

# Chapter 5

Underlying and surface representations



1

## Introduction

- The variation in the pronunciation of any word is truly mind-boggling
  - men vs. women (gender)
  - old vs. young (age)
  - different styles (formal/informal)
  - different regional accents (dialects)
  - economic status (→ sociolinguistics)
  - etc.! (e.g. group status, attitudes)
  - physical differences
- Still, all variations, in some sense, "one word", "one language"

2

## Deep and surface level

- Last chapter: inputs and outputs
- Input = phonological level (=one word, unity)
- Output = phonetic level (different output forms)
  - in between: rules (or constraints)
- Humans **categorize** their experience of different phonetic events as the "same" (phonological) word

3

## Variation in sounds

- "Allophonic variation"
  - One "deep" sound has different outputs
- One sound may be realized in different ways depending on the sounds before or after it, and/or its position in the syllable

leek, follow ← /I/ → ill, cold  
`clear I'                      `dark I'

4

## Allophones vs. phonemes

- So two sounds can be related to each other in this way
  - e.g. clear I and dark I
- **Depends on the language:**
  - In English: clear I and dark I are allophones
  - in other languages, clear I and dark I are phone-  
mes (1) *Marshallese phonemic velarization contrast in laterals*  
laɪ 'knock'  
laɪ 'earth'

## Phonemes

- Segment inventories = phoneme inventories
  - crucial role: minimal pairs
  - ship and sip in English, shi 是 and xi 西 in Chinese
  - proves that these sounds are contrastive units (=phonemes) in these languages
  - **no minimal pairs for clear I and dark I in English:** one phoneme /I/

7

## Allophones

- Predictable => express by a rule, e.g. leak vs. ill

Underlying	li:k	ɪl
<u>l-VELARIZATION</u>	( <i>n.a.</i> )	ɫ
Output	li:k	ɪɫ

- l-velarization: l is dark (velarised) at the end of the syllable

8

## Underlying vs. output level

Arguments: I. Economy

**Predictable** information is expressed by a rule, rather than present at the "deep" level

- =economical for the brain

II. Express phonological relatedness

E.g. English plural is one morpheme /z/ although it shows up with different allophones on the surface

- relations between sounds, morphemes

9

## How to choose it?

- English plural: collect data
  - buses, cats, dogs, feet, seas, limbs, skies, etc etc etc and write them down phonetically
- Choose one form that will work, e.g. /z/ for plural, /l/ for clear and dark l in English, /t/ for aspirated / non-aspirated
  - usually not great problem
- Work out the rules that are needed to derive all allophones
  - e.g. aspiration, l-velarisation

11

## Conclusion

- Different types of variation lead us to set up abstract "deep" or "phonological" or "underlying" forms, which are related to "surface" or "phonetic" forms by way of rules
- Finding the underlying form + the rule(s) requires some practice

12

## Homework

- Read the chapter carefully, and check the derivations
- Exercises Qs 35-39, 42
- Thank you for your attention

13