H_{0.8}$	**$H_{0.8}$**
sg.acc	ø+ $H_{0.5}$	$H_{0.2}$+$H_{0.5}$	$H_{0.6}$+$H_{0.5}$	$H_{0.8}$+$H_{0.5}$	$H_{1.0}$+$H_{0.5}$	**$H_{0.5}$**
pl.nom	ø+ $H_{0.1}$	$H_{0.2}$+$H_{0.1}$	$H_{0.6}$+$H_{0.1}$	$H_{0.8}$+$H_{0.1}$	$H_{1.0}$+$H_{0.1}$	**$H_{0.1}$**
	$\sqrt{article}$	$\sqrt{height}$	$\sqrt{foot}$	$\sqrt{head}$	$\sqrt{base}$	

- a single underlying accent: no competition

The GSR analysis: Competition and Coalescence

root →	**ø**	**$H_{0.2}$**	**$H_{0.6}$**	**$H_{0.8}$**	**$H_{1.0}$**	affix↓
sg.nom	ø+ $H_{1.0}$	$H_{0.2}$+ $H_{1.0}$	$H_{0.6}$+ $H_{1.0}$	$H_{0.8}$+ $H_{1.0}$	$H_{1.0}$ +$H_{1.0}$	**$H_{1.0}$**
pl.dat	ø+ $H_{0.8}$	$H_{0.2}$+$H_{0.8}$	$H_{0.6}$+ $H_{0.8}$	$H_{0.8}$+$H_{0.8}$	$H_{1.0}$+ $H_{0.8}$	**$H_{0.8}$**
sg.acc	ø+ $H_{0.5}$	$H_{0.2}$+ $H_{0.5}$	$H_{0.6}$ +$H_{0.5}$	$H_{0.8}$ +$H_{0.5}$	$H_{1.0}$+ $H_{0.5}$	**$H_{0.5}$**
pl.nom	ø+ $H_{0.1}$	$H_{0.2}$ +$H_{0.1}$	$H_{0.6}$ +$H_{0.1}$	$H_{0.8}$ +$H_{0.1}$	$H_{1.0}$ +$H_{0.1}$	**$H_{0.1}$**
	$\sqrt{article}$	$\sqrt{height}$	$\sqrt{foot}$	$\sqrt{head}$	$\sqrt{base}$	

- a single underlying accent: no competition
- competition: strongest underlying accent wins

The GSR analysis: Competition and Coalescence

root →	**ø**	**$H_{0.2}$**	**$H_{0.6}$**	**$H_{0.8}$**	**$H_{1.0}$**	affix↓
sg.nom	ø+ $H_{1.0}$	$H_{0.2}$+ $H_{1.0}$	$H_{0.6}$+ $H_{1.0}$	$H_{0.8}$+ $H_{1.0}$	$H_{1.0}$ +$H_{1.0}$	**$H_{1.0}$**
pl.dat	ø+ $H_{0.8}$	$H_{0.2}$+$H_{0.8}$	$H_{0.6}$+ $H_{0.8}$	$H_{0.8}$ +$H_{0.8}$	$H_{1.0}$+ $H_{0.8}$	**$H_{0.8}$**
sg.acc	ø+ $H_{0.5}$	$H_{0.2}$+ $H_{0.5}$	$H_{0.6}$ +$H_{0.5}$	$H_{0.8}$ +$H_{0.5}$	$H_{1.0}$+ $H_{0.5}$	**$H_{0.5}$**
pl.nom	ø+ $H_{0.1}$	$H_{0.2}$ +$H_{0.1}$	$H_{0.6}$ +$H_{0.1}$	$H_{0.8}$ +$H_{0.1}$	$H_{1.0}$ +$H_{0.1}$	**$H_{0.1}$**
	$\sqrt{article}$	$\sqrt{height}$	$\sqrt{foot}$	$\sqrt{head}$	$\sqrt{base}$	

- a single underlying accent: no competition
- competition: strongest underlying accent wins
- Leftmost accent wins (=if same activity)

The GSR analysis: Competition and Coalescence

root →	**ø**	**$H_{0.2}$**	**$H_{0.6}$**	**$H_{0.8}$**	**$H_{1.0}$**	affix↓
sg.nom	ø+ $H_{1.0}$	$H_{0.2}$+ $H_{1.0}$	$H_{0.6}$+ $H_{1.0}$	$H_{0.8}$+ $H_{1.0}$	$H_{1.0}$ +$H_{1.0}$	**$H_{1.0}$**
pl.dat	ø+ $H_{0.8}$	$H_{0.2}$ +$H_{0.8}$	$H_{0.6}$+ $H_{0.8}$	$H_{0.8}$ +$H_{0.8}$	$H_{1.0}$+ $H_{0.8}$	**$H_{0.8}$**
sg.acc	ø+ $H_{0.5}$	$H_{0.2}$+ $H_{0.5}$	$H_{0.6}$ +$H_{0.5}$	$H_{0.8}$ +$H_{0.5}$	$H_{1.0}$+ $H_{0.5}$	**$H_{0.5}$**
pl.nom	ø+ $H_{0.1}$	$H_{0.2}$ +$H_{0.1}$	$H_{0.6}$ +$H_{0.1}$	$H_{0.8}$ +$H_{0.1}$	$H_{1.0}$ +$H_{0.1}$	**$H_{0.1}$**
	$\sqrt{article}$	$\sqrt{height}$	$\sqrt{foot}$	$\sqrt{head}$	$\sqrt{base}$	

