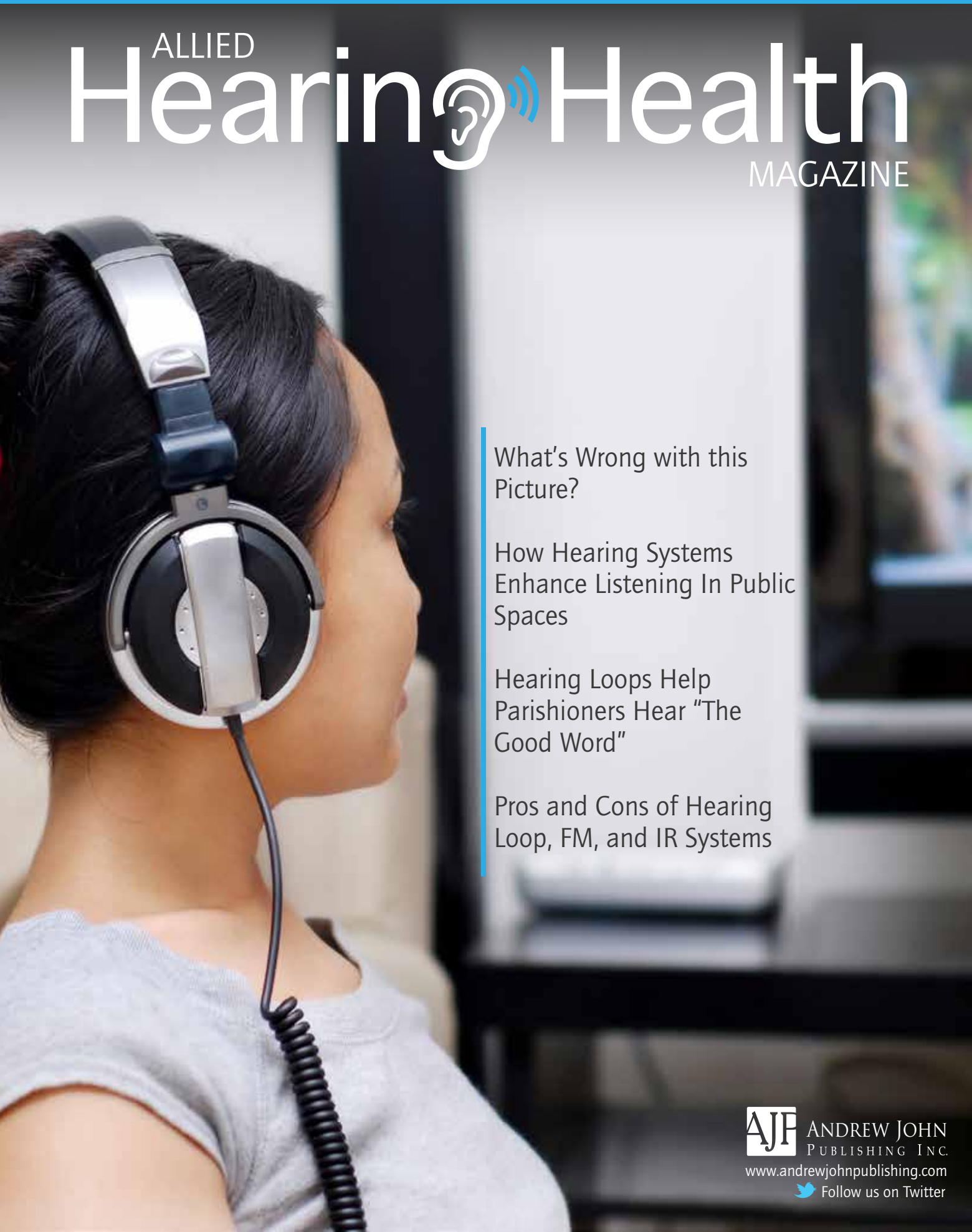
Issue 2-2 2014

ALLIED Hearing Health MAGAZINE



What's Wrong with this Picture?

How Hearing Systems Enhance Listening In Public Spaces

Hearing Loops Help Parishioners Hear "The Good Word"

Pros and Cons of Hearing Loop, FM, and IR Systems

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ALLIED Hearing Health MAGAZINE

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contents

Boost the performance of your hearing aids

Keeping in touch

It's happened countless times — you're at home, trying to enjoy a phone conversation with a friend. But the TV is on in the background, the kids are playing or listening to music. There's just too much noise and you are overwhelmed. Eventually, you may find yourself avoiding using the phone, even losing touch with the people you care about.

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Allied Hearing Health Wants to Keep You "In the Loop"

Welcome to Issue 2 of *Allied Hearing Health* magazine. Our goal is always to keep our readers "In the Loop" but in this issue we are taking that literally.

Most people with hearing loss are aware of the steps they take, personally, to maximize their communications through hearing aids, cochlear implants, speechreading, captioning, etc. But how aware are they about accessibility in public spaces that can improve their communication? This issue takes a closer look at hearing systems that can enhance communication in outside of the home.

Canada, unlike the UK and the United States, has almost no legal requirements for organizations at any level to provide communication accessibility in public spaces. We would like see that change.

The articles cover a wide variety of topics including hearing loops, telecoils, and infrared systems, and examples of how successful systems can be set up and the new technology that has allowed them to be used to their maximum potential. We also have excellent article that explores the comparative benefits of the different systems, such as hearing loops, RF and infrared systems.

Allied Hearing Health also keeps everyone "In the Loop" through the collective wisdom, experience, and knowledge of our contributors. Daniel Basch-Tétreault explores the often less-than-realistic portrayal of deaf people in the movies, and gives us a bonus of some excellent movie reviews. As well, Gael Hannan gives another virtuoso performance with "Hearing Aid Tips from the Maestro."

As always, we have terrific contributions from our non-profit partners with The Hearing Foundation of Canada telling us about their *Baby's Communication Checklist;* Deaf and Hear Alberta's Lynne Nieman explores the links between hearing loss and dementia; and Carole Willans from CHHA tells us about the wonderful work of the CHHA Foundation.

Happy Reading

Scott Bryant
Editor-in-Chief
Andrew John Publishing Inc.

Innovations and Legacies

By Carole Willans

About the Author
Carole Willans is a hard of hearing lawyer and long-time advocate for persons who are hard of hearing or deafened. She has a profound bilateral hearing loss, the result of a household accident at the age of four. Carole has been involved in the Canadian Hard of Hearing Association since 1990, during which she served as the executive director, president, and board member.

