A Family with Cochlear Implants and Cued Speech
by Marcia Beveridge

Why does our family cue with our two preschool-age sons who use cochlear implants? We frequently field this question from both the general public and certain professionals who serve the deaf and hard of hearing. Those aware only of signed language as a visual communication option are trying to reconcile what seems to be a contradiction: we are “signing” to children that seem to hear just fine. Their question sometimes reflects nervousness, as they worry that they will be unable to communicate unless they can “do that hand thing” also. When asked by professionals of the auditory-verbal persuasion, the question is usually tinged with disappointment, as most of them regard anything visual in communication with the hard of hearing as a “crutch” that creates dependence. Both Cued Speech and cochlear implants are necessary to provide our children complete access to receptive and expressive spoken language: together they make every word count. We try to convey to the general public that Cued Speech, unlike American Sign Language, makes spoken language clear and completely accessible. (“It clarifies lipreading” is the one-liner that we usually say in the grocery store, etc., and is generally followed by a relieved expression on the part of the questioner who now feels that they can talk and be

Cued Speech for Enhancing Speech Perception of Individuals with Cochlear Implants
by Jacqueline Leybaert, Cécile Colin, & Catherine Hage

Editor’s Note: A preview of Cued Speech and Cued Language for Deaf and Hard of Hearing Children includes a chapter on Cued Speech and Cochlear Implants.

Introduction
This volume documents how deaf children who have been provided with Cued Speech successfully use language representations in major cognitive activities like reading, spelling, remembering, and rhyming without auditory input. The main source of improvement in these cognitive skills is the advantage provided by Cued Speech for speech perception which leads to the natural acquisition of English and other traditionally-spoken languages.

In one of the first studies addressing the issue of spoken language perception, Nicholls and Ling (1982) studied a group of Australian profoundly deaf children educated with Cued Speech at school with for at least three years. They found that speech reception scores of these children increased from about 30 percent for both syllables and words in the lipreading condition to more than 80 percent in the lipreading + cues condition. They emphasized that the children’s average scores in the lipreading + cues condition were within the range of normal hearing listeners’ reception scores of similar material from audition.

Périer, Charlier, Hage and Alegria (1988) studied the advantage provided by the addition of cues to French sentence comprehension. They found an increase from 39 percent correct responses in the lipreading condition to 72 percent in the lipreading + cues condition.
President’s Message
Communication, Collaboration and Community
by Josh Libby

Going into the new year, I have been reviewing my year of service and attempting to take stock of our organization’s immediate and long-term goals. One thing that seems particularly essential is an increased emphasis on communication and collaboration, which includes using new social media and networking tools. In the past year, it has become easier to communicate and exchange ideas with our constituency, the deaf and hard of hearing community, other groups and the world at large. I invite all of you to join me as we move forward into the next decade.

I am excited by this issue of On Cue. We felt it important to talk about the role of Cued Speech and cochlear implants, not just with children, but also with native cuers who received implants as adults. Cochlear implants and Cued Speech complement each other so well and my wish is to proceed toward a greater public recognition and acceptance of Cued Speech by the cochlear implant, medical and educational fields.

In November, Google announced a new and promising feature: automated captioning of many of the millions of YouTube videos. We are also proud to say that HR3101, the Web Accessibility bill, is being advanced through Congress. The Coalition of Organizations for Accessibility and Technology (COAT), of which we are an affiliate, has worked hard to champion this bill.

Our precedents wielded the mighty pen and paper, typewriter, and word processing software. In addition to those tools, we now have the power of Web 2.0 and Internet social marketing tools that include Facebook, Twitter, LinkedIn, and more.

We have strengthened relationships with our respective partners in COAT and Deaf and Hard of Hearing Alliance (DHIAH), as well as within our own community, with an eye towards developing further collaboration with other non-profit organizations that focus on the scope of deafness, language development, and more.

I am also truly impressed by our newest vehicle of collaboration and outreach, which was developed and championed by Maria Gildea. Our inaugural Read-a-thon, held during October, was a smashing success! We are proud of our new program, and we intend to use it to help spread the word. I would like to thank those that went above and beyond to make our inaugural Read-a-thon possible: Maria Gildea, Robert McIntosh, Esther Rimer, and Chris Parisi of TurfDawgs; authors Jean Craighead George, Henry Kisor, David Lee, Laura Numeroff, and J. Parrish Lewis; our spokesperson Paul Rahill; and, last but not least, the schools that invited us into their classrooms! Thank you for all your work and support!

I would love to hear from you if you have any thoughts or suggestions for future Read-a-thon incentives. Please contact me at jlibby@cuedspeech.org.

