

# Listening and Spoken Language Knowledge Center

For children and adults with hearing loss, their families and the professionals who support them

*Alexander Graham Bell*  
 NATIONAL DEAF-HEARING RELATIONSHIP ASSOCIATION  
 FOR THE DEAF AND HARD OF HEARING

## Application of the Ling Approach

A Global Perspective from the Ling Consortium

By *Trudy Smith, M.Ed., LSLS Cert. AVT, Marietta Paterson, Ed.D., CED, and Christina Perigoe, Ph.D., CED, CCC-SLP, LSLS Cert. AVT*



Ling Consortium members and presenters at the 2014 AG Bell Convention in Orlando, Florida. Back row from left to right: Trudy Smith, Dimity Dornan, Marietta Paterson, Carol Flexer, Rosie Richardson Quayle. Front row from left to right: Aziza Tyabji Hydari, Elizabeth Fitzpatrick, Chang Son-A, Christina Perigoe.

Present but not in photo: Roxanne Innes, Andrew Kendrick.

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The Ling Consortium, founded in 2010 by Dimity Dornan, LSLS Cert. AVT, executive director of the Hear and Say Centre in Brisbane, Australia, is a group of international listening and spoken language professionals dedicated to promoting the principles and practices of Daniel Ling, O.C., Ph.D., a pioneer of auditory-verbal practice. Among his many contributions to the field, he is most known for the Ling speech assessment and teaching model and the Ling “Six-

Sound Test” (Ling, 2002). Members of the Consortium promote teaching listening and spoken language to children with hearing loss that include Ling’s concepts and approaches through university-based and continuing professional education courses.

Ling’s goal of early intervention and early auditory access to spoken language is shared by the Consortium. However, it is recognized that many children around the globe still do not have access to sound early in life and have limited auditory experiences compared to their peers with typical hearing. Children who lack early auditory access are at risk for speech and spoken language difficulties and delays. Ling’s work and approach are not only still relevant today, but will be in the future.

### Keeping Ling’s Legacy Alive

<http://www.agbell.org/Document.aspx?id=4080&PageMode=print>



The Consortium has engaged in several activities to raise awareness of Ling and his work. A presentation, titled "Ling's Legacy: Speech in the 21st Century" given at the 2012 AG Bell Convention in Phoenix, Arizona (McGinnis et al., 2012) discussed Ling's assessment tools and provided a live demonstration of speech teaching strategies.

The Consortium then conducted an online survey, which aimed at gathering information on how Ling's work was used in practice around the globe. The survey was shared over the Listening and Spoken Language Specialist (LSLS®) listserv and with interested parties.

Survey results found that practitioners:

- Adhered to the principles and strategies for teaching listening and spoken language detailed in Ling's publications.
- Translated Ling's publications into many languages, including Korean, English, French, Hindi, German, Inuktitut and Arabic languages.
- Adapted the principles and strategies to accommodate the more rapid pace that children with cochlear implants and hearing aids move through the stages.
- Made cultural adaptations to activities, games and themes to embed Ling's strategies in their practice.
- Used the Ling approach when working with children who experience additional disabilities.
- Selected the formal Ling approach for students who were diagnosed after 12 months of age or who did not demonstrate an expected rate of progress.

### Ling in Practice around the Globe

In 2014, the Consortium presented a second workshop titled "Functional and Practical Application of Ling's Strategies: A Global Perspective" at the 2014 AG Bell Convention in Orlando, Florida (Dorman et al., 2014). Members provided a global overview of listening and spoken language practice from programs around the world.

#### Canada

*Elizabeth Fitzpatrick, LSLS Cert. AVT, School of Rehabilitation Sciences, University of Ottawa*

Ling established a master's degree in Auditory-Oral (Re)H habilitation & Education of Hearing Impaired Children (AORE) at McGill University that existed from 1975-1995. There

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#### Speech and the Hearing-Impaired Child

*Daniel Ling, OC, Ph.D.*

Back by popular demand, this classic best-seller is now available as an e-book through Amazon and in PDF format from the AG Bell Bookstore.

This book is used by professionals and students all over the world! It incorporates informal strategies appropriate for use with modern technology to promote spoken language development, such as digital hearing aids and cochlear implants. The book also provides descriptions of techniques for developing speech in children for whom digital hearing aids and cochlear implants do not or cannot compensate adequately for



are 50 graduates of this program with an additional 12 research master's and doctoral-level graduates. Currently, the two Canadian university programs that train professionals in education of the deaf incorporate the Ling speech approach in their courses—York University in Toronto and the University of British Columbia in Vancouver. There are also two post-degree programs—the VOICE Organization Mentorship Program in Ontario and the Certificate in Auditory-Verbal Development at the University of Ottawa. Both provide intensive theory and practice in Ling's approach to listening and spoken language.

