

# Functional Phonology

Formalizing the interactions between articulatory and perceptual drives

In *Functional Phonology*, Paul Boersma develops a theory that seeks to explain and describe the data of the languages of the world from general capabilities of human motor behaviour and perception. By separating the roles of the articulation and the audition of speech sounds, it predicts and clarifies generalizations about the organization of human speech, and solves several outstanding controversial phonological issues.

Providing a synthesis between “phonetic” and “phonological” standpoints, the theory of functional phonology expresses explanatory functional principles like the minimization of articulatory effort and the minimization of perceptual confusion directly in a descriptive formal grammar, and offers a typologically and empirically adequate alternative to generative theories of autosegmental phonology and feature geometry. The subjects covered in this book include articulation and perception models, constraint-based accounts of phonetic implementation, the acquisition of articulatory and perceptual phonological feature values, an algorithm for learning stochastic grammars, the construction of phoneme inventories, circular optimization in sound change, and a determination of the fundamental principles that underlie the surface phenomena sometimes ascribed to the primitive phonological operations of spreading and the Obligatory Contour Principle.

This book will appeal to phonologists interested in the possibility that the grammar directly reflects common principles of efficient and effective communication, to phoneticians interested in the idea that phonetic explanations can be expressed as constraint interactions in a formal grammar, and to any linguist interested in the innateness debate.

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