On another note, one way that the NCSA honors Dr. R. Orin Cornett and Carol Sheider is through scholarships for students in post-secondary education. If you are a college student or know someone who is currently or will begin post-secondary studies, be sure to go to the NCSA’s web site to find those scholarship applications. Past scholarship winners have demonstrated the desire to contribute to the Cued Speech community through advocacy, leadership and sharing their experience with the public.

Your donations to the NCSA ensure that programs such as the Cornett and Schuler scholarships continue to support individuals who use Cued Speech as their primary mode of communication both at home and in the classroom. One way NCSA members can contribute to the Cued Speech community is through participation in research and pilot studies. Such a pilot study is taking place right now at the University of South Florida. Experienced cuers can submit videos of themselves cueing and receive a one-year membership to the NCSA. Those cuers also can get the satisfaction that they are helping develop ways to rate cuers in various aspects including accuracy, clarity, and speed.

On Cue Staff
Editor-in-Chief: Aaron Rose
Layout Editor: Mary-Beth Robie
Assistant Editor: Hilary Franklin
Reporters: Zainab Alkebsi, Esther Rimer & Sarah Segal

We are currently looking for people to serve as correspondents and photographers. If you would like to contribute to On Cue, please contact us at oncue@cuedspeech.org.

Pilot Version of New Cued Speech Screening Tool Released: Participants Needed

December 16, 2009 – The National Cued Speech Association (NCSA) is pleased to announce the pilot version of a new Cued Speech screening tool designed to assess conversational cueing skills. Developed at the University of South Florida under the direction of Dr. Jean Krause, the screening tool evaluates how well a cue is understood when cueing continuously for 25-30 minutes. Assessments include prosody, accuracy, clarity, and speed as well as non-conversational prompts. Classroom teachers, parents, translators, and any other Deaf or hearing cuers comfortable cueing at the conversational level are encouraged to participate in pilot testing. Interested individuals are expected to have experience cueing at a conversational level and should be able to cue for an extended period of time.

Interested in Participating?
Contact Morgan Tessler
Email: mtessler@mail.usf.edu
Phone: 813.731.1858

CFC # 12036
Make a donation to the NCSA’s Deaf Children’s Literacy Project through the Combined Federal Campaign today!

Championing effective communication, language acquisition and literacy through the use of Cued Speech.
Championing effective communication, language acquisition and literacy through the use of Cued Speech.

picture of spoken language that Cued Speech provides is the way to true independence in the hearing world.

Using Cued Speech makes every word count by allowing us to maintain communication when the implant technology cannot be used and in difficult listening situations. We almost daily avert disasters in the bathtub (and other watery environments) with clear, fluent communication.

A dramatic example of the value of having a way to communicate visually came when we evacuated our home, which was in the path of a wildfire. We left the house with the clothes we had on our backs; the battery chargers had to be left behind. When the batteries died that evening, our deaf children calmed down immediately following our cued discussions of the strange surroundings.

Restaurants and other noisy surroundings do not give us concern that they will be left out of conversation. One of our favorite memories is that of a meal in a Greek restaurant packed with chatty diners. When we cued across the table to our 3-year-old that he was eating “laudia” (a dessert he was trying for the first time), he sternly informed us, repeating the word with perfect clarity, “It’s not laudia, it’s banana bread.”

But we not only cue in situations when the implant must be off or when we know it is a difficult listening environment. In fact, we not only cue directly to them, we try to cue everything they hear—from conversations, discussions between hearing family members—and we try to keep expanding our cued skills. We are fighting for classroom transliterators and we persuade teachers to learn the system. Why would a family with so much to juggle make this a priority?

Cued Speech enables our children to make the most of their cochlear implants. They are enabled not only to respond to clear direct communication, but also to gain language through overhearing—the way children learn language best and the way technology has yet to truly succeed in making that accessible. Their brains are constantly triangulating sounds, especially speech that is not visually clarified, using context to fill in what was misheard or not heard. This process requires solid knowledge of the language being used.

For example, a cued therapist was reading a book to one of the boys one day. While he gazed at the page, she said “Look, a zebra. Black and white stripes.” He repeated, “Glass and white?” When she had him look at her hand, she cued “Black and white.” He got it immediately, repeating “Black and white.” The next time he hears what seems to be “glass and white,” his brain will go through an unconscious process “this is what I heard, but we’re talking about colors, so it must be “black and white.”” How much more important is it for a language learner to have clear access to vocabulary, syntax, and grammar?

