Response to Johnson and Danhauer

We thank Johnson and Danhauer for pointing out our oversight of calling the ED-NST the CUNY-NST. The nonsense syllable test that we used in the Auriemo et al (2009) study was indeed the Edgerton-Danhauer Nonsense Syllable Test (ED-NST), which we have referenced correctly throughout the manuscript. We also agree with Johnson and Danhauer on the requisite considerations in administering an open-set nonsense syllable test to children. As these considerations are relatively obvious, we assumed all researchers are aware of and account for them in their study designs.

Johnson and Danhauer inquired into the articulation skills of the study participants and the administration of the ED-NST. Like many careful researchers, we were aware of the potential influence that production skills may have on the performance on an open-set test. Thus, we did what Johnson and Danhauer did to make sure that performance on the NST was indeed perceptual and not biased by the articulation skills of the children. All the children in the study were administered the Goldman-Fristoe Test of Articulation by an experienced (20 years) diagnostic speech-language pathologist. This served as a baseline measure and allowed her to determine if the children’s articulation skills were adequate for inclusion into the study. Two children exhibited no articulation errors. The errors observed for the remaining eight children were mainly /w/ and /r/ substitutions and errors with blends. While the articulation errors were noted on word and sentence levels, all the children were able to produce the consonant and vowel sounds in isolation when presented in a CV and VC context. Thus, they were able to produce all the speech sounds in isolation. We indicated that fact on p. 293 (lines 6–7) of the manuscript. We cannot imagine how any reasonable research study would not have considered that potential variable and accounted for it in its design.

Johnson and Danhauer rightfully pointed out the potential difficulties in scoring an open-set test based on auditory input alone. In administering this test to our pediatric subjects, two clinicians were actively involved. An audiologist, outside the test booth, controlled the stimulus presentation. The speech-language pathologist inside the booth and facing the child scored the child’s responses. In addition, responses were audio-recorded for later validation by the speech-language pathologist. This, we felt would ensure the accuracy and validity of the scoring. This has been our standard protocol when testing pediatric subjects for some time. Indeed, even in our adult test protocol, the study clinician always faced the test subjects as the test subjects spoke into a hanging microphone inside the booth.

Johnson and Danhauer questioned our thoroughness in the presentation of our methods section and the Journal for “missing the points raised…” in their letter. We can appreciate Johnson and Danhauer’s motives given their unique involvement with the ED-NST. Perhaps we could have provided all the minute details of our study. We did not, because we felt such details were too obvious, we assumed all researchers are aware of and account for them in their study designs. Perhaps we could have presented all the minute details given their unique involvement with the ED-NST.

We are most perplexed by Johnson and Danhauer’s assertion that we compared the NST results between the unaided and aided conditions. We never did. All the NST testing and comparisons were made between the LFT and the no-LFT (and own aid) in the aided condition only. Since the frequency-gain characteristics of the LFT and no-LFT conditions were the same, a comparison between LFT over the no-LFT condition must be a direct result of the LFT processing. Our rationale for testing at the 50 dB HL input level was to examine how LFT compared to no-LFT at a typical conversational level. Our rationale for testing at the 30 dB HL level was to examine if input level would have altered the noted benefit. In other words, we want to examine if there is any additional audibility benefit provided by LFT. This is in line with our long-held belief that a hearing aid’s full benefits (including its features, such as a low compression threshold) cannot be examined simply at the conversational level. In our manuscript, not only did we demonstrate that LFT worked, we also revealed a greater magnitude of LFT improvement in the 30 dB HL condition over the 50 dB HL condition. Audibility of the softer sounds definitely played a part in the improvement—and that audibility benefit resulted from LFT processing.

Johnson and Danhauer questioned our thoroughness on the presentation of our methods section and the Journal for “missing the points raised…” in their letter. We can appreciate Johnson and Danhauer’s motives given their unique involvement with the ED-NST. Perhaps we could have presented all the minute details of our study. We did not, because we felt such details would not be interesting for the majority of readers. There are also practical considerations such as page limitations in a printed journal, making this all but impossible. Thus, we reported what we thought was important and what we thought the readers would not already know. We assumed that any readers interested
in such details would communicate with us. We also trusted the reviewers to request details they felt were critical to the appreciation of the manuscript. We cannot say this for all authors, but our experience with the reviewers at the journal has shown them to be (rightfully) very critical and probing in their reviews.

Johnson and Danhauer also stated in their letter that one of us published another paper (Kuk et al, 2009) without providing a detailed description of the ORCA-NST, despite the fact that we had provided a half-page description of the test and indicated that it was in the peer-review process. Our reasoning was simply because the ORCA-NST was not the focus of the study. We expect people who are interested in the rationale, development, and normalization data of the ORCA-NST test to contact us to obtain such details (which, by the way, have been previously shared in several posters and presentations throughout its development). This, we believe, is what most researchers would have done.

Finally, we agree that many things we take for granted as researchers may not appear apparent to the general readers. Thus, we should all make an effort to provide reasonable details of our studies to the readers. Because none of us can anticipate all the questions that the readers may have, we also rely on the readers to communicate directly with us in order to clarify any queries. We are pleased that we have this opportunity to further expand on the validity of our work.

Francis Kuk, Ph.D.
Jane Auriemmo, Au.D.
Widex Hearing Aid Company

REFERENCE