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How It Sounds Influences Who Listens

by David Giovannoni and Tim Emmons

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HOW IT SOUNDS INFLUENCES WHO LISTENS

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In our description of nature the purpose is not to disclose the real essence of the phenomena but only to track down, so far as it is possible, relations between the manifold aspects of our experience.
— Niels Bohr

We know that radio listeners select stations based on programming. Appeal — the link between programming and listeners — has been addressed extensively in this column and elsewhere. What we often forget is that the *quality of sound* can also affect listeners' choices. Research shows that the way broadcasters process their sound has a significant influence on who does or does not listen.

For instance, men and women tend to shape their sound differently. You can demonstrate this to yourself by examining the treble controls on the radios (or sound systems) around your home and office. If the treble on the radio or stereo is turned down, chances are it was last listened to by a woman. On the other hand, men — particularly younger men — boost the high frequencies. They tend to prefer a level of treble that many women find annoying. (Both genders prefer more bass than heard naturally, which explains why the loudness button is engaged on every stereo in America.)

I first heard a broadcast engineering consultant mention this phenomenon when I was in college. His point was that engineers should shape a station's sound to be most pleasing to that format's listeners. He said rock and roll was for boys who craved a pounding bass and a sizzling treble; beautiful music was for girls who sought a soothing sound. It sounds sexist I know, but he claimed it worked for his clients. It worked for me on dates. Proof enough.

Of the many other ways to process sound, he continued, compression is certainly the most important. Music — especially classical music — can be soft one second, loud the next. The difference between the loudest passage and the softest passage is called the dynamic range. Compression limits (or compresses) the dynamic range by making the softer parts louder and/or the louder parts softer.

Sometimes compression is necessary for technical reasons. For instance, music on analog disks (standard LPs) is often compressed to accommodate the limitations of the groove/stylus system (a problem overcome on today's compact disks). But, the engineer continued, compression also makes a difference in the number of people listening to the station. Compressing the program signal makes a station stand out. People tuning across the radio dial perceive the compressed signal as louder and clearer than others — and therefore are more likely to listen. In this way, he concluded, appropriate audio processing in the broadcast chain

contributes to a station's audience and profitability.

This was in 1977. At that time NPR's daily programming was distributed over noisy telephone lines that couldn't transmit any sound over five kilohertz (or three kilohertz in the west). National music programs were distributed on open-reel tape. A few short years later, public radio completed its technologically-advanced satellite interconnection system. The quality of sound did not go unappreciated by public broadcasters and their listeners, many of whom were attuned to the technical rigors of classical music.

What about today? Depending on who you talk to, signal processing can either enhance or destroy the quality of a station's sound. Should a public radio station's sound be processed? How? And with what intended effect? This is not a technical column (although I admit to being a techie who has always followed these arguments with interest). However, recent research has demonstrated a significant link between dynamic range and an audience's willingness to listen to classical music on the radio.

Tim Emmons, Program Director at WNIU-FM in Dekalb, Illinois, recounts these findings. His research shows that there is more to the presentation of classical music than selection and announcing.

Forte, Piano, SOS-Tune-Out-O

Last year WNIU commissioned a series of programming focus groups to determine why people tuned out. Our analyses of Arbitron data showed that, while the number of times people tuned in to our station each week was at the national norm, the average duration of each tune-in was short. What were we doing wrong?

When we began our research I expected our problem to be in the selection of music. I expected — and got — musicological answers. "Too heavy. Too abstract. Too vocal. Too strange."

But I also got a simpler answer. Many listeners said they tuned out when the music got "too quiet" or "too loud." They specifically mentioned being irritated with having to adjust the volume all the time to listen comfortably. By being either too loud or too soft, our classical music interrupted their daily activities. As a result, it went unheard.

I had witnessed this phenomenon some 15 years ago while working as a waiter in a high-class restaurant. To enhance the lunch hour atmosphere, my boss tuned in the local public radio station for classical music. But he changed the station in less than a week when the music proved a nuisance. Some passages were so quiet they were below the noise threshold of the lunch crowd. Other passages blasted people out of their chairs. Conversation was impossible. Patrons complained. And for the first time I understood the difference between music for listening and music for accompanying other activities. Restaurant patrons wanted to *hear* music; they didn't want to *listen* to music.

When I went to work at the public radio station, friends of mine would try the station in their businesses. But they had the same complaint — it seemed they spent more time adjusting the volume control than they spent working. I mentioned this phenomenon to the Chief Announcer, who was also a part-time engineer. He wasn't terribly concerned. After all, he said, we were a classical music station and dynamic range was one of

the distinguishing characteristics of classical music. Then he started to tell me about how little the station processed it's signal. When a symphony orchestra played forte, our listeners heard FORTE.

That is, the few listeners we had.

Our research reminds us that radio is an accompanying medium. Our listeners want a program service that doesn't force them to keep fiddling with the volume control. The music we play should be selected with that in mind. An overly-wide dynamic range can make our music unlistenable to people trying to get some work done, eat dinner, or do anything else that requires some degree of (non-musical) concentration.

What would happen if we were to select music based as much on its dynamic range as well as its musicological attributes? What would happen if we were to process our air signals a bit? A few people would notice the difference immediately. You probably know their names already — they're the audiophiles who call to tell you that your left channel seems to be a little bit weak today, or that they heard some distortion six and a half minutes into the final movement of the Beethoven Ninth you played yesterday at 7:36 p.m.

Our remaining listeners would notice nothing different — except, maybe, that they're listening more to our station than before.

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