Finding Quiet by Turning Up the Volume

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Our world is filed with noises, some invited, others not. Voices of conversation, babies crying, music and the warning sounds of car horns and alarms are invited. Externally, the sounds of buses, trucks, motorcycles and the broad low frequency hum of ever present office electronics are not. Multi-speaker televisions, stereos and conveniences devices have overtaken our homes. Our entertainment has become louder without our awareness but with our permission. Digital sound has allowed movie theaters to dramatically boost sound levels without distortion. Needless to say our beloved rock concerts use extreme volume to pump up the crowd and "drive the sound into our inner being" but in doing that they have become painfully loud. Even our "quiet-little-booth-in-the-corner" restaurant is no longer quiet. It seems that we can't escape from excessive noise, which can be problematic and distracting for anyone seeking a little quiet and solitude for concentration, creativity or rest.

Where can we go to find a little quiet? Home? Library? How about the neighborhood park?

Many people, it seems, have given up looking. Instead of seeking quiet time, people are gravitating towards self-directed distraction.

To block out the noise around us we plug-up our ears and turn up the volume. MP3 players, cell phones, personal video game players.... people of all ages use them, not only to keep themselves entertained, but to block out the surrounding noise. Fighting noise with our own self-chosen noise requires us to crank up the volume even louder than the noise we're trying to avoid. In general, it requires about 13 dB of additional volume to begin to block out the outside noise.

The louder the ambient noise, the more we turn up the volume to drown it out. The cycle goes on... louder the outside noise... the louder the self-chosen noise... the volume just gets higher and higher until it becomes disappears into quiet.

Today's iPod and smartphones can generate over 105dB of sound volume through their standard earbuds. External amplifiers can add another 15 dB to 20 dB on top of that. Auditory researchers have shown that exposure to sound levels at or greater than 105 dB for just 5 to 10 minutes per day can lead to permanent hearing loss, and that even infrequent exposure to sounds at 110 dB for more than 1 minute risks greatly increases the risk.

You expect me to listen to my music for just five or ten minutes per day?

Most people seem to feel that they need to block out the outside world for at least 10 hours per day! And the electronics manufacturers are enabling that by providing batteries for our personal-quiet machines that can keep it going for 12 - 18 hours before needing to recharge. Although it doesn't happen quickly... many of these people who are searching for quiet will — unfortunately — find it... and then struggle with it.

Noise Induced Hearing Loss (NIHL) is an insidious process that can take years to present itself. So slow, in fact, that we might not recognize that our hearing has been compromised until, as a Kansas farmer, after a life-time of riding a tractor and operating heavy farm equipment, said... "you don't notice a thing until you don't notice a thing." [1]

NIHL occurs when we are exposed for to sounds that are too loud (85dB or greater, roughly the noise level near a busy intersection or an average hair dryer) for too long. It doesn't matter whether the noise comes from jackhammers, race cars or portable music players, the higher the decibel level of the sound, the shorter the exposure time required for damage.

What's so bad? Lots of people experience hearing loss.

A recent study by researchers at John Hopkins University in Baltimore indicates that one out of every three US adults have a hearing loss. One out of every three! And one out of every five of us, age 12 and above, have a hearing loss great enough to cause problems with understanding verbal communications.[2]

The Centers for Disease Control and Prevention reports that 13 percent of American children between 6 and 19 – more than 5 million young people – have some form of noise-induced hearing loss.[3]

So, with a hearing loss, everything just sounds softer. Right?

No, not at all.

A hearing loss, especially NIHL alters the sound and perspective of what we hear. Music loses its fidelity, voices become mumbled, conversations become strained and difficult along with the relationships with those you‘re talking to. Holding a simple conversation in a favorite restaurant becomes near-impossible.

NIHL generally affects our ability to hear high frequency sounds — like birds singing, children laughing, the whispers of a lover. We have great difficulty hearing the doorbell or telephone ring or even the siren of the police car behind us. We can walk next to a beautiful babbling brook and no longer hear the babble.

A hearing loss means that you can no longer understand many of the things that goes on around you Remember, hearing is about sounds. . . listening is about understanding, and we gain knowledge and maintain relationships through understanding — listening — to each other's words.

