

## "Speech perception: psychoacoustic, productive and linguistic factors"

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### Summary

A fundamental question in the study of speech is about the *invariance* of the ultimate percepts, or *features*. The first question raised by the invariance problem is about the *origin* of the percepts: to know to which extent they are innate or acquired. A second question is about the *nature* of the percepts: to know whether they are represented in an auditory or linguistic way. The origin and nature of the percepts are two fairly independently questions and speech perception theories can be subdivided into four classes, depending on whether invariance is conceived with or without major contribution from learning and whether it is based on auditory or linguistic representations. After considering the most elaborated theories in each class (Serniclaes, 2000), I will examine recent experimental data which go in support to: (1) the composite structure of the adult percepts, which find their origin in language specific couplings between universal predispositions (Serniclaes et al., 2003); (2) the specifically linguistic nature of the neural representation of speech categories, which is linked to the sensory representation of the mouth and might be related to the processing of auditory spatial information (Dehaene et al., in revision). The implications of these findings for the development of both spoken and written language (Serniclaes et al., 2004), and for the correspondence between speech perception and production, will then be contemplated. My conclusion will be that the fitting of phonetic predispositions to the phonological framework of a given language plays a critical role in the genesis of perceptual invariance, that it implies considerable qualitative changes in the course of perceptual development and might crucially depend on a spatial representation of the vocal tract .

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