

# Basic-level categories and image schemata in a cognitive model of phonology

Cormac Anderson

[cormacanderson@gmail.com](mailto:cormacanderson@gmail.com)

Most contemporary phonological frameworks make use of representational entities roughly commensurate to an alphabetic letter. A letter-sized unit, the segment, is used for the deep and surface representations of Generative Phonology and the input and output forms of Optimality Theory. For the structuralists, and for many researchers working in Cognitive Phonology and Natural Phonology, this relevant letter-sized unit is the phoneme. One prominent approach within Cognitive Phonology (Nathan 1996) sees phonemes as basic-level prototype structure categories in the Roschian sense (see also Lakoff 1987). This paper argues that this view results from Eurocentric bias based on widespread literacy in alphabetic writing systems. It presents an alternative model for conducting phonological analysis in a Cognitive Linguistics framework, based on the perception of acoustic cues via image schemata.

Some scholars (Nathan 2006; Fowler 2010 *inter alia*) have argued that support for the status of the phoneme as a basic-level category comes from the supposedly fundamental nature of alphabetic writing systems. However, the fundamental nature of alphabets has been convincingly challenged in the relevant literature (Daniels 1992). Indeed, looking at writing systems across the world, it could be argued that syllabic or alphasyllabic systems are more basic. Tellingly, the best example in recorded history of independent innovation of a writing system was Sequoyah's invention of the Cherokee syllabary. While phonological parsing into letter-sized chunks may seem natural and intuitive to those who are literate in an alphabetic writing system, such practice may be an instance of Eurocentric bias (Baroni 2013), based on a 'phonetic hypostatization of Roman letters' (Firth 1948).

An alternative model of Cognitive Phonology, not based on the alphabetic principle, is presented in this paper. In this model functionally relevant cues in the acoustic signal are seen as noemata, the perception of which is analogous to other objects of cognition. As such, they can be explained by means of image schemata (Johnson 1987, Hampe and Grady eds. 2005). One image schema, *PROCESS*, captures the essentially linear nature of speech sound as a series of consecutive and coordinated acoustic cues, what Saussure (1916) called the acoustic chain. A second, *PATH*, describes the non-linear identity of cues of the same sonority profile. A third, *CYCLE*, defines a canonical CV syllable within the *PROCESS*, speech thus being understood as a cyclical process of recurring acoustic events of lower and higher sonority. At the intersection of *PATH* and *CYCLE* is a given acoustic cue, understood as a domain with gradable properties and thus subject to scalar percepts (Clausner and Croft 1999).

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