Research Findings Regarding Cued Speech

Originally selected by Elaine Dunn Engel, Ph.D. (1994); revised and amended by P.H. Beck (1997-2004).

Auditory Discrimination

CS is a useful training strategy in phonetics courses.

- Beaupre, W.J. (1976) "Cued Speech as a Training Strategy in Phonetics Courses" (Abstract) Folia Phoniatrica, 28, 203.

- Beaupre, W.J. (1977) "Cued Speech as a Training Strategy in Phonetics Courses." International Association of Logopedics Congress Proceedings, 2, 35-41.

CS can help foreign dialect students to improve their abilities to discriminate English vowels auditorily.

- Chapman, I.M. (1984) The Effects of Cued Speech on the Auditory Discrimination of English Vowels by Hearing Chinese Speakers. Master's thesis, University of Mississippi.

CS improved the use of audition and did not divert the auditory attention of deaf children.

- Charlier, B. L. & Paulissen, D. (1986) "Audiometric Vocale et Language Parle Complete (L.P.C.)" [Speech Audiometry and Cued Speech] Otica, 10, 19.

Visual Speech Reception

CS users have nearly-perfect reception of everyday connected speech materials. Audio-visual integration models suggest that CS users may be able to receive up to 80% of consonant-vowel syllables with automatic cues from current speech recognition computer programs.

- Uchanski, R.M., Delhorne, L.A., Dix, A.K., Reed, C.M., Braida, L.D., and Durlach, N.I. (1994) "Automatic Speech Recognition to Aid the Hearing Impaired: Current Prospects for the Automatic Generation of Cued Speech." Journal of Rehabilitation Research and Development, Vol. 31, pp. 20-41.

CS is clearly and accurately readable, without sound, by deaf students with several years of CS experience.

- Nicholls, G. (1979) "Cued Speech and the Reception of Spoken Language." Master's thesis, McGill University, Montreal. (Available from NCSA/Cued Speech Discovery bookstore.)

- Nicholls, G. & Ling, D. (1982) "Cued Speech and the Reception of Spoken Language." Journal of Speech and Hearing Research, 25, 262-269.

Speechreading

CS improves the speechreading capabilities of profoundly deaf students.

- Clarke, B. & Ling, D. (1976) "The Effects of Using Cued Speech: A Follow-up Study" The Volta Review, 78, 23-24.

CS instruction improved the speechreading ability of hearing subjects.

- Chilson, R. F. (1979) "Effects of Cued Speech on Lipreading Ability." Master's thesis, University of Rhode Island.

- Neef, N. & Iwata, B. (1985) "The Development of Generative Lipreading Skills in Deaf Persons Using Cued Speech." in Analysis and Intervention in Developmental Disabilities, Vol. 5, pp. 289-305.

CS significantly improved speechreading abilities of prelingually deaf persons. This study analyzed the process.

- Kaplan, H. (1974) "The effects of Cued Speech on the speechreading ability of the deaf." Doctoral dissertation, University of Maryland.

Receptive Language

CS helps hearing impaired children to comprehend discourse.

- Musgrove, G. N. (1985) "Discourse comprehension by hearing-impaired children who use Cued Speech." Doctoral dissertation, McGill University, Montreal.

CS enables deaf children to understand spoken language better than with lipreading alone. With parents cueing, the gain is greater than with cueing only at school. Greatest gain is with cueing both at home and at school.

- Perrier, O., Charlier, B., Hage, C., & Alegria, J. (1987) "Evaluation of the Effects of Prolonged Cued Speech Practice upon the Reception of Spoken Language." In I. G. Taylor (Ed.) "The Education of the Deaf -- Current Perspectives," Vol. 1, 1985 International Congress on Education of the Deaf. Beckenham, Kent, UK: Croom Helm Ltd. (Reprinted in the Cued Speech Journal, 4, 1990)

• Hage, C., Alegria, J., & Perier, O. (1989, July) "Cued Speech and Language Acquisition" Paper presented at the Second International Symposium on Cognition, Education and Deafness, Washington, D.C. (Reprinted in The Cued Speech Journal, 4, 1990)

CS learners with severe to profound losses averaged better than 92% of hearing impaired children on the Rhode Island Test of Language Structure (RITLS) for receptive language.

• 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.

Expressive Language

CS learners with severe to profound hearing losses 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.

• 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 enables oral expressive language to develop well in a five-year-old prelingually profoundly deaf child even though his speech was unintelligible.

• 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 profoundly deaf children surpass the majority of signing and oral children in verbal language skills.

• Peterson, M. (1991) Data on Language of profoundly deaf children with oral, signing and Cued Speech backgrounds. Data supplied by correspondence to R.O. Cornett and summarized in Cornett & Daisey "The Cued Speech Resource Book" (pp 697-699)1992. National Cued Speech Association, Raleigh, NC.

CS / Bilingualism

CS improves spoken language acquisition when combined with manual communication of young deaf children.