One answer to that question came a few months ago during testing for our son who is preparing to enter school. The day after he had had auditory comprehension testing, on which he was correctly repeating back about 90 percent of the speech pathologist’s sentences, he had an audiogram. Despite pure-tone thresholds in the mild hearing loss range across all frequencies for both his implants, the audiologists’ speech perception testing revealed the true challenge our son is faced with when left to learn language through auditory means alone. He made numerous discrimination errors of the glass/black type, perceiving with complete clarity 70 percent, at best, of the words he heard. Our suspicion was confirmed: the input from cochlear implants alone is inadequate for complete, clear, facile language learning. How do they bridge the gap from 70 percent single-word perception to 90 percent correct sentence repetition?

The solid knowledge of language he has gained through Cued Speech, on par with hearing children his age, allows him to use context to correctly fill in the unheard or misheard words in a sentence, which is why the general public does not have to do “that hand thing” in order to communicate.

However, at home and in the classroom, those of us responsible for presenting spoken language must present it as clearly as we would to a child with full hearing. Cuing is the most natural way to do this for spoken language, the only way for the preliterate child.

Since cues had good access to language long before cochlear implants were in the picture, how do the implants help make every word count? It still seems miraculous that our profoundly deaf child can holter from behind a closed door, “Go get my scissors!” and his brother with a severe hearing loss will answer, “OK, I’m going upstairs for scissors!”

There are times when we have to fall back on auditory-only means of communication. Sometimes directions (“Stop!”) must be given with utmost speed to allow bodily integrity to be maintained (“His fingers are in the door!”). Visual contact can be difficult to obtain or maintain with small people who are constantly on the go. At times it is difficult, if not impossible, for grownups to free a hand: southern California traffic can require two white-knuckled hands on the wheel. In those circumstances we are grateful for the ability to give verbal-only answers to questions. Then, too, humans have their limits: in our family, some are more conscientious cuers than others, but rather than create resentment by constantly badgering them to cue, we accept what they can do. Last, but not least, for those times when just finding the words to express a murky or tangled thought takes all our effort, we have the freedom to simply speak our mind and then clarify what we have said.

How has making every word count impacted our family? We do not have words to express how blessed we are. When we began this journey with hearing loss, our most challenging goal was to give all of our six children as normal a childhood as possible. For the hearing ones, that meant that the spoken language of our home should flow as naturally as before, but also that their own needs could be met even if it meant temporarily taking our focus off the language lessons that the Auditory-Verbal therapists wanted us to be immersed in. All of our children know that whatever family health, economic, or educational crises arise, we can respond to them with the attention they need, knowing we are always providing clear language although it may take a month to complete a lesson that the therapist wanted done in a week. For our sons, the hearing that the cochlear implants provide has made speech and language therapy an eagerly anticipated event and a source of confidence instead of the dull, self-esteem eroding chore we were afraid it would become.

From time to time, we bear rumors to the effect that prestigious implanting institutions somehow don’t really believe in the efficacy of what they are doing. Legitimately concerned by implanted children’s sometimes less-than-optimal language and literacy results, they drag their feet with candidates, or outright refuse them.

Others perform the surgery, but then recommend signed language as the primary mode of communication. How sad to think children are denied the power of technology because the tool that makes it truly useful is unknown, ignored, or discounted. For us, the bridge of technology rests on the pillars of language clarity and completeness provided by Cued Speech. On this structure, our family has the freedom to traverse the chasm of inadequate communication with confidence that we can make every word count.

NCSA Calendar of Events

April

Basic Instructor Workshop (4/9 - 4/10)

NCSA Board Meeting (4/9 - 4/11)

Instructor Certification Exam (4/11)

Salt Lake City, UT

Minnesota Cued Speech Retreat (4/9 - 4/11)

Camp Confidence, Brainerd, MN

May

Spring Camp Cheerio (5/14 - 5/16)

Glade Valley, NC

June

Cue Camp New York (6/24 - 6/27)

NCSA Board Meeting (10/22 - 10/24)

Instructor Certification Exam (10/24)

Rochester, NY

For more information, go to http://www.cuedspeech.org/sub/general/events.asp

Cue Camp New England (7/28 - 8/1)

Governer Baxter School for the Deaf, Falmouth, ME

Cue Camp Virginia (9/23 - 9/26)

Jamestown, VA

Basic Instructor Workshop (10/22 - 10/23)

Cue Camp New England (7/28 - 8/1)

Governer Baxter School for the Deaf, Falmouth, ME

Cue Camp New York (6/24 - 6/27)

NCSA Board Meeting (10/22 - 10/24)

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2010
Cued Speech and Cochlear Implants: Powerful Partners
by Jane Smith, M.A., LSLS Cert. AVEd, Communications Specialist, Montgomery County Public Schools, MD

“We’ve stopped cueding because he just hears everything!”