- a single underlying accent: no competition
- competition: strongest underlying accent wins
- Leftmost accent wins (=if same activity)
- coalescence (if sum of activity is 1) and Leftmost default

Conclusion

Summary and Discussion

- our (preliminary) database of lexical accent competition shows
  A. there are **degrees of dominance** (independent of status as root, affix, of head)
  B. there are **no patterns where 'Outermost morpheme' necessarily decides** the competition

- these empirical facts are predicted in an account where all phonological elements can have different **degrees of activity**

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Appendix

Nez Perce

- if multiple accentual prefixes come together, stress is attracted iteratively leftward and the leftmost prefix realizes its accent as a primary stress

(8) [[cúukwè]ce]
cúukwe-cee
know-inc
'I know'

(9) [siléew[[cùkwè]ce]]
sléew-cúukwe-cee
by.seing-know-inc
'I know by seeing'

(10) [sepée[slèew[[cùkwè]ce]]]
sepée-sléew-cúukwe-cee
caus-by.seing-know-inc
'I make you (sg) know by seeing'

(11) [née[sepè[slèew[[cùkwè]ce]]]]
nées-sepée-sléew-cúukwe-cee
plob-caus-by.seing-know-inc
'I make you (pl) know by seeing'

Crook (1999)[462(420)]

- there are no multiple accented suffixes and no accented suffixes that structurally outscope an accented prefix (BjorkmanDunbar2016)

Yakima Ichishkiin (Sahaptian)

- if multiple accentual suffixes come together the RMost surfaces with the stress; if multiple accentual prefixes come together the LMost realizes its accent

(12) [[[shyak]ɬa]anmí] táatpas
shyák-ɬá-anmí táatpas
scout-agt.nzr-gen shirt
'the scout's shirt'

Jansen (2010)[55(8)

(13) [[pá[shapa[wina]]ta]
pá-shapá-wína-ta
inv- caus- go- fut
's/he will let him/her go'

Jansen (2010)[54(7)]

- however, the accentual suffixes overwrite accentual prefixes

(14) [[ʃapa[ʃukʷaa]]ɬá]
ʃapa-ʃukʷaa-ɬá
caus-know-ag.nom
'prophet'

Hargus and Beavert (2006a)[181](13)

Chamorro: An instance of 'Outermost'?

- stress tends to be on the right edge of the prosodic word and is penultimate by default in words in isolation and if suffixes are added
  - a. [finlágu] *'running'* → [finalagú-ña] *'his running'*
  - b. [bapót] *'ship'* → [bapot-níha] *'their ship'*
- some prefixes (unaccented) do not influence the penultimate default stress (c); some prefixes (accentual) do overwrite the default pattern (d,e)
  - c. [géftaw] *'generous'* → [man-géftaw] *'generous' (pl.)*
  - d. [mantíka] *'fat'* → [mí-mantika] *'abounding in fat'*
  - e. [paníti] *'to strike'* → [ä́-paniti] *'to strike an one another'*
- however, suffix [-ña] wins over accentual prefixes and overwrites the stress pattern
  - g. [mí-mantika] *'abounding in fat'* → [mi-mantiká-ña] *'more abounding in fat'*

(Chung, 1983)

Chamorro: Our database entry

N°.M.Classes:	3
	1 root, 3 affix
Dec.within.M.class	RMost
Default:	penultimate

1		2		3
A1	>	A2	>	R1, A3
$\text{SfxStr}_{\text{-nã}}$	>	PrfxS	>	RtU, RtA, PrfxU, SfxS

- all sources/theoretical discussions (e.g. Topping, 1968; Chung, 1983, 2020; Kaplan, 2008) only cite *a single example* of a structure where a suffix overwrites the accent of an accented prefix
- → we analyse this as a **dominant suffix**

Lexical Accent Competition: More 'accentual' morphemes

(15) Greek stress: Masculine nouns (Revithiadou, 1999, 93+94)

a. anθrop-os → Antepenult default
   á nθropos 'man'-nom.sg

b. anθrop-**ʻ** u → one pre-accenting morpheme
   anθr **ó** pu 'man'-gen.sg

c. kl **í** van-**ʻ** u → stem accent wins
   kl **í** vanu 'kiln'-gen.sg

d. uran **ʼ** -**ʻ** u → post-accenting stem wins
   uran **ú** 'sky'-gen.sg

- 'accentual' morphemes in (15): accented (15-c), pre-accenting (15-b-d), and post-accenting (15-d)
- the type of accentual behaviour required by a morpheme is orthogonal to the **lexical accent competition**