



Research Findings Regarding Cued Speech



Originally selected by Elaine Dunn Engel, PhD (1994), revised and amended by Pamela Beck, MS (1997-2004).

Revised and amended by Polly Earl, EdD with additions from Kelly Crain, PhD (2019).

Copyright, NCSA 2019

Auditory Neuropathy

Arnold, M.L. & Berlin, C.I. (2010). Children with auditory neuropathy/auditory dys-synchrony: The value of Cued Speech in the face of an uncertain language development trajectory. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

Bilingualism

Earl, P. (2006). Communication behaviors of a young child with auditory dys-synchrony: Seeing Cued Dutch and Cued Spanish. Doctoral dissertation, University of Cincinnati. *Child with auditory neuropathy simultaneously exposed to two cued languages at age 8 months developed receptive language similar to hearing children by 18 months.*

Kyllo, K. (2010). A bilingual (ASL and Cued American English) program for deaf and hard of hearing students: Theory to practice. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

LaSasso, C.J. & Metzger, M.A. (1998). An alternate route for preparing deaf children for bi-bi programs: The home language as L1 and Cued Speech for conveying traditionally spoken languages. *Journal of Deaf Studies and Deaf Education*, 3, 264-289. *A review of language acquisition, reading and communication systems used with deaf children shows the empirical base for using the parents' language, conveyed via Cued Speech, as the deaf child's first language.*

Cochlear Implants

Bouton, S., Bertoncini, J., Serniclaes, W. & Cole, P. (2011). Reading and reading-related skills in children using cochlear implants: Prospects for the influence of Cued Speech. *Journal of Deaf Studies and Deaf Education*, 16, 458-73.

Colin, S., Ecalle, J., Truy, E., Lina-Granade, G. & Magnan, A. (2017). Effect of age at cochlear implantation and at exposure to Cued Speech on literacy skills in deaf children. *Research in Developmental Disabilities*, 71, 61-69.

Leybaert, J., Bayard, C., Colin, C., & LaSasso, C. (2015). Cued Speech and Cochlear Implants: A powerful combination for natural spoken language acquisition and the development of reading. In M. Marschark, and P. Spencer (Eds.), Oxford Handbook of Deaf Studies in Language.

Le Normand, M. & Moreno-Torres, I. (2014). The role of linguistic and environmental factors on grammatical development in French children with cochlear implants. *Lingua*, 139, 26-38.

Moreno-Torres, I. & Torres, S. (2008). From 1-word to 2-words with cochlear implant and Cued Speech: A case study. *Clinical Linguistics and Phonetics*, 22, 491-508.

Osberger, M. (1997). Current issues in cochlear implants in children. *The Hearing Review*, 28-31. *Children's use of CS prior to cochlear implantation has a significant positive effect on ability to benefit from the implant.*

Rees, R. & Bladel, J. (2013). Effects of English Cued Speech on speech perception, phonological awareness and literacy: A case study of a 9-year-old deaf boy using a cochlear implant. *Deafness and Education International*, 15, 4, 182-200. *Non-word spelling performance increased from 50% in the Auditory-Verbal condition to 100% in the Auditory-Verbal + CS condition.*

Vieu, A., Mondain, M., Blanchard, K., Sillon, M., Reuillard-Artieres, F., & Tobey, E. (1998). Influence of communication mode on speech intelligibility and syntactic structure of sentences in profoundly hearing-impaired French children implanted between 5 and 9 years of age. *International Journal of Pediatric Otorhinolaryngology*, 44, 15-22. *CS group showed more advanced syntax than oral and signing groups; CS and oral groups outperformed signing group in word intelligibility and language complexity by end of 3 years.*

Cued Language Transliterators

Krause, J., Kegl, J., & Schick, B. (2008). Toward Extending the Educational Interpreter Performance Assessment to Cued Speech. *Journal of Deaf Studies and Deaf Education*, 13, 3, 432-450.

Krause, J. & Lopez, K. (2017). Cued Speech Transliteration: Effects of Accuracy and Lag Time on Message Intelligibility. *Journal of Deaf Studies and Deaf Education*, 22, 4, 378-392.

Krause, J., Schick, B. & Kegl, J. (2010). A version of the educational interpreter performance assessment for Cued Speech transliterators: Prospects and significance. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

Krause, J. & Tessler, M. (2016). Cued Speech Transliteration: Effects of speaking rate and lag time on production accuracy. *Journal of Deaf Studies and Deaf Education*, 21,4, 373-382.