“There used to be a need for Cued Speech, but with cochlear implants, it’s just no longer necessary.”

“My child hears EVERYTHING with his two implants.”

These are examples of statements I’ve been hearing in the past few years. Parents and colleagues tell me that cochlear implants are a miracle and that there is absolutely no need for deaf children to use visual information any more. In fact, some folks even add that visual information is detrimental to deaf child’s ability to learn to listen.

Nonsense, I say. For over 25 years, I have been using Cued Speech with children who have cochlear implants. While I would agree that cochlear implants are amazing and that this technology has changed the way I teach, I would adamantly disagree that they have lessened or wiped out any need to use Cued Speech. In fact, I see Cued Speech as an excellent means for helping deaf children learn language, develop speech, learn to listen to their maximum ability, and develop high-level reading skills.

In Montgomery County, Maryland, we have a huge deaf and hard-of-hearing population. We have many children who learn by adding Cued Speech to their use of listening technology. In other words, they listen while they are cued to. Most of our students have cochlear implants. Many received their cochlear implant(s) as young as a year old. These children are excellent listeners, good speakers and wonderful readers, all thanks to Cued Speech.

Here are some observations: Babies who are cued to as infants internalize a phonological model of language. As the baby babbles and coos, parents imitate the sounds the baby is saying while cuing and speaking right back to him. The baby loves to see and hear that Mama is repeating the sounds he is making! Just as hearing babies learn to discriminate and imitate phonemes, babies who are cued to discriminate and imitate phonemes! Most babies are not implanted until they are at least one year old. By cueding as soon as possible, parents can establish a phonological grid even BEFORE he has the implant surgery.

As the baby learns more and more language, you can cue to him in order to be very specific about what you are saying. For example, instead of just talking about “shoes,” you can expand a child’s vocabulary and talk about “Crocs” or “Mary Janes” or “flip-flops” or “Ugg’s” or “slippers.” The possibilities are endless. By seeing the cues AND hearing the sounds at the same time, the child can be more sure of what he is hearing and thus imitate the words more correctly in his speech.

Children who get a cochlear implant (or a second implant) after they have been exposed to Cued Speech make quick listening progress. They already have a phonological grid in their brain and what they are hearing makes sense quickly with Cued Speech. They tend to zoom through listening curriculums. Cued Speech also can ensure language development for children who might have an additional disability. There is evidence that nearly half of deaf children have additional problems. These may be subtle learning disabilities or more serious disorders like apraxia, language processing disorders, or cognitive disabilities. Children, including hearing children, are often labeled as “visual,” “auditory” or “tactile” learners. By cueing to a child at an early age, you are stimulating other senses for him. Cued Speech is visual representation of speech that totally complements what he or she is hearing. If the child learns to cue, the tactile support of making sounds (cues) on his fingers may make understanding language easier for him. This support nearly ensures a child with disabilities, even a subtle disability, learn more easily.

And reading…! Cued Speech’s connection to reading is well researched. It is a phenomenal benefit to a deaf child’s ability to learn to read. If you cue to a child with a cochlear implant from an early age, it can only help him learn to rhyme, differentiate phonemes and associate phonemes with print. These are the cornerstones to becoming a good reader.

Cued Speech is an incredible tool, system and mode of communication. It will not slow or impede a child’s progress with a cochlear implant. It will actually enhance a child’s progress and squarely put him on the road to becoming a great reader.

Cued Speech and cochlear implants were made for each other.

Editor’s note: For additional information about using Cued Speech with cochlear implants, please check out the following PowerPoint that Jane Smith created for her presentation at the NCSA Conference in 2005:


The NCSA utilized innovation for fundraising by creating the Literacy Counts Read-a-thon program (www.literacycounts.org). The Literacy Counts Read-a-thon was developed as a community service program, with the goal of raising awareness for deafness, Cued Speech, and deaf literacy. Our inaugural Read-a-thon had three schools participating. Children were encouraged to read books and develop their literacy skills, while raising money through pledges for both their school and the NCSA. The results are in: students read, on average, an additional hour a night, and raised an average of $40 per student! Fortunately, this program boosted the coffers of the schools, and ours, too. Overall the Read-a-thon mutually benefited both the NCSA and each school, with each keeping 60% and 40% of the proceeds raised, respectively.