I love using words creatively, so I find it fun that the title of this article is an oxymoron – a figure of speech that juxtaposes apparently contradictory elements. Innovations are about moving toward what is new; legacies are about preserving a past memory. I want to tell you how both innovations and legacies can be weaved together in the best interests of Canadians who are hard of hearing.

One of the roles of the Canadian Hard of Hearing Association (CHHA), whether at the national, chapter, branch or network level, is to encourage persons with hearing loss to be open to new technologies. Sometimes it seems that there are so many choices available in terms of new technologies that it boggles the mind – but is this a reason to give up? Certainly not! Even modest improvement can bring an enhanced quality of life.

Here's a thought to help you get over any "attitude hump" that you may have in trying out new technologies. Like most people, in the past I tended to focus my efforts on "fixing" some perceived deficit in myself, where I feel like an improvement project where I have to fill in gaps to become more "perfect." With experience I have learned to take a different and more positive approach: I am already a complete person (yes, I am already "perfect"!) and so I am just learning what new technologies can work for me to further enhance an already good quality of life. It is a learning experience that I see as a joyful process, based on curiosity and wonder. That is the approach I recommend to innovations: be an explorer – open to what is new. You might be surprised how the smallest thing can bring you joy, whether it is how to use televised captioning or how to text on your cell phone – all the way to new-fangled hearing aids or assistive listening devices, and more.

You are asking yourself, what is the connection between innovations and legacies? Here's the thing. As I said, one of the roles of CHHA is to encourage persons with hearing loss to be open to new technologies. While a lot of valuable work is done by CHHA volunteers, still financial resources are necessary to move this work forward. The Canadian Hard of Hearing Association Foundation (CHHAF) is a separate organization whose purpose is to raise funds through donations, and the long term investment of those funds, in order to provide financial support for the programs and activities of CHHA. The Foundation is in the business of helping people create their own legacies in support of efforts to help hard of hearing Canadians to help themselves, including in the exploration of new technologies to enhance their personal quality of life.

Interested in learning more about how to create your very own legacy to help support hard of hearing Canadians to find a better quality of life through innovations? Please feel free to contact me at cwillans@chha.ca. Be innovative today and set up a legacy that will keep on giving!

Hearing Aid Tips from a Maestro

By Gael Hannan

Gael Hannan is a writer, actor, and public speaker who grew up with a progressive hearing loss that is now severe-to-profound. She is a director on the national board of the Canadian Hard of Hearing Association (CHHA) and an advocate whose work includes speechreading instruction, hearing awareness, workshops for youth with hearing loss, and work on hearing access committees.

Gael is a sought-after speaker for her humorous and insightful performances about hearing loss. Unheard Voices and EarRage! are ground-breaking solo shows that illuminate the profound impact of hearing loss on a person's life and relationships, and which Gael has presented to appreciative audiences around Canada, the United States and New Zealand. A DVD/video version of Unheard Voices is now available. She has received several awards for her work, including the Consumer Advocacy Award from the Canadian Association of Speech Language Pathologists and Audiologists.'

Gael lives with her husband and son in Toronto.

I'm a hearing loss expert. No, I'm not a hearing care professional and I'm not even an expert on hearing aids. What I am, however, is a maestro, a virtuoso at being a person with hearing loss. And, after almost 40 years of wearing them, I've learned some very important things about hearing aids.

#1: After showering, or swimming, or any activity where your ears have been flooded, wait half an hour before putting your hearing aids back in. The ear canal and surrounding areas should be as dry as possible to prevent moisture steaming up your technology. Wet stuff is simply not good for expensive aids.

Should you, unfortunately, soak your head while wearing your hearing aids – being caught in a downpour, perhaps, or having your head submersed in the toilet – you need to act quickly. The first step is remove your ears from the water as soon as possible. Then, remove the battery and place the hearing aid in a dry-aid kit. Do not use a hot air dryer, oven or microwave. As you sit watching it dry for a few hours, keep your fingers tightly crossed, as if in prayer. If the hearing aid fails to work after that, or if you hear static, call your hearing care provider. Good luck.

#2: Do not believe your audiologist when she tells you not to put anything in your ear that's smaller than your elbow. She can't really mean it. After all, the hearing aid she sold me is significantly smaller than my elbow. Apart from that, you can believe everything else she says. Oh, hang on … is that $4,000 latest hearing aid marvel really the best and only one suitable for your hearing loss? Ask questions.

#3: One question you should ask is about telecoils (t-switch), because your hearing instrument specialist may forget to mention it. If he says you don't need telecoils, ask why. He may say,"Well, you should buy an accessibility kit designed to connect your aid to your TVs, phones and doorbells." Then you can say, "Well, isn't that nice – but sometimes I like to leave the house and I've heard the t-switch will connect me in all sorts of places in the world at large." And then add, "Since I'm already paying a small fortune for this hearing aid, why not throw in that handy-dandy house kit for free?"

#4: When you take out your hearing aids or CI, always put them in a safe place, and preferably the same place.

The safe thing: I put my first-ever hearing aid on my bedside table, where it lay naked and open to the elements. One such element was a very large dog, who ate it. Most of it, anyway; I was able to retrieve bits of springs, screws and casing that clung from the curly hairs around his doggie-mouth. Since that night, my hearing aids sleep in a dry-aid jar. The only place a hearing aid should go – if it's not in the ear – is a safe container. If it must come out during the day, use a closeable container for your purse or upper-body pocket. Do not put hearing aids in any pant pockets which could be sat upon.

Putting technology in the same place cuts down on the inevitable panic when you can't find it. I'm reminded of this every year when I watch a certain CI user, my friend and perennial roommate at hearing loss conferences, looking for her batteries in a cluttered hotel room. She eventually finds them, but the show is always entertaining.

#5: Keep your hearing aids in while eating snacks. Hearing aid dispensers have many stories about clients who – for whatever unfathomable reason – take their hearing aids out while munching away. As their eyes are glued to the television, and their hand moves automatically from the popcorn to their mouth and then back again, they mistakenly grab their aid, pop it into their mouth and chomp down. Please see #5 above about safe places for hearing aids.

#6: Every time you get new hearing aids, it will be like the first time. Everything will be loud. People chewing their food will sound like pigs at a trough. A human nose will whistle like a steam engine. The clattering of knives and forks will send you through the roof, prompting you to ask your family to eat with their hands. What I'm saying is – brace yourself. Things will be quieter in a month. But then, because sounds don't seem as loud, you'll worry that the technology has destroyed a few more decibels of your hearing. Trust me, it hasn't, your brain has just become accustomed to the sound level.

