

**A two-way interaction between phonetics and phonology:  
Phonetic bases of phonological processes and phonological effects on phonetic processing**

Maria Giavazzi  
(Institut d'Etudes de la Cognition, ENS; Equipe NPI)

Abstract

The existence of a direct interaction between the phonological grammar and phonetic knowledge is at the heart of phonetically-based phonological theory (Kingston & Diehl, 1994; Hayes & Steriade, 2004). There are in principle two ways in which this interaction may be instantiated. *First*, speech perception and speech production could play a role in shaping phonological patterns. *Second*, abstract phonological knowledge could affect how listeners and speakers perceive and produce sounds. In this talk I present two case studies providing evidence for both types of interactions.

First, I show that the phonological distribution of segmental contrasts may be influenced by phonetic aspects of word-level prosodic prominence (stress). This influence is presented through the experimental investigation of Finnish assibilation (i.e. the process turning [ti] sequences into [si] sequences).

The second study investigates the flip side of this interaction, namely the role of abstract phonological knowledge in shaping listeners' perception of speech sounds. I show that very early on during speech perception, listeners compensate for phonological rules of their native language, such as assimilation. This allows them to retrieve the underlying sounds intended by the speaker. These early compensation mechanisms are presented through the experimental investigation of French voicing assimilation.

I discuss ways to handle this interaction in phonological theory, which include incorporating phonetic information in the grammar, as well as the implications (advantages and issues) of this move.