Editorial

Group versus Individual Data

The concept of groups is central to the research endeavor. We design prospective experiments based on group comparisons, analyze data retrospectively based on assumptions about the distribution of data within and between groups, and teach our students that ultimate truth resides in group comparisons. Implicit in the group paradigm is the assumption that the individual members of the group are all reasonably representative of the group. When an individual subject's data diverge widely from expectation, we sense that such individuals will not contribute appropriately to the group analysis. We are not sure what to do with them except to cast them out.

But two different papers in this issue of JAAA raise some interesting questions about such individuals. In "Loudness Scaling Revisited," Claus Elberling asked whether the results of categorical loudness scaling (e.g., "soft," "comfortable," "too loud") could be predicted from degree of hearing loss. Elberling found that, in 70 percent of hearing-impaired persons, the slope of the loudness function, and therefore the appropriate gain of the hearing aid, could be predicted from the audiometric level with an accuracy corresponding to a ± 5-dB finetuning of gain. But in the remaining 30 percent, there was substantial divergence from prediction. In 12 percent, audiometric level predicted too much gain. Elberling called these individuals "sound addict outliers." It would surely be instructive to search for factors explaining why some individuals diverge, in either direction, from the remainder of both the normal and the hearing-impaired populations. What defines these "outliers" and what can we learn from them?

In a second paper in this issue of JAAA, "Pulsed versus Continuous Tones for Evaluating the Loudness of Tinnitus," Jim Henry and Mary Meikle noted a similar outlier phenomenon when hearing-impaired individuals were asked to match the loudness of tinnitus to either a pulsed or continuous pure-tone signal. Group comparison failed to find a significant difference between the pulsed and continuous conditions, but almost 35 percent of subjects showed a difference of 10 dB or more at one or more test frequencies. Henry and Meikle also termed these individuals "outliers" and noted that the divergence went in both directions. The authors properly caution that, unless group sizes are sufficiently large, group comparisons in tinnitus studies may be biased by the disproportionate presence of such outliers in one or more groups. We may also ask, however, why these anomalies exist and what they can tell us about tinnitus.

In some circumstances, the study of individuals may be as instructive as the study of groups.

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