

# Issues in lenition and fortition

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# The stimulus of the talk

- Phonological processes within Natural Phonology

# The aim of the talk

- To identify the issues of lenition/fortition definition and their typology
- To revise the issue of lenition/fortition

# The outline of the talk

- 1) Introduction
- 2) The issue of definition
- 3) The issue of typology
- 4) Concluding remarks

# 1) Introduction

- Lenition/fortition - distinction between phonological processes
- Distinction is based on the force of articulation, the strength of sound
- Fortis - greater force, strong sound (voiceless)
- Lenis – lesser force, weak sound (voiced)

# 1) Introduction

- process = substitution (NP)
- Lenition = fortis  $\rightarrow$  lenis
- Fortition = lenis  $\rightarrow$  fortis
- Substitution for nothing (deletion) or  
Substitution for something (substitution,  
insertion)

# 1) Introduction

- Insertion = fortition (for Listener)
- Deletion = lenition (for Speaker)
  
- My problem:
- *prince* pr<sup>🖐️</sup>ns → pr<sup>🖐️</sup>nts
- Desynchronization of nasal and oral closures
- Why fortition when it serves the speaker?

## 2) The issue of definition

### **NP definition of lenition/fortition is**

- Circular (lenition is reversal of fortition)
- Procedure not result-oriented
- Onedimensional (only fortis-lenis scale)
- Static (left-right on the scale)



## 2) The issue of definition

- Operational within voiced/voiceless categories but not between (explains assimilation of voice but not of place or of manner)
- Relative (energy is relative in context cf. *web traffic vs. web domain*)
- Not exhaustive (sound strength is inherent property of a sound but there are also relations between sounds)

## 2) The issue of definition

### Revised definition of lenition

- Lenition = reduction
- Three criteria which lenition reduces:
- A) energy – from more to less energy, from fortis to lenis (voicing, p → b)
- B) gestural complexity - from more to less complex (vowel centralization (↗ → ★), monophthongization (‡★ → ②), assimilation of place (-np- → -mp-), devoicing of final obstruents (b → p) and deletion (*last night* l↗st na👉t → l↗s na👉t).

## 2) The issue of definition

### Revised definition of lenition cont.

c) Aerodynamic unnaturalness – from less to more natural (the consonantal epenthesis

*prince* pr<sup>hand</sup>ns → pr<sup>hand</sup>nts)

- No conflict between A) and B) as more energy doesn't mean more gestures – these two are not correlated

## 2) The issue of definition

### **Interpretation of the lenition criteria**

- A) Energy – relative, depends on context
- B) Gestures – calculated paradigmatically (for sounds) , doesn't depend on context
- C) Aerodynamic unnaturalness – calculated syntagmatically (for sound sequences), depends on the context which creates the unnaturalness



autonomous

AERODYNAMIC UNNATURALNESS  
REDUCTION (SYNTAGMATIC)

COMPLEXITY REDUCTION  
(PARADIGMATIC)

ENERGY REDUCTION (OPERATES ON  
VOICED/VOICELESS CATEGORIES BUT  
NOT WITHIN)

relative

## 2) The issue of definition

### **Interpretation of the lenition criteria**

- Aerodynamic unnaturalness (the structure of the vocal tract)
- Gestures (come from a language inventory)
- Energy (relative)

## 2) The issue of definition

### Interpretation of the lenition criteria cont.

bad boy /b→d b②👤/ → /b→b b②👤/

First, aerodynamic unnaturalness is reduced

/b→d b②👤/ → /b→b b②👤/

- Next, gestural complexity is reduced

/b→bb②👤/ → /b→b②👤/

## 2) The issue of definition

### **Revised definition of fortition**

Negative definition of fortition

Lenition = default option for the Speaker

- If lenition is suppressed, fortition is activated
- so, fortition is suppression of lenition (like in unlearning)
- The speaker switches from lenition to fortition between and within the speech styles



### 3) The issue of typology

- Compiled list of phonological processes
- Revised list

<b>Fortition</b>	<b>Lenition</b>
Diphthongization	Monophthongization
Epenthesis	Shortening
Vowel insertion	Weakening: fricativization, gliding
Lengthening	Centralization
Strengthening: stopping, aspiration	Segment deletion
Devoicing	Cluster reduction/simplification
	Assimilation of stops and nasals
	Palatalization: Yod coalescence
	Degemination
	Hiatus avoidance via linking or intrusive /r/
	Smoothing
	Flapping
	Debuccalisation
	Voicing