#7: When you see a stranger with hearing technology, pause a moment before commenting. Pointing to your own ears and saying, "Hi there, harda-hearing too, eh?" is leaving you open to a negative reaction. He or she may be at a different stage of the hearing loss journey, and having their aids or cochlear implant pointed out might be embarrassing or grumpy-making. But if you feel comfortable in making the connection, your positive attitude may just make that person's day – and yours.

#8: Here's what a cranky spouse-parent-friend should not say to a person with hearing loss who's struggling in a conversation: "Have you got your hearing aids in?!" Because we usually do, and when we say, "Uh, yes," what's your next line going to be?

#9: Don't try to repair your own hearing devices unless you have taken a certified hearing aid dispenser course. You can change batteries and wax guards, and use that little brush to clean the outside. But do not, under any circumstances, open it up and use tweezers to remove what looks like kaka. There's a high probability the guck is attached to a trip wire that will destroy the whole damn thing. Another no-no is putting the bottom of an in-the-ear aid between your lips and sucking out the earwax. It won't work and you may suck out more than you expected.

#10: If you don't yet use any technology: learn about your hearing loss, learn about hearing aids and other technology, then go get some.

Show the love to your hearing aids and CIs, and they will love you back. Or maybe it's the other way around. Regardless, a beautiful and mutually respectful relationship is definitely possible; like any relationship, there's good stuff and the not so great stuff. There will be days when you think, I'm so done with this! But persevere because, if you need them, life is better with hearing aids or cochlear implants. Your hearing care professional can help – but if you're having a really bad hearing aid day, call me. I'm here for ya.

Dear Mom and Dad

Dear Mommy and Daddy,

I've got a question. The first of about a million I'm gonna ask, but right now I'm only five months old and this first one is important.

Do you know if I can hear you?

And are you sure? Did somebody test my hearing before we all left the hospital - or shortly after? I wouldn't know because, apart from you two, all big people look the same to me – always poking and prodding and checking out my various body parts. So I don't know if someone was checking my hearing or doing something else.

But if my hearing was not checked, you know, don't you, that about 3 in 1,000 Canadian babies born are born with some degree of hearing loss? So maybe you could check into it, like, soon? Although, even though I haven't studied statistics (yet), I'm guessing there's a pretty good chance I'm in with the other 997 (out of a thousand) babies born with "normal" hearing.

But, don't you want to be sure? This is my life we're talking about!

Even though you spend most of your waking hours watching me, a hearing loss is really easy to miss. You probably think, "Oh the little darling, he follows me everywhere with his eyes. He turns when I enter the room. He's a real babbler!"

Well, guess what? I perk up when I see you because you're probably going to feed me! And, I know my mommy's smell and I can feel my daddy's feet pounding the floor when either of them walks to my crib. And, when you smile and do your blah-blah-babbling at me, I do the same back to you, because it's happy time! But I can see why all this might make you think I can hear but … what if I can't?

If there are hearing issues, NOW's the time to do something about it. And, don't get all guilted out if there is a problem; it's not like you did something wrong. (This isn't about you, anyway.) But, I will say, that if you don't have my hearing checked, you might wanna feel bad about that.

When I eventually go to school, I want to be on a level playing field with the other kids. I don't want to be the one going, "Huh – what are ya talking about?" It would take me, like, forever to catch up! This could seriously affect how well I do in school, with my friends – even my career! (It should be clear to you by now that I'm a very bright kid with plans!)

So, back to my first question – do you know for sure that I can hear you? And, if you don't, when will you call the doctor to ask for a test? Thanks for doing this for me, mommy and daddy, I love you to the moon and back.

Little Brucie

PS: One last thing. Next time you take me to the screaming hockey game, and you wrap me up in that blankie, please slap on some earmuffs – to protect whatever hearing I've got.

Up until recently, the average age of detection of a congenital hearing loss was 2½ – the age when progress in language skills usually becomes apparent. But with the advent of Newborn Hearing Screening (NHS), the potential for even a mild hearing loss can be detected almost immediately after birth – before leaving the hospital – with a simple, non-invasive procedure.

Why is this screening important?

A child's first three years are the most critical for learning sounds, and developing speech and language. Language is the glue that connects us to each other – and it's vital to a child's success in the classroom, on the playground and with future endeavors. Children with unaddressed hearing loss, regardless of how mild, are at risk of falling behind other children when they start school. Children with communication challenges that aren't adequately addressed can develop feelings of low self-esteem and frustration which can lead to behavioural problems. In fact, unidentified hearing loss is still often misdiagnosed as behavioural issues, leading to incorrect interventions, often with heartbreaking and long term effects.

If a baby or child has hearing difficulties, early diagnosis and professional intervention will ensure better communication skills, social development and academic performance for the child than if the hearing loss is diagnosed and addressed later.

Unfortunately, universal NHS is not available in all provinces. Ontario, New Brunswick, and British Columbia offer it to all babies, while other provinces are in various stages of implementation, including "considering it." Although babies are routinely tested for ailments far less prevalent than hearing loss, hearing difficulties are often undiagnosed until after the most crucial, formative years for language and social development.

Chances are high that your baby has "normal" hearing. Now your job, as a parent, is to help your child maintain it! In addition to encouraging your child's language development, you need to actively protect your child's hearing, a sense extremely vulnerable to damage. Illness in childhood or later years, acoustic trauma, and prolonged exposure to loud noise, can all contribute to a permanent hearing loss. As your child grows, almost every area of his or her life will have some degree of sound and noise attached to it. Learn how to minimize the risk of noise-induced hearing loss due to overexposure to loud noise.

The Hearing Foundation of Canada has published its Baby's Communication Checklist annually for almost 10 years. This colourful guide offers important information for parents such as communication milestones, ideas for stimulating language development and how to protect your child's precious hearing. You can download it from www.hearingfoundation.ca, or contact us for a copy to be mailed.

Communicating with your baby is one of life's joys. Make the most of it!

Baby's Communication Checklist!

LOOK AND LISTEN AS YOUR BABY DEVELOPS

3 Months

- Is startled by a sudden, loud noise
- Is soothed or calmed by your voice
- Cries, gurgles, grunts

6 Months

- Stirs or awakens to voices when sleeping quietly
- Turns head or moves eyes to find a familiar voice
- Makes different cries for different needs

9 Months

- Responds to his/her name
- Understands common words like "no" and "bye-bye"
- Uses gestures, reaches for items
- Babbles, repeats babbling sounds

12 Months

- Follows simple, single-step instructions
- Combines sounds as if talking
- Consistently uses three to five words
- Uses gestures – waves "bye-bye", shakes head "no"

18 Months

- Minimum of four different consonant sounds – *p, b, m, n, d, g, w, h*
- Points to body parts and pictures in books when asked
- Consistently uses 20 or more words
- Responds with words to simple questions – "where's kitty?", "what's this?"