### United Kingdom

*Rosie Richardson Quayle, CertMRCSLT, LSLs Cert. AVT, Auditory VerbalUK (AVUK), Oxford and London*

Ling's work is virtually unknown in the United Kingdom (UK), with the exception of the "Six-Sound Test." Auditory VerbalUK is teaching clinicians the value of Ling's work across three key areas:

1. **Value for Infants** - The stages of speech development provide a useful diagnostic tool for analyzing how children and particularly infants use their voices and for what purpose. Ling's auditory-first teaching strategies have particular value for late diagnosed, complex or premature infants and is different from the more visually-based assessments in the UK.
2. **Value for Parents** - Ling's documentation of the stages of speech development provides a clear map of progress and future goals for parents.
3. **Value for Professionals** - Ling's principles provide a structure and rationale for flexible goal setting. Professionals are able to apply Ling's strategies when coaching and guiding parents through play and functional language activities to real-life scenarios to add value to family-centered therapy.

particular levels of hearing loss.

This second edition provides a new, user-friendly format that assists with the ongoing evaluation of speech in the context of spoken language. Chapters include studies relating to speech production, the sense modalities in speech reception and production, multisensory speech reception, and levels of speech acquisition and automaticity, among other topics.

### Phonetic-Phonologic Speech Evaluations

*Daniel Ling, OC, Ph.D.*

The Phonetic-Phonologic Speech Evaluation Pads are now available as an electronic resource (downloadable PDF). These user-friendly evaluation forms are described in chapter nine of *Speech and the Hearing-Impaired Child* (2nd ed.). Teachers, students and clinicians who are responsible for speech development in children with hearing loss will find these forms useful and effective. They provide a clear record of a child's performance with intervals of about six months and clear guidelines on the type of ongoing work that should occur between assessments.

### Foundations of Spoken Language

*Daniel Ling, OC, Ph.D.*

This landmark PDF e-book emphasizes the perception of speech through residual hearing, either through the use of modern hearing aids or cochlear implants. An important feature of the book is the presentation of the aspects of speech that appear in the octave bands centered on frequencies depicted in audiograms. This knowledge, in conjunction with the Six-Sound Test, allows teachers and clinicians to determine whether or not the frequency response characteristics of hearing aids are adjusted to provide optimal levels of hearing.



## India

*Aziza Tyabji Hydari, Teacher of the Deaf, AURED, Mumbai*

Ling's tools and principles have been incorporated into the Aziza Grid at the AURED Centre. This tool was developed primarily to give a visual picture of the cochlear implant map and to enhance communication among audiologists, therapists, teachers and parents. The Aziza Grid demonstrates how electrode settings relate to frequencies in the Ling "Six-Sound Test." As a tool for auditory habilitation, the Aziza Grid tracks speech perception progress post implant activation and provides guidelines for setting appropriate auditory goals.

## Korea

*Chang Son-A, Woosong University, Seoul*

Korea adopted cochlear implant technology very early with the first implantation occurring in 1989 for adults and children. The number of children receiving cochlear implants increased quickly in the late 1990s and early 2000s alongside the introduction of listening and spoken language practice which placed great emphasis on Ling's theories and practices. Professionals using Ling principles made adjustments for the Korean language and culture. While the Korean phonetic system has fewer high-frequency phonemes compared to English, the Ling "Six-Sound Test" is still useful to assess perceptual abilities.

## Australia

*Roxanne Innes, LSLS Cert. AVT, Hear and Say Centre, Brisbane, Queensland*

Australia now screens 97 percent of all newborns for hearing loss and is committed to the provision of amplification prior to 12 months of age for children identified with hearing loss. Ling's principles and strategies are used throughout Australia and children are monitored through the phonetic and phonologic assessment tools which guide their individual therapy sessions. An extra sound ("aw") is often included in the Ling "Six Sound Test" to account for the Australian accent.

## United States

*Marietta Paterson, Ed.D., CED, University of Southern Mississippi, and Christina Perigoe, Ph.D., CED, CCC-SLP, LSLS Cert. AVT, University of Southern Mississippi*

Ling's principles and philosophies are highly relevant for children with hearing loss who also have additional disabilities, which are estimated to account for 40 percent of the population of children with hearing loss (Perigoe, 2013). These additional disabilities may include: sensory (e.g., hearing, vision)

- motor/physical (e.g., cerebral palsy, oral-motor)
- cognitive (e.g., Down syndrome)
- learning disability/disorder (verbal, non-verbal)



- behavioral and emotional (e.g., attention–deficit/hyperactivity disorder/oppositional defiant disorder or ADHD/ODD)
- communication (e.g., autism spectrum disorder or ASD).