Cueing & Signing: Together packet BEC4 $12.95
ECT: Effective Therapies through Cuing packet BEC2 $10
Kids Discovering Cued Speech manual BEC1D $19.95
Baby, Kick Those Legs.. activity ideas CSD1 $19.99
Speech Development Guide for Children with Hearing Loss CSD 28 $56.95
Children’s Activity / Progress Calendar BEC1EC $6.00
Reflections of Cued Parents family stories, guidance, activities NCSA36 $4.95
Cued Speech for Special Needs CD BEC $2.99

NCSA Inaugural Literacy Read-a-thon

Canterbury Woods Elementary School, Annadale, VA
Minutes read 94,752
Total raised $6,829.10
Boothbay Regional Elementary School, Boothbay Harbor, ME
Minutes read 81,639
Total raised $1,879.66
HSDC Ned Behnke Speech Language Preschool, Seattle, Washington
Total Raised $121.70
Total Minutes Read 176,391
Overall Total Raised $8,630.45
condition for a group of children exposed early to Cued Speech, and from 37 to 53 percent for those who were exposed to Cued Speech later and only at school, suggesting a variability related to experience in perceiving and discriminating the phonetic structure of Cued Speech.

Now that most children born profoundly deaf are fitted with a cochlear implant during the early language learning years (Spencer & Marschark, 2003), the need for using Cued Speech might be less apparent. Improvement in children’s hearing via cochlear implants is impacting on strategies of perception of oral language (Geers, 2006). That is, with auditory training, many children with cochlear implants may understand speech sufficiently without having to look at the speaker. However, even for normally hearing people, speech detection and intelligibility are influenced by a speaker’s face. From the seminal work of Sumby & Pollak (1954), it is known that visual speech information dramatically enhances the identification of speech when the auditory information is degraded by noise. Auditory and visual modalities are complementary in the transmission of phonetic features. While voicing and manner of articulation are quite resistant to noise, place of articulation is not. Information about place of articulation, in contrast, is transmitted well via the visual modality (Summerfield, 1987). This multimodal nature of speech reception has been shown to improve listeners’ temporal fine structure. “The auditory system performs a limited-resolution spectral analysis of sounds using an array of overlapping ‘auditory filters’ with center frequencies spanning from 50 to 15,000 Hz. The output of each filter is like a bandpass filtered version of the sound, which contains two forms of information: fluctuations in the envelope (the relatively slow variations in amplitude over time) and fluctuations in the temporal fine structure (the rapid oscillations with rate close to the center of the frequency of the band). The temporal fine structure is often described as a ‘carrier’ while the envelope is described as ‘an amplitude modulation applied to the carrier’” (Lorenzi et al., 2006). Currently, cochlear implants typically use 16-22 electrodes placed along the tono-topic axis of the cochlea, each electrode being designed to provoke a frequency-specific neural activation; however, within each region of stimulated neurons, the temporal fine structure of neural response is quite different from that occurring in a normal cochlea (Shannon, 2007).

Modern cochlear implants provide good information about the slow variations in amplitude of the envelope; however, they are poor at transmitting frequency information and information about temporal fine structure (Glasberg & Moore, 1996; Gough & Grose, 2005; Lorenzi et al., 2006). The lack of temporal fine structure in cochlear implants has consequences on the perception of phonetic features, on degradation of speech perception by noise, and on the perception of musical pitch. At the phonetic level, place of articulation and voicing are mostly impaired by cochlear implantation; transmission of manner is well-preserved. Consequently, individuals with a cochlear implant confound minimal word pairs that differ only by place of articulation, such as /kat/ and /gap/ (Giraud, Price, et al., 2001), which cause confusions in acquisition of meanings by children. Due to the fragility of the transduction of phonetic features, speech perception through a cochlear implant is dramatically impaired in noisy listening environments (Fu & Nogaki, 2004; Lorenzi et al., 2006). Individuals with a cochlear implant also have difficulties in perceiving musical information related to pitch, while the information about rhythm is relatively well preserved (Fearn & Wolfe, 2006; Lorenzi & Leybaert, 2006). These problems are currently being addressed by the companies who develop cochlear implant technology, and will certainly be reduced in the future (see for example, http://www Lafayette.com). Until that time, however, these problems might best be addressed via visual support. Given these limitations of cochlear implants, it is reasonable to believe that speechreading and manual cues of Cued Speech remain of valuable use for speech perception by children with cochlear implants, as well as in the process of language development. In the following sections, we will discuss research related to the positive effect of visual speech information on language perception at the level of: (1) phonemic syllables; (2) word and pseudoword identification, and (3) morpho-syntactical development.