24 Months

- Follows two-step directions
- Uses 100-150 words
- Begins to speak in 2-word combinations like "mommy shoe!"
- Others can understand child's speech 50-60% percent of the time

30 Months

- Uses action words – laugh, run, drop
- Uses words with two or more syllables - "ba-na-na"
- Has a 350+ word vocabulary

These are guidelines only.

THE hearing foundation OF CANADA

My Baby's Name is:

COMMUNICATING WITH YOUR BABY IS ONE OF LIFE'S JOYS

Babies are individuals who grow at different rates and communicate in unique ways.

As babies grow, their hearing, sight and voices develop into language skills that will affect every aspect of their lives – with friends at play, in school, and future success.

If you have any concerns about your child's hearing or speech, ask your doctor or audiologist.

The Hearing Foundation of Canada
1.866.432.7968
hearingfoundation.ca

HAVE YOUR BABY'S HEARING TESTED

Early detection of hearing loss is important. If newborn hearing screening isn't offered in your hospital, visit a paediatric audiologist for a hearing test for your baby.

ENCOURAGE YOUR CHILD'S LANGUAGE

- I talk, sing and laugh with my baby.
- Music is part of our daily activities.
- We look at books, do many activities and go to new places.
- I name what my baby sees – ball, truck, picture of a flower.
- I tell her what I'm doing – *"Mommy is washing your face." "Daddy's tying your shoes."*
- I use a lot of different words, opposites (in/out) and descriptions (funny, happy, sad).
- I praise my child's efforts to communicate.

PROTECT YOUR BABY'S HEARING

TAKE NOTE! Excessive and continuous noise can affect your child's precious hearing. Avoid over-exposure to noisy toys and use child hearing protection in loud environments.

FUNDING HAS GRACIOUSLY BEEN PROVIDED BY:

Sun Life Financial

Give your child the gift of good communication!

Hearing Loss and Dementia: The Chicken or the Egg?

By Lynne Nieman, Deaf and Hear Alberta

It really doesn't seem fair, does it? Hearing loss, a sad fact of life for almost 40 percent of the population over 65, increases the risk of cognitive decline. Researchers have long known the connection between uncorrected hearing loss and decreased cognitive function (one study found was dated 1989). Sensory function is seen as a strong predictor in later life of individual differences in intellectual function.

Hearing loss is linked with significant differences in brain structure compared to those with normal hearing, in both humans and animals. Since the brain's hearing centres are very close to areas of the brain where dementia first appears, the link is plausible.

However, researchers are unsure as to whether or not the differences in brain structure occurred *before* or *after* hearing loss.

A Johns Hopkins University School of Medicine study found participants with already diminished hearing had accelerated rates of brain deterioration compared to those with normal hearing, as assessed through magnetic resonance imaging (MRI) scans. Study subjects were tracked for 10 years and those with impaired hearing were found to have lost more than an additional cubic centimetre of brain tissue each year.

However, our brain structures don't work in isolation, and the brain zones responsible for sounds and language also play roles in memory. Diminished middle and inferior temporal regions have been linked to early stages of Alzheimer's disease.

Shrinkage in the areas of the brain responsible for sound and speech has often been associated with an "impoverished" auditory cortex, or a lack of stimulation. Another factor is a condition referred to as "cognitive load": because the presence of a hearing loss increases the effort required to recognize speech, less "brain power" is on reserve for storage and later recall of data.

Social isolation and depression are also known to be associated with uncorrected hearing impairment, which may present as reduced cognitive functioning or "pseudodementia," causing damage to those parts of the cerebral cortex involved in auditory processing.

Controlled studies to prove whether hearing devices slow or inhibit cognitive decline have yet to be done. However, corrected hearing loss can certainly add to enjoyment and improvement in quality of life. So, in order to stave off progressive decline in cognitive functioning, older adults are encouraged to attend to their hearing loss, and gather their friends and family around them for a little socialization and auditory stimulation!

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What's Wrong with this Picture?

The Portrayal of Deaf People in Movies

By Daniel Basch-Tétreault

About the Author

Daniel Basch-Tétreault was born profoundly deaf, but learned to lipread and speak. He graduated with a diploma in Information and Library Technology from John Abbott College. He was diagnosed with Asperger's syndrome (on the autism spectrum) in his late teens. His interests are comics and writing. In addition to his blog, Sunday Comics Debt (http://sundaycomicsdebt.blogspot.ca/), he is also a frequent contributor to the parody site Square Root of Garfield Minus Garfield (http://www.mezzacotta.net/garfield/author.php?author=90). He currently resides in Dorval, Quebec and is an enthusiastic volunteer at CHIP (Communicaid for Hearing Impaired Persons, http://hearhear.org/).

I just recently watched *Knowing,* an awful disaster movie starring Nicolas Cage. The destruction scenes are rather unconvincing, and Nicolas Cage winds up being largely ineffective. I don't mind inaccurate sci-fi movies with inane concepts such as digging into the moon's core to find molten gold creatures, or seeding clouds with hurricane-generating pills. But I do expect some kind of intellect to go along with the scene. I enjoy shows better when they're based on **good** bad science, not **bad**, bad science. I want to be *mentally* entertained. When the movie dialogue and script are so painful that I can't bother to make it past the first DVD chapter, that's a bad sign.

But, there was a moment early on when the movie lost me due to the sheer absurdness of the premise. It **wasn't** the scene where the silent girl was writing down numbers that voices were telling her to. It **wasn't** the absurd overblown ritual given to the importance of burying a time capsule. No, what lost me was the exchange between Nicolas Cage and his precocious kid. They were having a conversation, when the father said something to his son behind his back from a distance of maybe 2–3 metres away, and the kid turned around and said something in response before going back inside the house. One scene change later, we find out this kid's been wearing a hearing aid all this time. Then Nicolas

Cage starts doing sign language in front of him, saying how much he loves his kid. Can you tell what's wrong with this picture?