Language Acquisition

Berendt, H. Krupnik-Goldman, B. & Rupp, K. (1990). Receptive and expressive language abilities of hearing-impaired children who use Cued Speech. Master's thesis, Colorado State University, Fort Collins, CO. *CS learners with severe to profound hearing levels scored as well as hearing children using the Developmental Sentence Score (DSS) for expressive language. Children introduced to CS before age 2 scored significantly better than those who began later.*

Cornett, R.O. (1967). Cued Speech. *American Annals of the Deaf*, 112, 2-13.

(NOTE: This is the first article ever published explaining the creation and benefits of Cued Speech.)

Crain, K.L. (2010). Early language development of deaf twins of deaf parents who are native users of English. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

Hage, C., & Leybaert, J. (2006). The effect of Cued Speech on the development of spoken language. In P. E. Spencer & M. Marschark (Eds.), Advances in the spoken language development of deaf and hard-of-hearing children (pp. 193-211). New York, NY: Oxford

University Press.

Kipila, B. (1985) Analysis of an oral language sample from a prelingually deaf child's Cued Speech: A Case Study. *Cued Speech Annual*, 1, 46-59. *CS enabled oral expressive language to develop well in a five-year-old prelingually profoundly deaf child even though the child's speech was unintelligible.*

Leybaert, J., Colin, S. & LaSasso, C. (2010). Cued Speech for reading: Theory and research. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language development for deaf and hard of hearing children (pp.245-284). San Diego, CA: Plural Publishing, Inc.

Moreno-Torres, I. & Monreal, S. (2010). Early linguistic input received by a deaf child exposed to la palabra complementada during the pre-linguistic period. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

Morere, D. (2010). Applications of Cued Speech with deaf children with additional disabilities affecting language development. LaSasso, C. & Crain, K.L. Cued language for the development of deaf students' reading comprehension and measured reading comprehension. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language for deaf and hard of hearing children. San Diego, CA: Plural Publishing, Inc.

Movallali, G., Afrooz, G., Hassan-Zadeh, S., Malakooti, B. (2010). Evaluation of the effects of Persian Cued Speech practice upon speech discrimination scores of hearing-impaired children. *Audiology* 19, 39-46.

Peterson, M. (1991) Data on Language of profoundly deaf children with oral, signing and Cued Speech backgrounds. In R. Cornett & M. Daisey (Eds.), The Cued Speech Resource Book. Raleigh, NC: National Cued Speech Association. *Children who are profoundly deaf and use Cued Speech surpass the majority of signing and oral children in verbal language skills.*

Linguistics

Fleetwood, E. & Metzger, M. (1998). Cued language structure: An analysis of cued American English based on linguistic principles. Silver Spring, MD: Calliope Press.

Literacy

Alegria, J., Dejean, C., Capouillez, J. M., & Leybaert, J. (1990). Role Played by the Cued Speech in the Identification of Written Words Encountered for the First Time by Deaf Children. *Cued Speech Journal*, 4. *CS develops, in a deaf child, an internal phonological model of the spoken language that can prime the whole process of reading acquisition.*

Colin, S., Leybaert, J., Ecalle, J. & Magnan, A. (2013). The development of word recognition, sentence comprehension, word spelling, and vocabulary in children with deafness: A longitudinal study. *Journal of Research in Disabilities*, 34, 1781-1793. *Early exposure to CS seems to permit the development of linguistic skills necessary for learning the alphabetic principle, which is fundamental for learning to read and spell.*

Crain, K. (2003). The development of phonological awareness in moderately-profoundly deaf developing readers: The effect of exposure to cued American English. Unpublished doctoral dissertation. Gallaudet University, Washington, DC. *Children exposed to CS demonstrated rhyme judgement and rhyme generation abilities similar to hearing peers.*

Ketchum, K. (2001). Implications of working memory strategies in deaf native cuers, hearing cuers, and hearing non-cuers. Unpublished doctoral dissertation. Gallaudet University, Washington, DC. *Deaf native cuers' recall ability for printed word lists matched or surpassed that of hearing participants, and hearing and deaf groups demonstrated a phonological similarity effect for printed words.*

LaSasso, C. & Crain, K. (2015). Reading for deaf and hearing readers: Qualitatively and/or quantitatively same or different? A nature versus nurture issue. *American Annals of the Deaf*, 159, 5, 447-467. *Of the available communication systems for conveying English conversationally (oral-aural methods, Manually Coded English sign systems, Cued Speech), only Cued Speech is structurally capable of affording clear, complete visual access to English.*

LaSasso, C., & Crain, K. (2010). Cued language for the development of reading comprehension. In C. LaSasso, K. Crain, and J. Leybaert (Eds.), Cued Speech and cued language development for deaf and hard of hearing children (pp.486-459). San Diego, CA: Plural Publishing, Inc.

