

# Abstractness, p. 1

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Tibetan example from Morris Halle and G. N. Clements (1983) *Problem Book in Phonology: A Workbook for Introductory Courses in Linguistics and in Modern Phonology*. MIT Press.

I. Note the pronunciation of *riding* and *writing* in American English ([D]=[r]):

riding	[rayDɪŋ]
writing	[rǎyDɪŋ] <sup>1</sup>

Consider the following two hypotheses about the underlying representations of these words:

Hypothesis A: The words *riding* and *writing* are a minimal pair, contrasting [ay] and [ǎy]. This shows that /ay/ and /ǎy/ are distinct phonemes in English, and the underlying representations (assuming [D] is an allophone of /t/) are /raytɪŋ/ and /rǎytɪŋ/.

Hypothesis B: The difference in the pronunciation of the vowels of *riding* and *writing* is related to the pronunciation of *ride* [rayd] and *write* [rǎyt]. In general, vowels are pronounced slightly shorter before voiceless consonants, and the contrast between *ride* and *write* is a case of this. When the suffix *-ing* is added, the /t/ and /d/ both become flaps, neutralizing the distinction between them. But the phonology “knows” that the [D] in *ride* is underlyingly voiced and the one in *write* is underlyingly voiceless, and adjusts the vowels accordingly. The underlying representations are /raydɪŋ/ and /raytɪŋ/. The phonetic contrast in vowels is the result of an underlying contrast in consonants!

- a. Which of these two hypotheses results in underlying representations that are more like the actual phonetics?
- b. Which of these two hypotheses better describes the situation in English; in other words, which one is a better phonological analysis for English?
- c. Given the answers to a. and b, what conclusion can we draw about the nature of underlying representation and its relationship to the surface phonetics?

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<sup>1</sup>The actual pronunciation of the vowel varies between different dialects, but it is always shorter than [ay]. The most common pronunciation is [ey], but in some areas it is [ʌy].

## Abstractness, p. 2

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- II. Consider the following words for numbers in the Lhasa dialect of modern Tibetan. (These are relatively broad transcriptions, and do not display details of vowel articulation.)

1.	ʃu	'ten'	7.	gu	'nine'
2.	ʃig	'one'	8.	ʃjurgu	'nineteen'
3.	ʃugʃig	'eleven'	9.	gubʃu	'ninety'
4.	ši	'four'	10.	ŋa	'five'
5.	ʃubši	'fourteen'	11.	ʃuŋa	'fifteen'
6.	šibʃu	'forty'	12.	ŋabʃu	'fifty'

- a. What is the order of morphemes in the Tibetan numeral?  
teens (11, 14, 15, 19)  
tens (40, 50, 90)
- b. What happens when the individual numeral morphemes are combined? How can we account for this?

Tibetan is a Sino-Tibetan language (Tibeto-Burman branch) spoken by about 1 million speakers, mostly in Tibet (under the rule of China). Lhasa, the capital, has 255,000 inhabitants.

