Where is the Natural Phonology Phoneme in 2007?

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Special Session: Natural Phonology: Universal Principles for the Study of Language (Insiders meet Outsiders)

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Overview

- Introduction
- Some views of the phoneme
  - Structuralist
  - Generative
  - Cognitive Grammar
- Natural Phonology
- Conclusion
1. Introduction

— Today’s workshop focuses mainly on the relationship between NP and other phonological theories

— Except for Dziubalska-Kolaczyk's contribution, the central concept of the phoneme not discussed

— **Aim of this talk**: discuss this old concept in some phonological theories (‘outsiders’) and in NP (‘insiders’)
2. Some views on the phoneme

- Structuralist Phonology (SP) view
  - Defined by their opposition within a system

- NP’s response?
  - Contrast can be used as a discovery procedure, but does not define phonemes
  - No place for concepts like ‘archiphonemes’ in NP
2. Some views on the phoneme

- Generative Phonology (GP) view
  - For most (but not all) generative phonology, phonemes are lists of features

- NP’s response?
  - Phonemes are not 'merely' lists of features (particularly, not underspecified lists of features)
  - E.g. /i/: [V, +hi, -back] -not pronouncable. Lacks specifications for nasality, tenseness, length, etc.
2. Some views on the phoneme

- **Cognitive Grammar (CG) view**
  
  - CG holds that language is not determined by autonomous mental structures
  
  - According to CG, language processing (acquisition, storage, perception, production) follows general cognitive principles of categorization and abstraction
2. Some views on the phoneme

- Cognitive Grammar (CG) view

  - Early work on phonology within CG concentrated on storage

  - This work tried to place the phoneme into the Roschian view of categorization that assumes that categories have a radial prototype structure
2. Some views on the phoneme

- Cognitive Grammar (CG) view
  - Later work concentrated more on acquisition
  - Acquisition: through storage and processing of innumerable individual instances of production and perception
  - This work led to so-called 'usage-based' approaches/theories (exemplar-based)
2. Some views on the phoneme

- Cognitive Grammar (CG) view
  
  - Variant pronunciations...
    
    a) not derived from a common underlying form
    
    b) stored separately exactly as heard and as produced

  - Stored instances include idiosyncratic information for specific lexical items and speaker voice quality
2. Some views on the phoneme

- Cognitive Grammar (CG) view

  However, commonalities lead to the formation of ‘schemas’ (generalizations over stored individual instances)
2. Some views on the phoneme

- Cognitive Grammar (CG) view
  - Phonemes are one type of schema that play no part in perception/production

- NP’s response?
  - Speech perception and production determine NP's view of the phoneme
2. Some views on the phoneme

- Natural Phonology (NP) view
  
  Speech perception and production determine NP's view of the phoneme
2. Some views on the phoneme

- Natural Phonology (NP) view: Storage

  - NP assumes words are stored as ‘strings of phonemes’

  - A relatively small set of phonemes: the ‘solution’ to the competing demands of physical and cognitive efficiency and auditory and cognitive clarity

  - Phonemes are auditory/motor images of sounds per se, fully specified for all possible features
2. Some views on the phoneme

- **Natural Phonology (NP) view: Production**

  - Phonemes are **mental targets**: speakers aim at pronouncing the phonemes of words

  - Very rarely pronounced as stored

  - Phonemes modified either to fit their environments (lenitions) or in contrast to them (fortitions)
2. Some views on the phoneme

- Natural Phonology (NP) view: Perception

  - Phonemes are perception templates
  
  - Speakers perceive speech in terms of phonemes
  
  - Words perceived as intentions & instantaneously 'respelled' with phoneme targets as components
  
  - Perception is not mere recording of external events, but the perception of the other’s intention
2. Some views on the phoneme

“...a phoneme... is an underlying intention shared by the speaker and the listener....”

“....the shared knowledge of intentions guarantees communication between the speaker and the listener within a given language"
2. Some views on the phoneme

- Natural Phonology (NP) view: Summary
  - A mode of storage, perception, & perception
  - Auditory/motor images of sounds per se, not abstract specifications for sounds
  - Production targets/perception templates
  - Shared knowledge of intentions guarantees communication between speakers
2. Some views on the phoneme

- Natural Phonology (NP) view: Evidence

  - Speech errors do not scramble allophones but phonemes (e.g. *Scotch tape*)
  
  - Straightforward phoneme-grapheme spelling systems learned earlier than more abstract systems
  
  - No difficulty in perceiving allophones (e.g. *top-stop, leaf-feel*) as the same sound
2. Some views on the phoneme

- Natural Phonology (NP) view: Evidence:
  - Difficulty in hearing allophones (even by beginning linguistics students)
  - Sound changes seem to apply uniformly to all words containing a given relevant sound
  - Similarities between child substitutions and historical changes
3. Conclusion

- NP view: quite different from the traditional structural, generative and cognitive grammar views

- Differences with Generative Phonology

  a) GG principles are considered sui generis, and explicitly not derivable from other cognitive or social principles
3. Conclusion

— Differences with the usage-based approach

a) Active role for the speaker/hearer in the perception and production of speech

b) Principles of symmetry, efficiency and clarity thought to shape phonemes in language acquisition

c) Phonemes developed not merely as an abstraction of surface forms, but as an active construction of intentions from the surface forms
References


References


