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Letter to the Editor

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I am a hard of hearing musician, and have experience in audio production. My loss is late onset, and it has progressed over the years from normal hearing to a profound loss. I have been programming my hearing aids for over a decade now, through 5 sets, all from different hearing aid manufacturers, and through all 5 sets of aids, there has been a recurring issue: the audiologists do not know how to properly program the aids. Sound is over processed and it sounds unnatural. The software for each hearing aid manufacturer is different, there is no “standard” graphic interface, and the learning curve for the software is steep.

Part of the problem is the formula that is used to compensate for a hearing loss is not accurate and actually varies from manufacturer to manufacturer. A so-called “first fit” algorithm may be based on any number of assumptions relating to the long term average speech spectrum. They all seem to have in common a roll-off at 6000 Hz and above, assuming that people don't need to hear above 6000Hz. Presumably this high frequency roll-off is to minimize acoustic feedback.

Hearing aids have a shortage of EQ points from 500 Hz on down – note that over half of a piano keyboard is under 500 Hz. And is a “first fit” for speech the same as a “first fit” algorithm for music? No, of course it isn't. Music has a much wider range of sound and it requires a relatively unprocessed sound path with emphasis on low and mid-range fidelity. Although this is more of a hardware problem and not a software programming one, live music requires more front end headroom, with clean analog to digital convertors that can handle music with as little colouration as possible.

A friend of mine asked a very good question: if my cell phone, with earbuds, can play back music with great fidelity, then why can't hearing aids that cost substantially more, do that?

When the hearing aids are first fit to the patient, the audiologist runs it in situ, maybe using a real ear measurement system to double check, makes some minor adjustments, and declares the aids to be "good." Then the patient goes out and discovers the sound processors are too distracting and “hunting,” the feedback managers and sound reducers are making warbling sounds, some sounds are too loud or harsh, certain voices are heard as too loud, there is no low end, etc. Another appointment, is scheduled which takes place in about 2 weeks. The patient comes in but has no way to accurately relate to the dispenser what the issue is – what frequency and at what volume level, so it becomes another round of "try this, and come back." Rinse, repeat, and the patient is soon wondering why they spent so much money on a device that doesn't do what it is supposed to do. They are upset because they expected the aids to work right from the beginning.

In my self-programming experience, every hearing aid’s "recommended" setting has not been what I wound up with. While I was able to use my audio production background and my music studio, with sound samples, musical instruments, real-time analyzers, quality 32 band equalizers, large and powerful loudspeakers, I admit that a lot of the success was gained by educated trial and error.

While I do not want to sound like I have an ax to grind, I offered to share my experiences with a few of the major hearing aid manufactures, but they have not shown any interest. So, if they do not want input from a person who knows the software, has a small audio production studio with the means to conduct real-world tests on the aids he is wearing and make the corresponding adjustments, and who has good critical listening skills, then they certainly won't listen to the complaints of other patients, whose best description of a problem is “Aunt Betsy's voice is too loud.”

The solution has to come from the bottom floor – rethinking hearing aids as not just speech amplification devices but as full range high fidelity amplifiers, and this has to include re-examining some long held concepts about how a hearing aid should work. "The business" has to face a fact: if they provided a service and product that worked properly, there would be no worry about this sort of competition. Even though technology has progressed in leaps and bounds, the hearing aid business has lagged behind, and, distanced itself from the real world of the end user.