Editorial
Binaural Aids and Sound Localization: Nothing Is Easy

Conventional wisdom holds that hearing-impaired individuals ought to be able to localize sounds better with two hearing aids than with one. But, in our featured article in this issue of JAAA, three antipodal colleagues: Dennis Byrne, William Noble, and Bernadette LePage show that this may be an oversimplification of a much more complex scenario. They begin by urging an important terminologic distinction between binaural hearing and the bilateral fitting of hearing aids, reminding us that bilateral fittings do not necessarily produce true binaural hearing, and that a unilateral fitting does not necessarily preclude true binaural hearing.

In a group of 87, largely elderly, hearing aid users, Byrne et al measured aided sound localization ability in both the horizontal and vertical planes. Experienced hearing aid users who had been fitted either unilaterally or bilaterally were seated before an array of 20 loudspeakers and asked to identify, by number, the source speaker of a target burst of pulsed pink noise. Results showed that, while there was an overall advantage for persons with bilateral fittings as compared to unilateral fittings, the result was by no means uniform across users. Bilateral advantage was clearly related to degree of hearing loss. For persons with moderate and severe losses, there was a consistent bilateral advantage in localization, but for persons with only mild losses, the unilaterally fitted often did as well as, and sometimes even better than, the bilaterally fitted. Byrne et al conclude:

... for moderate and severe hearing losses (HTLs exceeding about 40 dB), the already substantial case for bilateral fitting is strongly supported by our results. With regard to mild losses, the situation is more complicated. Our results serve as a caution that bilateral fitting may not necessarily be advantageous. It would seem that many such clients will, after experience, get equally good and possibly even better binaural functioning if only one ear is fitted except, perhaps, when listening to very low level signals. (p. 380)

In this very thorough study of sound localization, Byrne et al show how the complex interactions among type of fitting, degree of loss, type of aid, and the intensity level of the signal affect the hearing-aid user's ability to function binaurally. In so doing they remind us, anew, that there are seldom simple answers to complex questions.

James Jerger
Editor-in-Chief