

Face to Face Communication Using Cued Speech

Denis Beautemps

Speech and Cognition Department, GIPSA-lab, Grenoble
France

`Denis.Beautemps@gipsa-lab.inpg.fr`

Cued Speech (CS) is a visual communication system that uses handshapes placed in different positions near the face in combination with natural speech lip-reading to enhance speech perception from visual input. Firstly, CS is improving speech perception to a large extent for deaf people (Nicholls, 1979; Nicholls & Ling, 1982 for the identification of the syllables, Uchanski *et al.*, 1994 for the identification of sentences, scores between 78 and 97 %). Secondly, CS offers a complete representation of the phonological system for deaf people exposed to this method since their youth, and therefore has a positive impact on the language development (Leybaert, 2000). CS is a system that conveys speech in a face-to-face communication, using two complementary components of the visual modality. Thus, we will illustrate how the CS manual component is complementary to the lip shapes (Beautemps, 2007; Aboutabit, Beautemps & Besacier, to appear; Sacher, Beautemps, Cathiard, Aboutabit, 2008). Then, on the basis of the production and perception of the CS of deaf and normal-hearing cue speakers, we will see that the manual component is not temporally synchronized with the lips and that against any waiting the hand is globally in advance on the lips (Attina, Beautemps, Cathiard, 2004; Aboutabit, Beautemps & Besacier, 2006; Sacher, Beautemps, Cathiard, Aboutabit, 2008). We will discuss this result with respect to the hypothesis of compatibility of the controls within the framework of the speech motor control theory. Finally, we will demonstrate how these important results impact the different levels of modelling used for CS applications (Beautemps, *et al.*, 2007).