Every other scene prior and after showed no indication that the kid was deaf, other than he was mostly silent. However, when people talk to him, he acts like a normal kid, with no indication that he's even deaf. The only reason he's wearing a hearing aid in the first place is because he's been hearing "voices." That's not a sign of being hard of hearing, that's a sign of schizophrenia. In the end, his deafness is totally irrelevant to the overall plot, and just something the director threw in. For all the effort that Hollywood makes in being sure the details of their background and wardrobe of their characters are accurate right down to the rivets, there are still little niggling things that drive obsessive types nuts. It might be songbirds not being indigenous to the region the story's taking place. It might be weather looking unlike any kind of precipitation. (Hollywood snow looks nothing like real snow) In this case, it's the portrayal of deafness in the movies.

If you want to communicate properly with deaf people, it's important that you face them head on so they can understand you. It's also best if you use gestures to emphasize certain key words, so they'll understand what you're talking about. Nicolas Cage does none of this with his kid. Every other scene of the two of them together or apart, has them talking normally, side by side, as if he's a normally hearing kid. If you're talking to a slightly deaf kid, every little bit helps. No attempt is made to illustrate what Nicolas is talking about in order to make his message clearer.

In real life, even when speakers are told to emphasize their words when talking to a deaf person, chances are they'll very quickly revert back to normal speech when talking to somebody else. Although that second guy is standing right next to the deaf person, the deaf person will have immense trouble understanding, since the speaker is no longer taking the time to talk clearly. Even more aggravating is when they turn away, since people are

so accustomed to hearing conversations in the background that they completely forget that hearing isn't as easy for some of us. Trying to lipread a conversation between two or more people is like watching two movies on opposite sides of the wall. You have no idea which one to look at first, when they're going to pass their next turn, and no idea if something important was said. Using gestures to illustrate your points and replacing difficult words is recommended.

Another movie that gets the details all wrong is *Tin Man*. In it, the main character is born deaf, gets a cochlear implant and when he wakes up in the hospital after his surgery, he can hear the IV tube dripping. This is "impressive," because in reality, it would take a month to heal and then he would need a speech processor and go through rehab first. After getting speech therapy, in a very short time he speaks as well as a hearing person. Again, this is impossible since he was born deaf, and most deaf people have a certain accent to their speech. Then he makes a phone call and says he got his ears fixed. Just because you can "hear" doesn't mean you can correctly decipher everything properly. You've got to learn how to sort out all the normal noise from the background noise as well as other annoying sounds that can't be filtered out.

Part of the reason there's not much accurate display of deaf people is that there's a very vocal group who worry about losing any of their Deaf culture. The belief is that if deaf children start learning how to use oral speech, their sign language will die out, and it will wind up being a lost language. While they don't object to people who grow deaf later in life to be fitted for cochlear implants or hearing aids, they're adamant about giving the same benefits to young children just starting to learn language.

Two other movies that commit similar sins portraying the oral approach:

Mr Holland's Opus portrayed the oral approach all wrong. The child doesn't get any hearing aids or speech therapy and yet, he's expected to understand people and to speak normally. It shows sign language as the panacea and oralism as abusive. I can tell you that growing up profoundly deaf, I faced none of the hardship or stigma that would've accompanied typical oral deaf lessons.

The greatest offender is *Children of a Lesser God*, because of the same reasons as above (oralism is abusive, sign language is panacea). Also because the speech therapist who should know better tries to teach a deaf woman to speak at the age of 21, when the prime language learning years are 0 to 5. Not to mention it's almost impossible for a profoundly deaf adult to learn to speak intelligibly if she's never spoken before in her life.

As a movie critic noticed, having a disability gives Hollywood writers license to give them natural superpowers. Blind Samurai can detect the whereabouts of an assassin from creaking floorboards and shallow breathing. Autistic savants can calculate Pi up to a million decimal points. Deaf people can lipread from a distance of 5 miles.

However, the truth is far from the reality. It's actually harder to lipread than it looks. Sue Thomas FB Eye is able to easily understand what people are saying just by looking at them carefully. But even though she's based on a real person, they've taken a lot of liberties with the concept. Oftentimes, the speaker will mumble, or there'll be facial hair blocking the lips, making it harder to make out what they're saying. Even the most experienced lipreader will encounter difficulty, since so many words look alike (carpet/armpit), or the mouth doesn't move much in relation to certain words. A tobacco executive talking about "Nicotine statistics" is equivalent to seeing somebody talking with lockjaw. This isn't necessarily because they're lying through clenched teeth, but rather because the mouth moves so little. Equally hard are suffixes, such as words ending in "ing" or "s." With such few visual cues, I often need input of slight sounds in order to fill in the gaps.

Oftentimes, when I talk to people and I don't understand something, rather than bug them for every time I don't understand a word, I usually just smile and nod, pretending I understood, so I can get the conversation moving along in the hopes that I'll pick up the pieces later. It's often a struggle to put everything together, and I usually ask for a summary after everything's over. Maybe that's why movies with deaf people are so unrealistic – the conversation would grind to an absolute standstill if everybody had to slow down, repeat and rephrase everything. Even I would be annoyed at how slowly the plot was moving along.

How Hearing Systems Enhance Listening In Public Spaces

There is nothing more challenging that trying to hear, or be heard, in public spaces such as classrooms, auditorium and churches. These venues pose real problems for people who are hard of hearing.

Yet, technological solutions have existed for decades, allowing a speaker's words to transmit directly to a hearing aid, bypassing distracting and ambient noises. These solutions are available in many countries, particularly in Europe, but sadly, Canada continues to lag behind.

Unlike in Europe and the U.S., which is governed by the Americans with Disabilities Act, Canada has almost no legal requirements requiring hearing-assistance systems in public spaces. Further compounding the problem is that too many modern hearing aids lack the ability to access directly the signals from the hearing-assistance systems.

"Compared to Europe, compared to United States, we're actually lagging with respect to access for people with hearing loss," said Peter Stelmacovich, FM and sound field product manager for Phonak Canada. "It's kind of embarrassing really."

What's On the Market

The FM system, which involves transmitting a radio signal, is one of three popular methods for providing hearing assistance in public spaces. The others are infrared and audio induction or hearing loops. As its name implies, infrared transmits signals of infrared light. Hearing loops, meanwhile, transmit sound signals through a wire loop strategically placed around a room.

Each system has its advantages and disadvantages. An FM system is easiest to set up but requires a special receiver as well as headphones or a neck loop. Infrared signals cannot penetrate walls; that makes them secure but also means the signals can be easily interrupted. Hearing loops are simplest for users and venue owners because users only have to turn on the telecoil switches on their hearing aids. Venue owners have little involvement beyond the original installation. Hearing aids with telecoils (about 70% of all hearing aids sold today) work directly with the hearing loop. Others needing assistance can use a hearing loop receiver. Loops can be more cumbersome to install, especially in a finished room.