Integration of Auditory and Speechread Information on the Phonetic Perception of Syllables

Deaf children fitted with a cochlear implant have been found to perform better on speech recognition tasks when visual information is available conjointly with the auditory information rather than on the only the auditory information. Their auditory speech skills, which appear to be moderate in the AO condition, may be too fragile to resist when they are put into competition with visual processing. It is very likely that the way the cortex integrates auditory and visual features is different in children with a cochlear implant than it is in normally hearing children. A critical variable in the development of audiovisual integration might be the precocity of implantation. Auditory speech perception scores after implantation are better when children have been fitted before the age of three, and even two years old (Baumgartner, Pol, Fryauf-Bertschy, & Kelsay, 1997; Fryauf-Bertschy, Kelsay et al., 1997; Nogaki, 2004; Lorenzi et al., 2006). Early implantation would allow auditory networks to maintain more efficient processing while children are still learning speechreading than normally hearing children for different reasons. First, they might assign more weight to the visual speech information because the auditory information is degraded. This is evident in the case of normally hearing participants who must recognize stimuli consisting of spectrally reduced speech (SRS). The information about place of articulation is only partially transmitted in SRS, and normally hearing participants show lower McGurk effect mimics fairly well the watching of a dubbed film on television; that is, the auditory information is not congruent with the information they could read on the lips. Given that many of the children have confidence in what they read on the lips, without perceiving the sound, it means that they should have problems watching dubbed films. Many of the participants reported this was the case. Children with cochlear implants rely more on speechreading than normally hearing children for different reasons. First, they might assign more weight to the visual speech information because the auditory information is degraded. This is evident in the case of normally hearing participants who must recognize stimuli consisting of spectrally reduced speech (SRS). The information about place of articulation is only partially transmitted in SRS, and normally hearing participants show lower McGurk effect mimics fairly well the watching of a dubbed film on television; that is, the auditory information is not congruent with the information they could read on the lips. Given that many of the children have confidence in what they read on the lips, without perceiving the sound, it means that they should have problems watching dubbed films. Many of the participants reported this was the case. Children with cochlear implants rely more on speechreading than normally hearing children for different reasons. First, they might assign more weight to the visual speech information because the auditory information is degraded. This is evident in the case of normally hearing participants who must recognize stimuli consisting of spectrally reduced speech (SRS). The information about place of articulation is only partially transmitted in SRS, and normally hearing participants show lower McGurk effect mimics fairly well the watching of a dubbed film on television; that is, the auditory information is not congruent with the information they could read on the lips. Given that many of the children have confidence in what they read on the lips, without perceiving the sound, it means that they should have problems watching dubbed films. Many of the participants reported this was the case.
perception of speech by children with a cochlear implant is that, in both cases, the speech information conveyed by the high frequencies, which is important to perceive the place of articulation, is degraded. Therefore, it is not surprising that children with a cochlear implant who have only partial access to place of articulation information through the auditory channel rely more on speechreading to process place of articulation. When auditory and visual information are put into conflict, their perception of speech is captured by visual information.

Second, the visual predominance of cochlear implant users might also be explained in terms of reorganization of neural resources in the case of deafness followed by cochlear implantation. Early deprivation of auditory information, as in congenital hearing impairment, can lead to a reorganization of neural resources, with a potentially larger involvement of auditory cortex in the processing of visual stimuli (Neville, Schmidt, & Kutas, 1983; Neville & Lawson, 1987). It has been found that the auditory cortex of deaf persons, once reorganized by cross-modal plasticity after years of deafness, can no longer respond to signals from a cochlear implant (Champoux, Lepore, Gagné & Théoret, 2009; Doncet, Bergeron, Lassonde, Ferron, Lepore, 2006; Lee, Lee, Oh, Kim, Kim, Chung, Lee, & Kim, 2001). Children and adults implanted at later ages are at a relative disadvantage compared to children implanted early, because the auditory cortex has already been appropriated by visual modality. As Shannon (2007) notes, the auditory system of children implanted at early ages competes for cortical real estate, whereas late implantees may be unable to dislodge existing cortical ‘squiratters.’ The results of Schor et al. (2005), which showed that children implanted later than 30 months of age fail to respond to signals from a cochlear implant remains imperfect. Indeed, most children are now fitted with a cochlear implant at around the age of one year. During the first months or years of cochlear implant use, speech perception of an implanted child remains imperfect. Oral comprehension does not develop exclusively by the auditory channel but necessitates audiovisual integration.

Therefore, the addition of Cued Speech to the signal delivered by the cochlear implant might help deaf children in identifying new words. Children fitted early with a cochlear implant, thus, would benefit from multimodal input during the development of phonological representations, which would serve as the platform from which subsequent phonological awareness, reading, and spelling acquisition could be launched (see Chapter 11 in this volume).

