
Peer Commentary on "Future Directions for Cochlear Implants" by Richard S. Tyler, Jane M. Opie, Holly Fryauf-Bertschy, and Bruce C. Gantz

Commentaires au sujet de "Orientations futures pour les implants cochléaires" par Richard S. Tyler, Jane M. Opie, Holly Fryauf-Bertschy et Bruce C. Gantz

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The advent of cochlear implants has generated much excitement in the adults who once had normal hearing, in parents of deaf children, in the professionals who work with them, and not least, in the media. With so much hype, it is often hard to keep expectations of implant candidates and their families within reasonable bounds.

Tyler and his colleagues introduce their article by remarking that implants have had "a dramatic impact" on rehabilitation of both adults and children, although this conflicts with their later comment that progress made by children with congenital deafness is slow and gradual. I would agree that the potential for great impact is there, but currently there are many hurdles to overcome.

To date very few Canadian children have received implants, and most of those have had their surgery in the U.S. On the surface, the main problem would appear to be a financial one. However, there is also a heavy pressure on government agencies by associations representing deaf adults who claim that implanting in children is unethical.

I read with interest the many areas that Tyler and colleagues identified as being in need of future development. The idea of cochlear implants for babies is a scary one given currently available diagnostic tests. However, there is no question that the earlier intervention can begin, the better, and that a simple, single channel device could be the first step.

As an educator, the future direction which most concerns me is listed by Tyler as number 13, "Provide an enriched auditory educational environment." For me, this is really the heart of the matter. Tyler and colleagues state that educational programs should emphasize the development of auditory and oral communication skills in order to maximize the child's new auditory potential. They then courageously deal with the controversial matters of communication methodology, mainstream placement, and the Deaf culture.

Tyler and his colleagues lay considerable emphasis on the need for auditory training and speech therapy for the child who has received an implant. They talk in terms of curriculum, and presumably have in mind the programs described by another of their associates (Tye-Murray, 1982). This concept of auditory training highlights the teaching of specific skills, such as discrimination at the word or sentence level. Brackett, (1992) warns against a narrow focus on what she calls "splinter skills," and recommends instead an approach which promotes integrated learning. For a discussion of auditory learning versus auditory training, see Cole and Gregory (1986) and Ling (1989).

Research studies (Ling & Doehring, 1969; Doehring & Ling, 1971; Ling, 1976) have demonstrated quite clearly that while auditory training results in significant gains, there is little generalization to other, even quite similar material. Also experience shows that there is little carryover to other situations. Ling (1989) deals in some detail with this issue, especially as it relates to the development of speech. Ways in which speech development can be incorporated into an educational program are discussed in a forthcoming article by myself and colleagues (Porusse, Bernstein, & Ling Phillips, in press).

Tyler and colleagues see considerable promise in the area of computer-based aural rehabilitation, for both children and adults. Programmed learning was once thought to hold the key to raising language and reading levels in deaf children. Language is normally learned through interaction with family and friends. It is extremely difficult to simulate this dynamic interchange. Parents, teachers, and classmates make exciting conversational partners (see Clark, 1989; and Cole, 1987). My vote is for the human contribution!

Training of professionals and parents was viewed by Tyler and colleagues as an important future need. This is critical. It is all too easy to assume that families or teachers

can follow through on suggestions offered by the implant team. Where major changes in communication or teaching style are involved, detailed guidance over an extended period of time will likely be required. This is where technology in the form of videotaped demonstration lessons might be of assistance.

Teachers and parents experience great insecurity when first confronted with a child who has a cochlear implant. Assurance is needed that the device is basically a very special kind of hearing aid that literally helps the child to hear sounds and speech not previously within their range. Teachers and parents also may need support in dealing with the stress they experience when the much hoped for gains are not quickly realised. This reinforces the need for extremely close collaboration between the hospital implant team and the professionals in the educational or rehabilitation setting.

One of our hopes for the future is that the crucial nature of the rehabilitation/education aspect will be recognized with appropriate funding. The resources of schools such as ours are sorely strained. Families look to us for evaluation, guidance, and support during the selection process, which can extend beyond a year, as well as for post-implant rehabilitation and education. We look forward to active participation in future developments with respect to cochlear implants.

A.L.P.

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Reply to Commentary

Our intention was to suggest that computer-based auditory training has great potential to contribute towards improving rehabilitation, and that it should complement, not supplant, human interchange. We agree that real-life communication is fundamental in rehabilitation and is the ultimate objective. We disagree that specific auditory training has little potential to contribute to beneficial improvements in audiovisual speech perception. We believe that game technology can be used to

motivate children (and adults) to listen carefully and independently to improve perceptual skills. With the development of innovative graphics and programming, such techniques will offer an efficient and effective supplement to traditional aural rehabilitation therapy.

R.S.T.