"There's no definitive answer as to which is the best," said Wilf Langevin, president of Thorvin Electronics Inc. of Oakville, Ont.

His company sells all three systems, so he is familiar with their relative strengths and weaknesses. "People who are totally tuned into the loop, they think that is the only way to go," Langevin said. "And the others, it's like the Macintosh and the PC guy, you know."

The Scoop on Loops

Bill Droogendyk, proprietor of Better Hearing Solutions in Troy, Ontario, counts among those who favour hearing loop systems over infrared and FM systems.

"As you get more and more hard of hearing people coming into your venue, with FM and infrared you keep adding more and more listening devices. With an induction loop system you don't have to because people wear their own," said Droogendyk, who installed his first loop system in 1983, in his church.

Since then, he has installed about 40 systems: two in Alberta and the rest in Ontario. Most of the systems are in churches. It hasn't been enough work for him to quit his day job at the ArcelorMittal Dofasco Inc. steel mill in Hamilton, where he is a quality systems specialist. However, he sees the potential for it to become a part-time career as he approaches retirement.


Bill Droogendyk

One of his recent installations took place in a small classroom at the Hamilton office of the Canadian Hearing Society. Jill Gittings, a hearing care counsellor with the society, said the system is working very well.

"We also have an FM system that we take out into the community as well," Gittings said. "But it's nice to have something that's installed and up in place here so that people can try this out. The feedback has been positive."

Droogendyk installed another loop system in the lunchroom of Unitron Canada, a hearing aid manufacturer based in Kitchener, Ont. The lunchroom, which seats about 100 people, also doubles as the company's largest meeting room.

"But we also hold seminars and things for the public or for our customers who are audiologists and dispensers. And many of them wear hearing aids," said Sheila Douglas, AuD, an audiologist and technical support manager for Unitron. "So when they come here for meetings and so forth it's nice if they can hear what's going on."

It seems such a natural fit for a company in the hearing business to have such a system in place. So the question is why did it take until 2012 to install it?

"It never occurred to anyone before that we should do it," Douglas said. "One day it occurred to me that we should do it."

She did a little research on the Internet, which led her to Droogendyk. Then it took a couple of years to get budgetary approval for the project, which was in the $2,000 to $3,000 range, and schedule the installation. The latter took a couple of days because it involved lifting up sections of the floor and tucking the wire under baseboards and up the wall in order to make it inconspicuous.

"It's much easier to put these things in when you're building than afterwards obviously," Douglas said.

Her church in Guelph, Ont., for example, is undergoing renovations – an ideal time to install a system. Convincing church officials of the merits of such a system has been a hard sell, however. Part of the problem is that the priest knows her as a guitarist, not a hearing specialist. The church instead has relied on advice from the technicians installing the sound system, who have given assurances that the system will be great even for the hard of hearing.

"They seem to think that people with hearing aids can hear fine with hearing aids," Douglas said. "It's not true but they don't know about hearing. I do. I'm really beating my head against the wall on that one."

Switching Into Systems to a T

Her fellow audiologists must also bear some of the blame for not understanding the benefits of loop systems. Hugh Mitchell, past president of the Victoria chapter of the Canadian Hard of Hearing Association, said the problem there is that the loop technology requires hearing aids with telecoils, otherwise known as T-coils.


Hugh Mitchell

Telecoils were designed originally to improve listening to a telephone receiver. However, telecoils also pick up signals from induction loops.

Many audiologists aren't aware of that, said Mitchell, who has a cochlear implant and uses his T-coil almost daily at the flick of a T-switch.

"I really want audiologists to become more aware of the usefulness of T-switches," Mitchell said. "In my experience, they really don't give much credit to a T-switch; and they don't encourage clients to have them put into their hearing aids. I've heard of an audiologist that told a person that she didn't need it."

Phonak's Stelmacovich, who also has a cochlear implant, said another problem is that modern hearing aids have programmable telecoils that audiologists and hearing instrument practitioners often program at the automatic telecoil setting. That way, the telecoil switches on when the wearer puts the phone to the ear and shuts off automatically when a call is disconnected.

"Unfortunately, if a person wants to utilize these assisted-listening technologies that are out there and they need to put their hearing aid into the telephone program, they have no way of manually getting in there. All they've been provided with is an automatic telephone program," Stelmacovich said. "I think we should get the message out to audiologists and hearing instrument practitioners to remember to add a manual T-coil program so the person can use these wonderful technologies that are out there."

Douglas admitted that she didn't use to order telecoils for her patient's hearing aids because they didn't tend to use them. They often hear fine on the telephone without one. "So there

was no point adding it in there and having one more thing to break down," she said. Many modern hearings aids are also tiny, because patients want them to be inconspicuous, and consequently lack room for telecoils.

"But if loops became a widespread thing, if your patient went to the symphony all the time and the theatre was looped, you'd make sure he had a loop (compatible) system," Douglas said.

Gittings said a problem she frequently encounters is that many of her clients don't even know what technology they're hearing devices are employing. "So I do find with these kinds of systems there does have to be some education around how to use them and how to counsel the person how to use them as well," she said.

Legal Requirements Lacking in Canada

While loop systems are commonplace in Europe, they aren't in Canada. Brian Kon, president of Sterling Frazer Associations, which conducts accessibility audits, said there are no legal requirements in Canada to require hearing-assistance technology in public spaces. The Accessibility for Ontarians with Disabilities Act has a component on the built environment, but its standards have yet to be defined, Kon noted.

"And until that's put through there's actually no law that protects of a person with a disability from a legal perspective other than possibly going through human rights (legislation)," Kon said.

Phonak's Stelmacovich said he's been picking the brains of his counterparts in Europe "to find out how they sell so many of these systems and I sell so few relative to them. But there's a legal requirement in many of the European countries to have this in place."

Tim Archer of North Saanich, B.C., hasn't waited for such legal requirements to take effect in Canada. Following the testing of a mini loop system as a pilot project at a Van City Savings Credit Union branch in Victoria, he recently installed similar systems in 56 branches of the Credit Union. It works similar to a looped room except the range is small, only within a metre or two of the teller where the loop is installed.

The owner of Masters Digital Inc., an audio production company that specializes in sound tracks for Imax movie

documentaries, Archer learned about loop technology while working on a 3-D Imax movie called Just Listen. Narrated by Dame Evelyn Glennie, a Grammy-winning solo percussionist who is also deaf, Just Listen aims to explore the science of sound and the art of listening, Archer said.