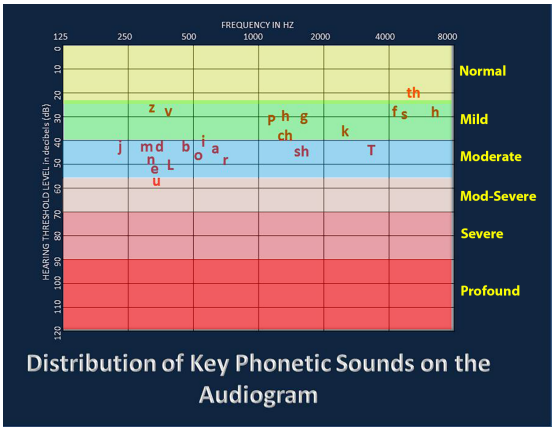

Figure 1: Audiogram showing frequency and volume of vowels and consonants

A high frequency hearing loss diminishes our ability to understand speech and while you may be able to hear someone speaking to you, it becomes difficult to understand the words that are being spoken. This is because most of the consonant sounds (s, p, k, c, d, t, f) are both high in frequency and softly spoken. Consonant sounds are key to speech recognition. For example, a listener with a hearing loss might have difficulty telling the difference between the words \pool \and \tool \or \true\and \new \. Without the introductory consonants these words could sound the same.

The inability to discern the consonants causes people with a high frequency hearing loss to believe that the speaker is mumbling. Asking the speaker to talk louder provides little improvement because by talking louder the vowel sounds tend to get accentuated — not the consonants — doing little to improve the word recognition.

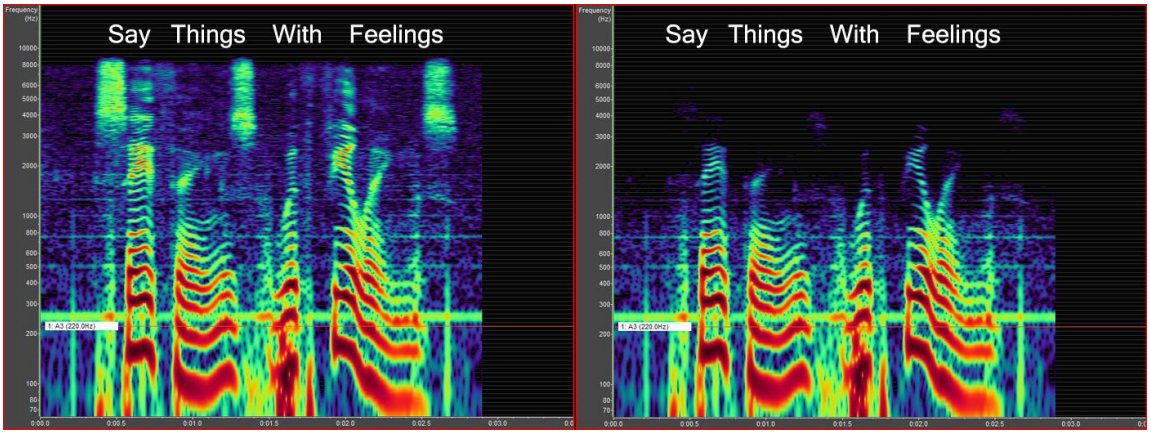

Figure 2: Voice print of Say Things With Feelings - left print demonstrates normal hearing while a moderate to severe high frequency hearing loss is shown in the print on the right.

The voice prints above illustrate the severe reduction of consonant sounds using the phrase 'Say Things With Feelings.' The print on the left illustrates normal hearing with the three \s \sounds and the \f \sound rising up to the 10,000 Hz mark. The print on the left shows the same phrase as heard by an individual with moderate to severe high frequency hearing loss. The consonant sounds have all but disappeared making the phrase difficult to understand.

Without the consonant sounds, the listener is left with only partial words or phrases to work with. This sets up a situation where the listener has to guess (albeit subconsciously) what words are being said. The more familiar the listener is with the context of the message, the better the chance that the guesses will be correct. This fill-in-the-blank scenario is called *prediction* or *auditory closure* and is the natural way that our brain operates when we are listening to a speaker and not fully comprehending the words (e.g.: a speaker with a strange accent, a speech impediment, or the person sitting next to you sneezes at just the wrong moment). Prediction and auditory closure are normal processes regardless of one's hearing abilities. They have to do with the fact that our mind sometimes works faster than the speaker speaks and will not tolerate 'speech holes'.