Ling's assessment tools are flexible and allow for adaptation for individual hearing age, cognition and language levels. Ling's strategies continue to be appropriate as they are based on the sense modality most appropriate to each child and allow for the establishment of prerequisite skills. Ling's approach can be adapted for use with developmentally younger children or those with delayed acquisition of listening and spoken language (Perigoe, 2013).



### 2014 Workshop Survey Feedback

*Trudy Smith, M.Ed., LSL Cert. AVT, Royal Institute for Deaf and Blind Children Renwick Centre, and Andrew Kendrick, M. SpEd., LSL Cert. AVT, Cochlear Ltd., Sydney, Australia*

During the 2014 workshop on “Ling in practice around the globe,” Consortium members took the opportunity to collect additional data to add to the 2012 survey. The workshop attracted over 100 participants including therapists, parents and educators from the

United States, Australia, New Zealand, Europe, Asia, United Kingdom, Canada, Mexico and South America. They were invited to share their own experiences with Ling's strategies and principles. Selected responses indicated that some participants use Ling's seven-stage speech model and many liked the flexibility of Ling's approach in assessing individual listening and spoken language skills. Many participants reported using the Ling “Six-Sound Test” and used whispering to promote detection. Most participants desired access to more knowledge about Ling's principles and practices, and access to master teachers demonstrating strategies, discussion of work with “deaf plus” children who have additional disabilities as well as specific continuing education opportunities.

### Ling's Legacy: Flexibility and Adaptability

The influence of Ling's work on current listening and spoken language practice is inspiring. The degree of flexibility built into the materials has allowed for a broad range of adaptations that meet the needs of individual children in their home countries.

The Consortium will continue to identify and develop international resources to be shared on its website, graciously hosted by the Royal Institute for Deaf and Blind Children ([www.ridbc.org.au/renwick/ling-consortium](http://www.ridbc.org.au/renwick/ling-consortium)). This website will include a list of members and their affiliations, survey data and presentation materials, links to original Ling videotapes, and the Ling “Six-Sound Test” cards in a range of languages other than English developed by Cochlear Ltd.

In addition, the consortium and its members will continue to identify gaps within programs and locations and seek to develop online and face-to-face training sessions to ensure the continued use of Ling's materials in the future. We hope our work, like Ling's legacy, will endure. We encourage you to join us on this journey!

Please direct all enquiries to the Consortium chair Marietta Paterson at [marietta.paterson@usm.edu](mailto:marietta.paterson@usm.edu).



### Who was Daniel Ling?

Daniel Ling, O.C., Ph.D. (1926-2003), was a professor emeritus and a consultant in early childhood hearing loss. Over his lifetime, he contributed more than 200 articles and several books to the literature on education of children who are deaf and hard of hearing. Born in England, Ling received his doctorate from McGill University in Montreal, Canada, where he subsequently became director of the aural habilitation program. He also served for several years as the dean of science at the University of Western Ontario in London, Canada. Additionally, Ling was an accomplished musician. He received many major awards for his outstanding contributions to children with hearing loss and their families and to the education of professionals in the field of hearing health care and related sciences. He served as president of the Alexander Graham Bell Association for the Deaf and Hard of Hearing in the early 1980s and was a founding member of Auditory-Verbal International Inc. His best known book, *Speech and the Hearing-Impaired Child: Theory and Practice* (2002), has been distributed around the world as one of the finest sources in the field.

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**Marietta Paterson, Ed.D., CED**, is associate professor and director of the education of the deaf undergraduate and graduate programs in the Department of Speech and Hearing Sciences at the University of Southern Mississippi. Paterson has taught and presented in universities and service programs in Canada, Australia and the United States in the areas of speech assessment and teaching, development and assessment of spoken language, and early auditory-based intervention for children with cochlear implants and hearing aids. From 1999-2004, Paterson worked with parents, children and professionals first as principal of St. Joseph Institute for the Deaf and then director of the Vancouver Oral Centre for Deaf Children in British Columbia. She is the chair of the Ling Consortium International.

**Christina Perigoe, Ph.D., CED, CCC-SLP, LSLs Cert. AVT**, is associate professor and coordinator of the graduate program in deaf education with a focus on early oral intervention in the Department of Speech and Hearing Sciences at the University of Southern Mississippi. Perigoe has taught, presented and consulted extensively in Canada, United States and Australia on the topics of speech perception, speech production and auditory-verbal approaches for children with hearing loss using cochlear implants and hearing aids. She has written numerous articles and chapters on these topics and co-authored articles in two The Volta Review monographs: "Multiple Challenges-Multiple Solutions, Children with Hearing Loss and Additional Disabilities" and "Professional Preparation of Listening and Spoken Language Practitioners."

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