"This got us thinking about the best way to present our film about sound and listening to the hard-of-hearing community," Archer said. "And then through our research we discovered audio induction loops."

They also discovered that such systems were practically non-existent in their part of the world. So he and Masters Digital technical employee Mike Shaw founded a new company, Advanced Listening Systems, to install listening loops in various public settings. Potential sites include churches, boardrooms, theatres, and tour buses, although for the latter an FM system might work better, Archer said.

"My personal feeling is I really do like loop technology for a number of reasons. The person with the hearing aid, that hearing aid has been designed built and EQ'd (equalized) for that person. And being able to indiscreetly walk in and just flick over to the T coil is a lot slicker, a lot nicer and it's lot more inconspicuous than having to wear a neck loop or something like that," Archer said.

Phonak Canada doesn't loop rooms, Stelmacovich said. However, neck loops are an option for its FM systems. So far the company has only installed a few of the systems, including one in the Burlington, Ontario, city council chambers.

"Every council member had a microphone already at their desk," Stelmacovich said. "So we didn't need to add new microphones. We just utilized the existing ones."

A ballpark figure for such a system would be around $4,000, including the contractor's markup and cost of installation, he estimated. The Burlington system also included a "Wall Pilot," which enables people who have hearing aids or cochlear implants with built-FM receivers to synchronize easily with the system. "So all I need to do is be on the same channel," Stelmacovich said.

Because FM systems have only a limited number of frequencies, and the signals can pass through walls, multiplex movie theatres prefer to use infrared systems, Stelmacovich said. Unfortunately, those systems often lack

T-coil compatibility, which makes it useless for people with cochlear implants such as himself.

"I've been personally frustrated in that I want to go see some movies, I borrow the infrared system and I can't use it," he said. "It's meant for people with milder losses who have ability to put (headphones) over their ears."

Stelmacovich also prefers FM over induction loops systems because FM's wider frequency response produces superior sound quality, especially with music. However, Droogendyk said that he now uses current-drive amplifiers with his loop systems. "And a current drive amplifier gives you a much flatter frequency response, so actually the intelligibility of a current drive amplifier is much better," Droogendyk said.

Court Attendees Hear Infrared

Langevin, meanwhile, is agnostic toward the technologies, not favouring one over the other. Certain systems, however, suit certain settings better than others.

For example, infrared systems are popular in courtrooms. There infrared's line-of-sight liability becomes an asset because the walls prevent anyone outside the courtroom from listening in. So far, Langevin has sold infrared systems for about 50 Ontario courtrooms "and there's more to go," he said.

Bigger sellers, though, are the FM systems, which he refers to as radio-frequency or RF systems. A basic personal public address package which comes with an amplifier, four receivers, four sets of earphones, a couple of neck loops, and batteries, sells for about $1,200. Installation can be as simple as hooking the transmitter up to the sound system's amplifier. And it would provide adequate coverage for a small meeting room or even a small church, he said.

"We sell an awful lot of them," Langevin said. "We're out of stock most of the time."

His biggest seller, however, is a $250 device from Williams Sound called the Pocketalker, which "amplifies sounds closest to the listener while reducing background noise," according to the Thorvin website. It can be used with earphones, headphones, or a neck loop, the latter for working with a telecoil-equipped device.

"And we have so many people using these things it isn't even funny," Langevin said, although he noted that audiologists are loath to sell the Pocketalker "because it's too cheap."

For Langevin as a businessman, the biggest drawback to all the systems is that once installed, they last for years without needing replacement. "The problem we've got is we've never ever end up selling anybody anything else once they've got one thing because it just keeps on going," he said.

Regardless of their individual preferences, those familiar with the assisted-listening systems sound unanimous in voicing the view that their potential benefit for Canadians is huge. Not only is an aging population becoming increasingly hard of hearing, but in his research Archer found that young people are at risk of hearing damage from using ear buds.

"I think in the next 15 to 20 ears we're going to be looking at a lot more people who are going to be needing hearing aids and devices like loop, FM, and IR systems just to be able to function," Archer said.

Pros and Cons of Hearing Loop, FM, and IR Systems

Three types of systems are available to assist persons with hearing loss in public spaces: hearing loop; radio-frequency; and infrared. The following is a summary of the pros and cons of each system, according to several people familiar with them.

Hearing Loop System

This involves running a wire loop around the space, usually around the perimeter. It can also take the shape of one or more figure 8s to ensure coverage in larger venues or where a concrete floor is reinforced with steel. The loop, which acts as the transmitter, hooks into a special amplifier that connects with the sound system.

Pros: Because the loop transmits directly to hearing aids and cochlear implants equipped with telecoils, people wearing those devices do not require any additional equipment. They just need to switch on their telecoils. A loop system can be used indoors or outdoors.

Cons: People who do not have telecoil equipped hearing aids need a receiver and headphones to pick up the loop signal. Installation of the system can be tricky, especially in a larger existing venue, because the loop is typically placed under flooring. Improper loop design can allow the signal to go beyond the venue and comprise privacy. If not remediated, electro-magnetic interference from electrical equipment may be a problem.

Radio-Frequency System

This is also known by the acronyms RF or FM, the latter referring to frequency modulation, the type of radio transmission most commonly used. The system picks up sound from one or more microphones and transmits by radio to a receiver worn by a person with hearing loss. The receiver then relays that signal to a head set, such as earphones or earbuds, or to a hearing loop worn around the neck. The latter converts the FM signal into a magnetic signal that can be picked up by a hearing aid or a cochlear implant equipped with a telecoil switch.

Pros: An FM or RF system is easy to install. The transmitter plugs into the existing sound system of a venue. It can be used indoors and outdoors. It is also fairly easy to move it to another venue.

Cons: FM listening requires additional equipment: receivers with headphones or neck loops for all patrons requiring hearing assistance. These devices must be handed out to people as they enter the venue and collected upon leaving. They also require maintenance, such as battery charging and cleaning for hygienic reasons, although some have removable washable covers. The extras can add to the cost of a system. Depending on the strength of the signal, it can leak beyond the venue, causing security concerns or interference with another signal at an adjoining venue, such as a classroom. The latter can be rectified by receivers capable of tuning into multiple channels.

Infrared System

This system transmits light signals in the infrared part of the light spectrum typically associated with heat. (Think of night-vision goggles). As a consequence, the signal requires a line of sight, which can be an advantage or a disadvantage.

Pros: Installation is relatively simple. Because the signal cannot penetrate walls, it is ideal for maintaining privacy and security in a venue like a courtroom. Multiple adjoining rooms, such as theatres in a multiplex, can use identical IR systems without interfering with one another.