You might think of this as a giant, ongoing, and dangerous game of Mad Libs© where we are constantly choosing words to fill in the blanks. Dangerous, because if we too often choose the wrong word, we open ourselves to misunderstandings, missed opportunities, and damaged relationships. In fact, Dr. Manny Steil, one of the founders of the International Listening Association, says that "ineffective listening is

considered to be one of the most expensive human shortcomings in today's business environment."

As I mentioned before, hearing is about sounds while listening is about understanding. Hearing is one of our five senses. We hear 24/7 whether we like it or not. Listening, on the other hand, requires work.

We have all, at one time or the other, heard the 'rules' of active and effective listening... pay close attention, 'work' at listening, take meaningful notes, resist external distractions, paraphrase the speaker, keep an open mind, don't draw conclusions until the speaker has finished. These suggestions provide an excellent framework for removing some of the key psychological and environmental barriers to effective listening while improving understanding for the listener with 'normal' hearing.

NIHL can impose additional — physiological and cognitive — barriers, because its difficult to understand what's being said if you can't hear many of the parts of speech. But for all of those with, and to all of those who will eventually have a hearing loss, here are a few simple techniques to increase the effectiveness of your listening:

- Have your hearing tested by a licensed audiologist and determine if you're a candidate for hearing aids. The new digital hearing aids can be programmed to match your hearing loss over the entire hearing frequency range.

- Listener Take Charge^{tm}—the listener needs to take the responsibility for ensuring that he or she understood what the speaker said in both words and context. The speaker has no way of knowing whether the listener understood, misunderstood or just zoned out during the conversation. By assuming the responsibility, the listener can validate what they think they heard with what the speaker meant.

- Be aware that someone is speaking to you. By just nodding when you hear the sound of someone's voice, or providing a very general response, the speaker will assume that the message is received as spoken, often creating serious misunderstandings and their related consequences. Take charge and ensure understanding.

- Don't allow a cross-room conversation. If someone is trying to talk with you from another room, or even from across the room, go to them or ask them to come closer to you. Not being able to see each other eliminates the sensing of the non-verbal parts of the conversation, aside from reduced volume and clarity, and helps to promote misunderstandings.

- Face the speaker head-on. Not only do we gain a lot of information by speech reading, but there are many non-verbal clues that are provided through facial

expression and body language. Missed non-verbals can make a light-hearted joke into a cause for an argument.

- Don't hide the fact that you have difficulty hearing. Speakers are generally quick to accommodate people who are having a difficult time understanding them.
- If you miss a part of the conversation, ask to have it repeated, and if the speed of the talking is too fast, ask the speaker to slow down.
- If you are trying to listen for specific, factual information - such as names, times, places or phone numbers — ask the speaker to repeat the specifics back to you. Many numbers and words sound alike and a misunderstanding could be costly.
- Remember, the purpose of most conversations is to impart information. If you don't understand what's being said, you're not only wasting time, but laying the groundwork for potential problems going forward.

There is some good news, however. Noise induced hearing loss is 100% preventable and is not degenerative — the loss can be stopped — although the damage cannot be undone. Continued noise abuse will exacerbate the loss while moderating one's exposure to loud noises — and interspersing periods of relative quiet — will help to contain the damage.

According to the National Institute on Deafness and Other Communications Disorders (NIDCD), part of the National Institutes of Health (NIH), you can protect your hearing by:

- Knowing which noises can cause damage (those at or above 85 decibels)
- Wear earplugs or other hearing protective devices when involved in a loud activity (special earplugs and earmuffs are available at hardware, sporting goods stores and audiologist offices)
- Be alert to hazardous noise environments
- Protect the ears of children who are too young to protect their own
- Make family, friends, and colleagues aware of the hazards of noise
- If you suspect hearing loss, have a medical examination by an otolaryngologist (a physician who specializes in diseases of the ears, nose, throat, head and neck) and a hearing test by an audiologist (a health professional trained to measure and help individuals deal with hearing loss).

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In the end, it is important to remember that hearing is about sounds, and listening is about understanding. A hearing loss may diminish our ability to hear certain sounds, but we still control the listening process and we can insure that while our ability to hear may be diminished, our ability to understand is not.

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