• Perrier, O., Bochner-Wuidar, A., Everarts, B., & Michiels, J., (1986) "The Combination of Cued Speech and Signed French to Improve Spoken Language Acquisition by Young Deaf Children." in B. Tervoort (Ed.) "Signs of Life: Proceedings of the Second European Congress on Sign Language Re-search (pp. 194-199) Amsterdam. Reprinted in the Cued Speech Journal, 4, 1990.

CS with signed French triggers speech.

• Perrier, O. (1987, October) "The Psycholinguistic Integration of Signed French and Cued Speech: How can Speech Components be Triggered?" Paper presented at the Symposium on Oral Skills and Total Communication, Gent, Belgium. (Reprinted in the Cued Speech Journal, 4, 1990)

A review of language acquisition, reading and communication systems used with deaf children shows the empirical base for using the parents' language, conveyed via CS, as the deaf child's first language.

• LaSasso, C. & M. Metzger. (1998, Fall) "An Alternate Route for Preparing Deaf Children for BiBi Programs: the Home Language as L1 and Cued Speech for Conveying Traditionally Spoken Languages." J of Deaf Studies & Deaf Education 3:4, pp. 265-289.

CS helps hearing and deaf college students learn Spanish and French.

• Bement, L. & C. Quenin. ((1998) "Cued Speech as a Practical Approach to Teaching Spanish to Deaf and Hard of Hearing Foreign Language Students." Cued Speech Journal, Vol. 6, pp. 40-56.

• Clark, C. & J. Sacken. (1998) "French Cued Speech: Teaching French in a Mainstreamed College Classroom." Cued Speech Journal, Vol. 6, pp. 57-70.

CS / Deaf-Blind

CS manual cues, supplementing the Tadoma method, may result in improved speech reception for the deaf-blind.

• Reed, Rabinowitz, Durlack, et. al. (1992) "Analytic Study of the Tadoma Method: Improving Performance Through the Use of Supplementary Tactual Displays" Journal of Speech and Hearing Research, Vol. 35, 450-465, April 1992.

Reading

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. Among those with a less-severe loss (85-100 dB), no communication group achieved equivalent to hearing students. These cuers may have received less exposure to CS.

• Wandel, Jean E. (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.

CS develops, in a deaf child, an internal phonological model of the spoken language that can prime the whole process of reading acquisition.

• Alegria, J., Dejean, C., Capouillez, J. M., & Leybaert, J. (1989, May) "Role Played by the Cued Speech in the Identification of Written Words Encountered for the First Time by Deaf Children." Presented at the annual meeting of the Belgian Psychological Society, Louvain-la-Neuve. (Reprinted in the Cued Speech Journal, 4, 1990)

CS improves reading and this paper analyzes how and why it does.

• Alegria, J., Lechat, J. & Leybaert, J. (1988) "Role du LPC dans L'Identification de Mots chez L'Enfant Sourd: Theorie et donnees preliminaires" [Role of Cued Speech in the Identification of Words in the Deaf Child: Theory and Preliminary Data]. Glossa, 9, 36-44. (Reprinted in the Cued Speech Journal, 4, 1990)

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.

• 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, Vol. 1, #4, pp. 234-248.

Deaf cuers use a phonological loop, based in the phonological components of CS, as an efficient system to support language processing.

• Lechat, J. & Leybaert, J. (2001) "Phonological Effects in Memory for Serial Order of Cued Speech." Journal of Speech Language and Hearing Research, Vol. 44, #5, pp. 949-963.

Deaf cuers performed similarly to hearing students in relying on phonology to generate rhymes. Deaf non-cuers performed less well, relying on spelling.
LaSasso, C., Crain, K. & Leybaert, J. (2003) "Rhyme Generation in Deaf Students: The Effect of Exposure to Cued Speech." J of Deaf Studies & Deaf Education, 8(3), pp. 250-270.

CS/ Cochlear Implants

Children's use of CS prior to cochlear implantation has a significant positive effect on ability to benefit from the implant.

• Osberger, M.J. "Current Issues in Cochlear Implants in Children." (1997, October) The Hearing Review, pp. 28-31.

Visual phonological comprehension of language with CS aids auditory comprehension after implantation.

• Descourtieux, C., V. Groh, A. Rusterholtz, I. Simoulin, D. Busquet. "Cued Speech in the Stimulation of Communication: An Advantage in Cochlear Implantation." Presented at the Lyon Conference on Language Development in CI Children, December 8, 1996.

Implanted children educated with CS have better speech intelligibility with correct syntax than children habilitated with oral or gestural means only.

• Reported by C. Coleon (1997) in "The Lyon Conference on Language Development in CI Children". CICI Contact, Winter/Spring 1997, pp. 38-41.

General

CS issues covered in detail with references and case studies.

• Cornett, R. O. & Daisey, M. E. "The Cued Speech Resource Book for Parents of Deaf Children." (1992, 2000) The National Cued Speech Association, Inc., 1-800-459-3529.

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