The use of Cued Speech by children with a cochlear implant is not an automatic solution to language development of deaf children. Children may not reliably look at a speaker’s lips and hands, and they may tend to rely on auditory information alone. Some parents may lose their motivation to cue, feel discouraged, or simply abandon coding with the hands. Therefore, it would be important for educators and related service providers to regularly assess whether cueing remains necessary, and under what circumstances after implantation. It is likely that after some period of auditory habilitation, children fitted with a cochlear implant would be capable of learning new words by auditory means and reading alone. Continued attention, nonetheless, should be devoted to the development of phonological awareness, reading, and spelling acquisition could be launched (see Chapter 11 in this volume).

Conclusions

Data collected in the 1980s and the 1990s demonstrated that the use of Cued Speech can be a powerful tool for language development and subsequent formal reading achievement by profoundly deaf children equipped with hearing aids. Cued Speech enhances speech perception through the visual modality, the acquisition of vocabulary and morphosyntax, and metalinguistic development, as well as the acquisition of reading and spelling (see Chapter 11 in this volume). More recent data seem to indicate that children who received cochlear implants benefit from previous exposure to Cued Speech; however, use of Cued Speech before implantation is likely to become increasingly more rare. Indeed, most children are now fitted with a cochlear implant at around the age of one year. During the first months or years of cochlear implant use, speech perception of an implanted child remains imperfect. Oral comprehension does not develop exclusively by the auditory channel but necessitates audiovisual integration.
National Cued Speech Association
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Championing effective communication, language acquisition and literacy through the use of Cued Speech.

Deaf Cuer Profiles: Life with Cochlear Implants
by Zainah Alkibesi

Editor’s Note: These profiles present various perspectives among deaf cuers with cochlear implants, including those who have had good experiences with it, those who are unhappy with their experience, and those who have just recently received at least one implant. The responses were edited for space and/or clarity.

Laura Cunningham:
Laura is a 22-year-old graduate of UMBC with a major in Psychology. She plans to attend graduate school in 2010 for special education or deaf education. She was born deaf and implanted in 1990 and 2008 [bilaterally]. In addition to Cued Speech, Laura recently started learning ASL and hopes to be able to learn American Sign Language “enough to be a part of the deaf community.”

Shanna Sorrells:
Shanna grew up in Rockville, MD, and was mainstreamed throughout her education. She is currently an Education major at Smith College and graduates in December 2010. She is participating in Williams-Mystic this semester, a coastal studies program.

Nabeel Keblawi:
Nabeel was born profoundly deaf near Washington, DC, and relocated to Houston, TX, in 2008. Just a few months ago at age 29, he received a cochlear implant. He has been writing about his experiences on his blog, http://nabeel-ci.blogspot.com.

Hilary Franklin:
Hilary grew up immersed in Cued Speech and has a B.S. in Psychology and a Ph.D. in Communication Sciences and Disorders from the University of Arizona. She is a licensed speech-language pathologist and a certified cued speech transliterator. She teaches at Columbia University in New York, NY.

OnCue:
How long have you been cueing?
Laura Cunningham: I’ve been cueing for 4 years since 4 years old.
Hilary Franklin: I’ve been cueing for about 19 years.
Shanna Sorrells: Since I was five and a half. I’m 30 years old now.
Nabeel Keblawi: Since I was five and a half.
Hilary Franklin: I learned when I was 3 ½ years old, so about 28 years now.