Cons: Like FM systems, IR listening requires additional equipment: receivers with headphones or neck loops for each and every person requiring hearing assistance. Because the signal is line-of-sight, it can be blocked easily. For that reason, the transmitter is usually placed high on a wall. Sunlight can also interfere with the signal, which can create reception problems in rooms with large windows.

Hearing Loops Help Parishioners Hear "The Good Word"

Nearly three decades ago, Bill Droogendyk was asked by hard of hearing parishioners at his church to find a way to help them hear sermons better.

During his research, he learned that many churches in the Netherlands, where many of his fellow parishioners were from, had installed special systems they could tune their hearing aids into.

"So I did my research and was able to come together with something that sort of worked at that time," Droogendyk said. "And actually the system is still running today."

That system, installed at the Ebenezer Free Reformed Church of Dundas, Ontario, is what is known as an induction audio or hearing loop system. The system transmits a sound signal through a wire loop placed around the perimeter of the church. A special amplifier connected to the sound system feeds the signal to the loop. Hearing aids and cochlear implants pick up that signal when they switch on the telecoil setting used for talking on the telephone.

"So we get this wireless transmission of sound between the loop and the hearing aid," Droogendyk said. "Then it's translated back into an audio signal for the ear by the hearing aid."

Because a microphone picks up sound directly from the speaker, a loop system cuts down on ambient noises that typically produce a cacophony for hard of hearing people in public spaces. "It's as if the microphone on the speaker's desk was directly connected to your ear," Droogendyk said.

Despite their benefits, audio loop systems have been slow to catch on Canada, unlike in Europe, where their use is encouraged by more stringent laws surrounding access for people with disabilities. Droogendyk has managed, however, to install about 40 systems over the years. In doing so, he has learned a lot about how to optimize the loops, enough to establish a part-time business, Better Hearing Solutions, based in Troy, Ontario.

"There was no Internet back then, and publications were rare. In terms of coming to an understanding of how it worked, that took awhile," said Droogendyk, who has a full-time job at the ArcelorMittal Dofasco Inc. steel mill in Hamilton, where he is a quality systems specialist. "I had to write to different places and found there were a few people here and there who knew something."

He contacted people in California and Maryland, for example, and soon learned that installing a loop system was fairly simple. "You've got to get the design and engineering right in terms of signal strength, quality and all those sort of things but the actual installation is not so complicated," Droogendyk said.

As he became more experienced, though, he learned that not every venue is the same. For example, a simple perimeter loop might work well in a 200-seat venue but not be as

Bill Droogendyk at St. Peter's Lutheran Church

effective in a larger space of 500 or more seats. In the latter, as figure 8 configuration works better.

The same idea applies to venues with concrete floors reinforced with steel. "It absorbs the signal, which means we have to give it more power to overcome the absorption," he said. For a recent installation of a conference room in a Toronto office tower, he put in what is called "a phased array loop," like a double figure 8, with two amplifiers to address the signal absorption problem.

Droogendyk has also learned a lot about amplifiers in recent years. In the beginning he would plug in a standard voltage-drive amplifier into the sound system. Then he discovered current-drive amplifiers, which provide a flatter frequency response, improving intelligibility of the sound, he said.

"And I know that for a fact. Not only does everybody say so but I've actually done tests comparing the two by having a hearing impaired person do the listening," Droogendyk said. "And he said, 'Wow, this is a lot clearer.'"

By law, any equipment hooked up to a utility power source has to be Canadian Standards Association certified or meet an equivalent government-approved international standard. So far, Droogendyk has found only two makers of audio-loop manufacturers approved for sale in Canada: Great Britain-based Ampetronic, and Univox, which is based in Sweden. Droogendyk uses either Ampetronic or Univox equipment, depending on the application.

Most of installations so far have been in churches, which Droogendyk figures is because parishioners are motivated to hear the sermon being preached from the pulpit. But a loop system can be installed in almost public place. Systems have even been installed in stadiums, at ticket booths, concession stands, reception counters and in taxi cabs. "Anywhere where there's sound amplification, it's easy to do because you just add it to the system," he said. Stand alone systems can also be installed to help people with hearing loss even where there is no existing acoustic sound system.

Unitron's Moxi Kiss Wins iF Product Design Award 2014

Refined and intelligent design puts Unitron's hearing instrument on the world stage

February 5th, 2014 - Kitchener, Canada – Unitron, a global innovator of advanced hearing solutions, is pleased to announce that its Moxi™ Kiss hearing instrument has won an internationally recognized iF product design award 2014.

For 60 years, the iF product design award has been an internationally recognized label for award-winning design, and the iF brand has become a symbol for outstanding achievements in design. Moxi Kiss was selected as one of this year's winners out of more than 3,200 entries by a jury of experts and renowned designers from all over the world, who evaluated each submission against such criteria as design, quality, finish, choice of materials, degree of innovation and more.

Released to market in March 2013, Moxi Kiss is the first step in a design evolution for Unitron's hearing instruments that will ultimately play out over many years. While the Moxi Kiss product was still on the drawing board, Unitron's product design teams worked with industry-leading designers to study advanced industrial design trends and establish an all-encompassing framework that expresses Unitron's brand essence, and the function and personality of its product families. This industrial design language was instrumental in forming Moxi Kiss' organic, fluid form.

"Moxi Kiss is designed to be as intelligent as it is beautiful," says Ara Talaslian, Vice President of Research & Development, Unitron. "The hearing instrument's outer shell was meticulously designed, including precision of the tooling to the micron level and a G2 curvature to ensure a luxurious finish. Advances in mechanical design ensure Moxi Kiss' internal functionality upholds Unitron's commitment to high fidelity natural sound, providing wearers a high degree of listening comfort even in the most difficult noise environments."

In a recent survey, Unitron customers from several key countries gave Moxi Kiss high marks for satisfaction specifically for comfort on the ear; overall design and shape; and high quality look and feel.

"We are very proud to have Moxi Kiss recognized with an iF product design award. To be selected amongst a field of thousands is indeed an honour, and a clear recognition of our team's focused commitment to creating both an aesthetically pleasing and highly functional hearing instrument," says Jan Metzdorff, Presidentpresident, Unitron. "When we created Moxi Kiss, our goal was to design a hearing instrument that wearers would rate as stylish, discreet and comfortable, and hearing healthcare providers would be proud to represent. I believe we have succeeded in achieving those goals; Moxi Kiss is beautiful in form, powerful in performance, and now, award-winning on the world stage."

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