

Syllable Production in Cued Speech

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This study examines the cognitive processes underlying the syllable production in Cued Speech (CS). CS is a relatively new mode of communication among deaf people that has been introduced three decades ago (Cornett, 1967). In speech reading, that is, without hearing the sounds, many syllables remain ambiguous due to their similar articulatory movements. For example, the labial consonants in /ba/ and /ma/ or the lip rounding of the vowels in /tu/ and /to/ cannot be differentiated. Hence, in CS, hand gestures and hand positions are used to disambiguate syllables. The Spanish ‘transparent’ phonological code (5 vocalic sounds, 25 consonantal and semi-vocalic sounds) is particularly suitable for the syllabic gestures of CS.

Several studies have illustrated that CS facilitates the acquisition of phonology in deaf children. For example, deaf children exposed early to CS have been found to develop phonological representations and thus also grapheme-to-phoneme mappings or rhyming skills similar to those of hearing children (e.g., Alegria, Charlier, & Mattys, 1999; Charlier & Leybart, 2000; LaSasso, Crain, & Leybart, 2003; Leybart, 2000).

In contrast, to the speech of hearing individuals who combine auditory and visual speech percepts, in CS, cued signs and speech reading are both visually perceived. The question, thus, is how both ‘modes’ of information are integrated to yield a single percept.

The aim of the present study is to examine whether the production of the syllable in Spanish CS corresponds to that in hearing speech, where high-frequency syllables are produced faster than low-frequency syllables (Carreiras & Perea, 2004; Perea & Carreiras, 1995), indicating that syllables are stored entities.

We recorded the production of high- and low-frequency words with high or low frequency syllables in two CS speakers. Syllable structures were CV-CV and CV-CVC. For each word, both the onset of the hand configuration that signifies a consonant (e.g., /f/) and the hand gesture that signifies the whole syllable (e.g., /fi/) were measured. The production times for these two measures are analyzed and compared with the production times in hearing speech.

Given that CS and hearing syllables are produced in different modalities, this comparison provides insight into the underlying cognitive processes of syllable production.

References

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