OC: What were your initial expectations?
LC: My parents were hoping that I would be able to hear well—eventually use the telephone, etc., which did happen, due to intensive rehab (speech/listening therapy). However, with my second CI…my expectations were to try to learn how to hear with my new CI, but I did not expect to hear as well as I do with my original CI. I’ve been really lucky with the 2nd CI; it has helped so much and it’s nice to leave the original CI off…and listen with it. It’s really neat how technology has changed.
SS: My initial expectations were that it would not “cure” my hearing loss. I did not expect any miracles, but I did expect some improvement. I had done a lot of research on my own before getting the CI. I knew it would take hard work and a lot of motivation in order to get results with it.
NAB: My expectations and hopes were different things. I expected that it would be difficult to learn how to interpret sound, given the fact that I was born deaf and never built an auditory memory, especially for speech comprehension. I was hoping that the learning curve wouldn’t be as steep as I expected. The reality at 4 months post-activation? Somewhat different from my expectations and my hopes, so I’m not disappointed and I have no regrets in my decision to get the cochlear implant.
HF: My initial expectation was that I would have more interaction with the implant as with the hearing aid—there was no reason to expect that I would hear or understand less. I did also have the expectation that since I had used my residual hearing so well, that there would be no initial “surprises.”
OC: What benefits do you think you’ve received from the 1st CI? Tons! I can use the phone, I can listen to music, I can communicate with others with minimal difficulty. It’s great!
SS: I have reaped major rewards from my use of the CI. I feel much more confident with talking to people in groups. People are able to get my attention simply by saying my name. Initially after getting the CI, people told me my speech was better, but I did not have the audiological improvement. I can hear some sounds and news on the radio; I’m still working on learning how to hear those! So, CI has been truly life-altering. I will never regret my decision to get the surgery.
NK: I have yet to reap the full benefits of this technology, as it is very early. Whatever I have reaped so far is improved understanding of speech. I have been interested in learning about hearing loss for a few years now and am more interested in believing that they knew everything than in working/teaming with me. So I “hung up the processor.” Almost two years later, I tried another center. While the final map was a significant improvement, something still felt “off” and eventually the processor went back into my closet. I also met one of the original developers behind the implant. He asked questions that no one else had asked. He asked about my auditory processing capabilities, etc., and suggested that my other ‘better’ ear might have been better. He referred me to a research team studying why implants did not work as expected for some “excellent candidates.” I spent five days at that research center and came away with maps that were decent for environmental information, but not for speech processing. To this day, we still don’t know the exact cause(s) of why the implant did not perform as expected. I have no regrets, though.

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Championing effective communication, language acquisition and literacy through the use of Cued Speech.

What were your initial expectations?
Laura Cunningham: My expectations and hopes were to try to learn how to hear with my new CI, but I did not expect to hear as well as I do with my original CI. I’ve been really lucky with the 2nd CI; it has helped so much and it’s nice to leave the original CI off…and listen with it. It’s really neat how technology has changed.

Initial improvement:
Hilary Franklin: Initially after getting the CI, people told me my speech was better, but I did not have the audiological improvement. I can hear some sounds and news on the radio; I’m still working on learning how to hear those! So, CI has been truly life-altering. I will never regret my decision to get the surgery.

The responses were edited for space and/or clarity.


Championing effective communication, language acquisition and literacy through the use of Cued Speech.

Shanna Sorrells: Shanna grew up in Rockville, MD, and was mainstreamed throughout her education. She is currently an Education major at Smith College and graduates in December 2010. She is participating in Williams-Mystic this semester, a coastal studies program.

Nabeel Keblawi: Nabeel was born profoundly deaf near Washington, DC, and relocated to Houston, TX, in 2008. Just a few months ago at age 29, he received a cochlear implant. He has been writing about his experiences on his blog, http://nabeel-ci.blogspot.com.
Amity Leitner Graham
September 1, 1973 - August 22, 2009

In August, the National Cued Speech Association learned about the untimely death of Amity Jean Leitner Graham, who was a native cuer. During her college years, she was an active cuer and advocate, as well as a strong proponent for transliteration services. Her parents, Jeanie and Fritz Leitner, were also active in Cued Speech at the local and national levels, and served on the NCSA Board of Directors. We extend our sympathies to Amity’s family and friends. You may read her obituary from the Chapel Hill News here (http://www.chapelhillnews.com/sports/story/31821.html).

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On Cue

On Cue, the newsletter of the National Cued Speech Association, is published three times a year; e-mail updates to members are more frequent. Letters to the Editor must include contact information of the author. The Editor reserves the right to select those letters to be published and to edit for length and language. News, calendar items, letters, classified ads, and photos are needed! Electronic transmission of all materials is preferred. Electronic photos must be high-resolution at 300 dpi. Send to Aaron Rose, Editor, at oncue@cuedspeech.org or mail hard copy to:

On Cue
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Interested in Becoming a Certified Instructor of Cued Speech?

Take the Basic Instructor Workshop
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Pass the National Certification Exam
You must pass both portions of this exam: 1) an Assessing Cue Errors component and 2) a written component that assesses your knowledge of the material covered during the BIWS.

Demonstrate Proficiency of Cueing Skills
You must pass an approved assessment of expressive cueing skills.

Benefits of Certification
As a certified instructor, you will be listed on our national directory of instructors and be eligible to teach at NCSA-sponsored camps and workshops/events.

Start the process now by registering for the next Basic Instructor Workshop!

For more information, contact Jean Krause at InsCert@cuedspeech.org
website: http://www.cuedspeech.org/sub/professionals/instructors.asp

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