Fortition	Lenition		
	Energy reduction	complexity reduction	Aerodynamic unnaturalness reduction
Aspiration	Voicing	Voicing	Epenthesis
Diphthongization		Monophthongization	Vowel insertion
Lengthening		Segment deletion	**Stopping
**Spirantization		*Assimilation of stops and nasals	Shortening
		Degemination	Gliding
		Smoothing	*Centralization
		Devoicing	Hiatus avoidance via linking or intrusive /r/
		*Palatalization	Smoothing
		*Centralization	*Palatalization
			Debuccalization
			Flapping
			**Spirantization
			*Assimilation of stops and nasals

### 3) The issue of typology

The differences between the current typology and my typology:

- 1. epenthesis
- 2. vowel insertion
- 3. devoicing
- 4. fricativization

### 3) The issue of typology

- 1. epenthesis
- Although the description points to a fortitive process, the motivation of the desynchronization clearly points to its lenitive nature as /t/ production is a side effect of aerodynamics of the vocal tract

### 3) The issue of typology

- 2. vowel insertion
- the Polish speakers of English insert vowels in the clusters (e.g. *people* pi:pl → pipɪl)
- The insertion of a vowel is a lenition, although the number of gestures increases by one sound, vowel insertion eases the transition between two consonants

## 3) The issue of typology

- 3. devoicing
- This process possesses both the features of lenition understood as reduction of aerodynamics unnaturalness (adaptation to silence in the phrase final context or to a voiceless neighbor) and as reduction of complexity (voiceless stops, unlike voiced ones, do not require any action of the vocal folds/voicing)

### 3) The issue of typology

- 4. fricativization
- If fricativization is considered in isolation, it is fortition because it is the suppression of lenition. The tendency to reduce aerodynamic unnaturalness has been suppressed as it is more natural in terms of the vocal tract dynamics to produce a stop than a fricative. Fricatives are more precise than stops due to the air passage requirements ("it is easier to run into a wall than to halt an inch in front of it", source unknown, in Boersma 1990).
- If fricativization is considered intervocalically, e.g. the intervocalic stop in *siala baba (mak)* can be spirantized to adjust the opening for vowels, it is reduction of aerodynamic unnaturalness (thus, a lenition)



### 3) The issue of typology

- Speaker = ease of articulation
- Listener = clarity of perception
- Contradictory goals of the Speaker and the Listener
- The roles of the Speaker and the Listener are EQUAL

### 3) The issue of typology

- in the communication act it is the Speaker who must satisfy both his or her own needs as well as the needs of the Listener
- the Speaker, unlike the Listener, deals with pronounceability and perceptibility at the same time, bearing the entire burden of articulation

### 3) The issue of typology

- Thus, the articulatory effort is the effort of the Speaker
- So what does the Speaker do with the effort?
- Avoids and expends at the same time

### 3) The issue of typology

- Three strategies:
- Avoidance - effort is avoided by substitution of more difficult sounds or sound sequences for the easier ones
- Reduction - effort is reduced, a difficult sound is deleted
- Expenditure - effort is expended and a sound can be inserted or effort is expended in the sense that the natural tendency to lenite is suppressed (fortition)



## 4) Concluding remarks

1. Lenition reduces energy, gestural complexity or aerodynamic unnaturalness
2. Lenition is the default option for the Speaker (there are more lenition processes)
3. Fortition is a suppression of lenition
4. Phonological processes should take into account the result of a process, not its operation (lenitive effects of fortitive processes)

# 4) Concluding remarks

- Possible ways to research lenition:
  - 1) to establish the frequency of these processes
    - a) a corpus of a spoken English dialect which is remarkable for lenition (e.g. Liverpool)
    - b) to count lenition processes vs. the fortition ones
    - c) communicative situation for fortition
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  - 2) to establish all possible environments of lenition
    - a) context
    - b) position of a word
    - c) stress assignment
  - 3) to establish the correlation between the position and the context
  - 4) to examine the interaction between the lenited sounds as well as their acoustic correlates