UNDERLYING AND SURFACE REPRESENTATIONS

When morphemes exhibit alternations that are *rule governed*, one must determine the *underlying* or *abstract* representation of each morpheme and the rules needed to derive *all* alternations from the underlying representation.

Underlying representations may be different from the derived ones:

UR   /pɛn/

PR   [pʰɛ̃n]

Why do we assume that there are two levels of representation: an *underlying* and a *surface* one?

There are three arguments:

1.   *Economy*: Allophonic information can be stated by phonological rules; allophones are predictable – why should this information be stored in the lexicon???

2.   *Relatedness of morpheme alternants* can only be expressed with two levels of representation.

3.   *Generalizations*: most generalizations can only be explained at the underlying level.

Study the examples illustrating the three arguments from the book (pp. 51-53)!

Turkish Vowel Harmony:

                -lar/-ler (Plural allomorph)

Which form is the underlying representation?

        /-lEr/

/E/   represents <u>a</u> and <u>e</u>

ARCHIPHONEME: A separate phonological unit that is set up to represent the properties shared by two phonemes. It is a "theoretical segment which is only partially specified for phonetic properties, omitting some properties … which may be determined by rule". (D. Odden, 2005).

Hungarian Vowel Harmony:

    -nak/-nek (Dative allomorphs)

Which form is the underlying representation?

        /-nEk/

/E/ represents <u>a</u> and <u>e</u>.

Why /E/ ?

Independent evidence:

                        nek+em (to me)
                        nek+ed (to you)
                        nek+i (to him/her)

                        etc.

Problems of neutralization:

In German /t/ and   /d/ are separate phonemes:

leiten [t] *to lead*   POSITION OF
leiden [d] *to suffer*   RELEVANCE

Rat [t] *advice*   POSITION OF
Rad [t] *whee*l   NEUTRALIZATION

Question: How the final [t] of *Rat* and *Rad* should be analyzed?

The final [t] of these words cannot be analyzed as /t/, since unlike its counterpart in intervocalic position, it cannot stand opposed to /d/. Therefore an archiphoneme would be set up.

Can the underlying representation of both *advice* and *wheel* be /raT/ where /T/ is specified [o voice]?

Why /T/?

Argument: When two phonemes are neutralized in a given position, it is the *unmarked* member of the opposition which is found phonetically.

BUT: there is an argument for /D/ as being the underlying segment: when there is an alternation between word-final voiced and voiceless stops, the voiced stop is the underlying form because of the phonological process involved here: devoicing word-finally!

Study the examples in Section 4.5 (pp. 54-55)

There may be cases when the alternants must be derived from an underlying form which coincides with *none* of the phonetic representation forms.

Yawelmani (a dialect of the Yokuts language, California)

Vowel Harmony Rule:

$$\begin{bmatrix} V \\ +high \\ -back \end{bmatrix} \rightarrow [+ round] \ / \begin{bmatrix} V \\ +high \\ +round \end{bmatrix} \ C_o + C_o \ \_\_$$

What about #9 and #10?

Compare: [go:bit]
[ʔo: ʔut]

There are two kinds of long o:

(1)   Those which behave like u and cause rounding harmony,

(2)   Those that behave like o and do not cause rounding harmony.

In Yawelmani only

e:
a: } occur as long vowels
o:

Long *u:* is lacking!

Suffix harmony suggests that those occurrences of *o:* which behave like high rounded vowels are actually derived from <u>underlying u</u>:

Consequently, the underlying form for the stem 'steal' must be /ʔuːtʔ/, and we need a rule that lowers long high vowels:

$$
\begin{bmatrix} V \\ + \text{high} \\ + \text{back} \\ + \text{long} \end{bmatrix} \rightarrow \ [\text{-high}]
$$

The environment is <u>not</u> specified, because all PRs of the /u:/ will undergo this rule.

(Note: an underlying short <u>u</u> is never lowered, e.g. *mut* 'swear')

	/goːb + it/	/mut + it/	/ʔuːtʔ + it/
UR	/goːb + it/	/mut + it/	/ʔuːtʔ + it/
Vowel Harmony Rule	-	mut + ut	ʔuːt/ʔ + ut
Long High Vowel Lowering Rule	-	-	ʔoːtʔ + ut
PR	[goːbit]	[mutut]	[ʔoːtʔut]

Abstract underlying representations have an explanatory function. What on the surface may appear to be an irregularity, has an explanation at the abstract level.