BBN-ANG-243 Advanced Phonology: Phonological Analysis

1. Introduction

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(1) Where you are

year 1: BBN–ANG–141 Foundations of phonology lecture 45mins/week, 2 credits
✓ THIS IS SOMETHING YOU HAVE ALREADY DONE

year 2: core phonology courses
a. BBN–ANG–241 Phonology lecture, 45 mins/week, 2 credits
b. BBN–ANG–242 Phonology seminar (for major students only) 90 min/week, 3cred
✓ YOU HAVE ALREADY DONE THESE TOO

year 3: **BBN–ANG–243 Advanced phonology lecture (for students specializing in English only), 90 mins/week, 3 credits**
THIS IS WHERE YOU ARE NOW!

- web: http://seas.elte.hu/w/!courses/analysis/start
- assessment: written examination — fill-in+multiple choice (80 Qs, fail: 50%)
- no-risk, non-compulsory Preliminary Test — 15 fill-in Qs <youmust register in advance>

(2) What we assume you already know

- how to characterise speech sounds in terms of articulatory features (*phonetics*)
- the difference between *phonetics* (physical sound properties, gradual) and *phonology* (sound pattern, behaviour, categorical)
- difference in status between *distinctive* and *redundant* features (distribution, phoneme, allophone, contrast)
- loads of distributional facts about the English sound pattern (*rules* of E. phonology)

(3) What the course is about: phonological analysis

(3.1) Patterns

	PATTERN TYPE	DESCRIBED/EXPRESSED BY
i.	Allophonic patterns	*Allophonic phonological rules*: they predict non-contrastive features of sound e.g. aspiration [p] [pʰ]
ii.	Morpho-phonological patterns	*Morpho-phonological rules*: they state generalisations about alternations: they predict the phonological form of allomorphs (alternants) and state under what conditions each occurs. e.g. regular past allomorphy {/t/, /d/, /ɪd/}
iii.	Phonotactic patterns	*Phonotactic rules*: they state what a phonologically possible word is, i.e. how segments can combine into words e.g. *fpɔt/ but /spɔt/

(3.2) Levels of representation & mapping

Phonological analysis assumes that the surface patterns/regularities are captured by

a. an abstract *representation* which encodes the information necessary for capturing them (the phonological/underlying representation)

b. a set of *rules* that derive the surface/phonetic representation from this abstract representation

phonological/underlying representation (UR) → phonetic/surface representation (SR)

(3.3) The relationship between the SR and the UR informally expressed: the '*AS IF*' assumption

If a unit X of the phonetic/surface representation 'behaves like' the unit Y, then X and Y are the same *phonologically*, , i.e. they are represented in the same way in UR.

Phonological relationships can be read off the UR and regularities are expressed by phonological rules

(4) Phonological analysis: the task is to determine (i) the UR and (ii) the mapping (the rules)

(5) The non-uniqueness of phonological analysis

More than one analysis of the same data is possible – depending on the general theoretical assumptions we make (ideally, it is possible to argue that one of is them is the optimal one)

(6) Simple (and sad) example: [l] and [ɬ]

(6.1) Complementary distribution and contrast: *velarisation is non-contrastive*

	file	*life*		
phonetic	[faj**ɬ**]	[**l**ajf]	[ɬ] [l]	surface
phonological	/faj**l**/	/**l**ajf/	/?/	underlying

(6.2) Derivation: (a) /l/ → [+velarisation] / _ {C≠j, ‖ } or (b) /ɬ/ → [−velarisation] / _ {V, j }

(a)	phonetic	[faj**ɬ**]	[**l**ajf]	[ɬ] [l] surface
	phonological	/faj**l**/	/**l**ajf/	/l/ underlying
(b)	phonetic	[faj**ɬ**]	[**l**ajf]	[ɬ] [l] surface
	phonological	/faj**ɬ**/	/**ɬ**ajf/	/ɬ/ underlying

(6.3) Argumentation: Which is the better analysis: (a) or (b)?

- Are there any facts that are incompatible with one of the analyses?

- Are there any facts that are better explained by one analysis than the other?
  - distributional facts?
  - phonetic facts (phonetic motivation)?

(7) Complex (and happier) example: **[ŋ]** or How many underlying nasals are there in English?

(7.1) Phonemics/taxonomic phonology: "once a phoneme always a phoneme"

if two sounds contrast in some environment, their difference should always be assumed to be distinctive: they belong to different phonemes. [sʌn] vs. [sʌŋ] ⇒ /n/ vs. /ŋ/ 3 UR nasals: /m/, /n/, /ŋ/

(7.2) Closer look: distribution

(7.2.1) Limited contrast

					contrast with other nasals
i. morpheme-initially	#_	***m**ap*	***n**ap*	*[ŋap]	**NO**
ii. morpheme-medially	_V	*E**mm**y*	*a**n**y*	*[ɛŋɪj]	**NO**
	_C	*li**mp***	*li**nt***	[lɪŋk]	**NO**
iii. morpheme-finally	_#	*so**me***	su**n**	*su**ng*** [sʌŋ]	**YES**

!! [sɪŋə] =[sɪŋ#ə] !! *[lɪŋt] !! [baŋd] =[baŋ#d]

(7.2.2) 'lonely' **[ŋ]** vs. **[ŋg]**: complementary distribution

(a)	[ŋ]	[ŋg]	[ŋk]
morpheme finally	*sing* [sɪŋ]	–	*sink* [sɪŋk]
morpheme medially	–	*anger* [aŋgə]	*anchor* [aŋkə]

