THE UNIVERSITY OF UTAH
DEPARTMENT OF LINGUISTICS

Local and Nonlocal Interactions between Speech Sounds

Aaron Kaplan

Chamorro

- An Austronesian language spoken in Guam and the Northern Mariana Islands

- The definite article [i] 'the' causes the stressed vowel to change:

gúma?	'house'	→	i gíma?	'the house'
sóŋsuŋ	'village'	→	i séŋsuŋ	'the village'
dáŋkulu	'big one'	→	i dǽŋkulu	'the big one'

- But only when the definite article and the stressed vowel are in adjacent syllables:

pulónnun	'trigger fish'	→	i pulónnun	'the trigger fish'
mundóŋgu	'cow's stomach'	→	i mundóŋgu	'the cow's stomach'

- A Romance language spoken in Italy, similar to (but not a descendant of) Italian

- When the last vowel in a word is [u], the stressed vowel changes:

kordéros	'lambs'	→	kordíru	'lamb'
tsóbos	'wolves'	→	tsúbu	'wolf'
tsamárgos	'muddy lakes'	→	tsamérgu	'muddy lake'

- When the stressed vowel is farther from the end of the word, the interaction persists:

  | trwébanos | 'beehives' | → | trwíbanu | 'beehive' |
  | páʃara | 'bird (fem)' | → | péʃaru | 'bird (masc)' |

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Lena

Bolognese

Implications

- A Romance language spoken in Bologna, Italy, similar to (but not a descendant of) Italian

- The pronoun meaning 'he' is [l] before vowels:

  l arspɑnd 'he responds'

- And [al] before consonants:

  al vad 'he sees'

- The pronoun meaning 'him/it' is [l] before vowels:

  i l adroːveŋ 'they use it'

- And [al] before consonants:

  j al daŋ 'they give it'

Generalization

[l] before vowels, [al] before consonants

- When the pronouns appear before vowels, everything is as expected:

    'he   guessed   it'

Bolognese

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'he   guessed   it'

Here's the verb.

indveŋŋa

Generalization

[l] before vowels, [al] before consonants

- When the pronouns appear before vowels, everything is as expected:

'he   guessed   it'

l   iŋdveŋna

This pronoun is before a vowel, so it's [l].

Bolognese

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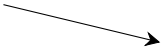Speech
Sounds

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Generalization

[l] before vowels, [al] before consonants

- When the pronouns appear before vowels, everything is as expected:

'he	guessed	it'	*This pronoun is*
↓			*before a*
al	l	iŋdveŋna	*consonant, so*
			it's [al].

Generalization

[l] before vowels, [al] before consonants

- But before consonants, something surprising happens.
- Here's what we expect:

  'he   sees   him'

Generalization

[l] before vowels, [al] before consonants

- But before consonants, something surprising happens.
- Here's what we expect:

'he   sees   him'

vad

Here's the verb.

Generalization

[l] before vowels, [al] before consonants

- But before consonants, something surprising happens.
- Here's what we expect:

'he   sees   him'

al   vad

*This pronoun is
before a
consonant, so
it's [al].*

Bolognese

Generalization

[l] before vowels, [al] before consonants

- But before consonants, something surprising happens.
- Here's what we expect:

'he	sees	him'
↓		
l	al	vad

This pronoun is before a vowel, so it's [l].

Bolognese

Generalization

[l] before vowels, [al] before consonants

- But before consonants, something surprising happens.
- Here's what we expect:

'he   sees   him'

l   al   vad

- Here's what we actually find:

al le vad

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The Puzzle

[al le vad], not [la l vad]

- What's going on?
- Maybe Bolognese doesn't allow two [l]s in one syllable.
- [la l vad]: The first syllable is [lal]. Not allowed!
- [al le vad]: The first syllable is [al], the second is [le].
  - The [l]s may be closer together, but they're in separate syllables.

- Producing the right sound sometimes means remembering what came before, and sometimes it means anticipating what's coming later.

Implications

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- trwéban… vs. trwíban… (Lena): is [u] coming up?

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- Producing the right sound sometimes means remembering what came before, and sometimes it means anticipating what's coming later.
- [gúmaʔ] vs. [gímaʔ] (Chamorro): did the definite article come first?
- trwéban… vs. trwíban… (Lena): is [u] coming up?
- [l] vs. [al] vs. [le] (Bolognese): is a vowel or a consonant coming next? Was there another [l] right before?

- This memory/anticipation sometimes concerns the local environment, but it may extend to more distant things.
- Locality can be measured in counterintuitive ways.
- Any system that claims proficiency with language must contend with all of these considerations.