LaSasso, C., Crain, K.L., & Leybaert, J. (2003). Rhyme generation in deaf students: The effect of exposure to Cued Speech. *Journal of Deaf Studies and Deaf Education*, 8, 250-270. *Deaf cuers performed similarly to hearing students in relying on phonology to generate rhymes. Deaf non-cuers performed less well, relying on spelling.*

Leybaert, J. & Charlier, B. (1996). Visual speech in the head: The effect of Cued Speech on rhyming, remembering, and spelling. *Journal of Deaf Studies and Deaf Education*, 1,4, 234-248. *Deaf children exposed to CS at home at an early age rely on inner speech for rhyming, remembering, and spelling similarly to hearing children but differently from deaf children not exposed early to CS.*

Ling, D. & Clarke, B.R. (1975). Cued Speech: An evaluative study. *American Annals of the Deaf*, 120, 5, 480-488. *Children who are deaf and who cue showed an increase in perception, recoding, and recalling information presented via cueing, as opposed to speech alone.*

Pouryan, A., Movallali, G., Zarifian, T., & Ahmadi, S. (2019). Effect of Cued Speech on Improving the Accuracy and Understanding of Reading in First Grade Students who are Profoundly Deaf. *Journal of Rehab Medicine*, 8,2,80-85.

Trezek, B. (2017). Cued Speech and the Development of Reading in English: Examining the Evidence. *Journal of Deaf Studies and Deaf Education*, 22,4, 349-364. *Review of CS studies examining the literacy abilities (reading, spelling) of children who are deaf and hard of hearing in cued English and cued French.*

Wandel, J. (1989). Use of internal speech in reading by hearing and hearing-impaired students in oral, total communication, and Cued Speech programs. Doctoral dissertation, Teacher's College, Columbia University, New York. *In comparing TC, Oral, CS, and Hearing students in reading achievement as measured on the SAT, there was no statistical difference in achievement between hearing students and the profoundly deaf users of CS.*

Speechreading and Visual Speech Perception

Clarke, G. & Ling, D. (1976). The effects of using Cued Speech: A follow-up study. *The Volta Review*, 78, 23-24.

Clarke, G. & Ling, D. (1982). Cued Speech and the reception of spoken language. *Journal of Speech and Hearing Research*, 25, 262-269.

Nicholls, G. (1979). Cued Speech and the reception of spoken language. Master's thesis, McGill University, Montreal. *Cued Speech was clearly and accurately readable, without sound, by deaf students with several years of cueing experience.*

Portolano, M. (2008). Cued American English: A Variety in the Visual Mode. *World Englishes*, 27, 2, 196-216, May.

Quenin, C. (1992). Tracking of connected discourse by deaf college students who use Cued Speech. Doctoral dissertation, Penn State University. *Deaf CS users demonstrated highly accurate and efficient reception of passages cued to them as compared with speechreading without cues. This was the first study of the reception of connected discourse with CS.*

Neuroimaging

Aparicio, M.; Peigneux, P.; Charlier, B.; Baleriaux, D.; Kavec, M.; Leybaert, J. (2017). The neural basis of speech perception through lipreading and manual cues: Evidence from deaf native users of Cued Speech. *Frontiers in Psychology*, 8, 1–23. *The first neuroimaging data for perception of Cued Speech (CS) by deaf adults, who are native users of CS, suggests a common brain system for spoken languages, regardless of sensory input modality. Results suggest the brain region associated with visual motion processing influences integration of hand and mouth movement, and manual cues may dominate in speech perception of deaf native users.* <https://www.ncbi.nlm.nih.gov/pubmed/28424636>

*For more information about Cued Speech
and cued languages contact:*

National Cued Speech Association

www.cuedspeech.org

800-459-3529

info@cuedspeech.org