[ŋg]	*never* before a morpheme boundary	*singer*	[#sɪŋ#ə#]	*[#sɪŋg #ə#]
[ŋ]	*only* before a morpheme boundary	*finger*	[#fɪŋgə#]	*[#fɪŋə#]

exceptions: i. *longer, stronger, younger, longest, strongest, youngest* ['lɔŋg #əst]
ii. *hangar*, *–ingham* (!*gingham*) ['nɔtɪŋəm]

(b) [n] - [nd] *money* - *Monday* *ten* - *tend*

[s] - [st] *soul* - *stole* *miss* - *mist*

(7.2.3) pre-**[ŋ]** vowels: only short

VC	**V:**	**V**	
C≠[ŋ]	*fine* [faɪn]	*fin* [fɪn]	
C=[ŋ]	*[saɪŋ]	*sing* [sɪŋ]	exc: *oink* [ɔɪŋk]

OTHER FACTS/GENERALISATIONS

(7.2.4) nasal+plosive clusters

[nasal][stop]#	p	t	k	b	d	g
m	lɪmp	–	–	–	–	–
n	–	tent	–	–	lɛnd	–
ŋ	–	–	lɪŋk	–	–	–

i. $C_{[nasal]}C_{[stop]}$ *clusters must be homorganic within the morpheme.*

ii. *Non-coronal voiced stops cannot occur after nasals morpheme-finally*

(7.2.5) onset clusters and sonority

play	**tr**y	**tw**ist
*[lpɛj]	*[rtɑj]	*[wtɪst]

Sonority Hierarchy: stops, affricates < fricatives < nasals < l < r <glides < vowels

Onset clusters must have rising sonority (! regular exception: #sC ***sp**ot, **st**op, **sk**i*)

(7.2.6) vowels before morpheme-final consonant clusters

coronal cluster	*mount* [mawnt]	*sent* [sɛnt]
	field [fɪjld]	*held* [hɛld]
non-coronal cluster	*[ɛjŋk]	*tank* [taŋk]
	*[hɪjlp]	*help* [hɛlp]

Only phonologically short vowels can occur before morpheme-final non-coronal clusters

(7.3) AS IF

Observation [ŋ] behaves as if it were a non-coronal cluster, specifically a cluster of a nasal+velar stop (ng)

Analysis ‘*AS IF*’ assumption → phonologically it *IS* /ng/ = There is no UR /ŋ/, only /m/ and /n/ in English.

(7.4) Costs and benefits

(7.4.1) Benefits: What does this analysis buy us?

(a) explains why 'lonely' [ŋ] & [ŋg] do not contrast <they are the same in UR>

(b) explains why [ŋ] does not occur morpheme-initially <#nasal+C cluster=sonority violation>

(c) explains why pre-[ŋ] Vs are short <only short Vs occur before non-cor. clusters>

(d) explains why the /g/ of /ng/ does not appear phonetically <no voiced stops after nasals _# in general>

(e) system economy: reduces the number of UR segments (only 2 nasals)

(7.4.2) Costs: What does this analysis cost us?

(a) 'abstractness' *The presence of surface contrast does not necessarily indicate identical underlying contrast: the 'once a phoneme, always a phoneme' principle is given up*

(b) complexity of mapping *more complex rules + rule ordering*

(8) Implementation of the '*AS IF*' assumption: Generative Phonology

(a) 'behaviour' (= regularities, patterns) are expressed by mapping = *derivation*:

the phonetic (surface) representation is derived from the phonological (underlying) representation by a set of phonological *rules* which are *sequentially ordered*. Phonological rules change representations by adding predictable properties to the representation (input) to which they apply.

(b) EXAMPLE: derivation of surface/phonetic [ŋ] from underlying/phonological /ng/

phonological rules: 1. nasal assimilation: [nasal] → [α place] / _ [C, α place]

2. post-nasal g-deletion g → ∅ / [nasal] _ #

ordering: 1. before 2.

derivation:

underlying/phonological representation	/#sɪng#/	/#sɪng#ə#/	/#fɪngə#/
1. nasal assimilation	#sɪŋg#	#sɪŋg#ə#	#fɪŋgə#
2. post-nasal g-deletion	#sɪŋ#	#sɪŋ#ə#	–
surface/phonetic representation	**[sɪŋ]**	**[sɪŋə]**	**[fɪŋgə]**

(c) generative phonological analysis aims to 'explain' the pattern by

(i) identifying what the phonological (underlying) representation is

(ii) identifying what the phonological rules are

(iii) showing how the rules apply to derive the phonetic (surface) representation from the underlying one (ordering)

(9) Bad ideas: when 'explanations' do not work

(9.1) /l/ → [ɬ] / _ C where C ≠ j [ˈdɛɬtə] but [ˈvaljʉw], [ˈsɪlɪj]

(9.2) Problem: why is [j] the *only* consonant before which /l/ is clear?

(9.3) Idea 1: because *phonologically/underlyingly* it is a vowel NO GOOD ☹ a unit, *an unit

(9.4) Idea 2: the real rule is different: /l/ is clear before vowels *and* glides, but dark before a non-glide C
NO GOOD ☹ [ˈoːɬwɛjz]

(9.5) Explanation must lie elsewhere

Silver lining: at least we have seen the problem and excluded two possible explanations!