Auditory and Visual Distraction

Depending on the circumstances, multisensory stimulation may be either a blessing or a curse. Hearing-impaired persons in general, and cochlear implant users in particular, derive considerable benefit from the visual cues of the speaker’s face and body in face-to-face speech communication. On the other hand, the faithful basketball fan, intently following the L.A. Lakers–Orlando Magic finals game on television, may view unrelated spousal conversations in the room as an unwelcome distraction.

In this issue of JAAA, the interested reader will find two papers concerned with the effects of distracters: in one case, the effect of an auditory distracter on a visual cognitive task; in the other case, the effect of a visual distracter on an auditory evoked potential.

In the article “Effects of a Cell Phone Conversation on Cognitive Processing Performances,” authors Brett Kemker, Julie Stierwalt, Leonard La Pointe, and Gary Heald of the University of Southern Mississippi and Florida State University, examined the effect of a concurrent cell phone conversation on a battery of cognitive tests in 42 young adult women. In the case of simple, automatic visual cognitive tasks, the effect of the auditory distraction was minimal, but as the difficulty of the visual task increased, the auditory distracter had a greater and greater effect. This auditory distraction effect was particularly evident when the cognitive task involved extensive division of language resources.

In the second article, “The Effect of Visual and Audiovisual Competition on the Auditory N1-P2 Evoked Potential,” authors Jeffrey Weihing, Shannon Daniels, and Frank Musiek of the University of Connecticut, compared the amplitude of the N1-P2 component of the click-evoked potential with and without concomitant visual distraction or combined audiovisual distraction, in 17 young adult women. Results showed a significant effect of audiovisual distraction and a borderline effect of visual distraction on the evoked potential amplitude.

Both articles emphasize the important role of distracters both on laboratory and clinical measures and on important activities in daily life. The effect of the audiovisual distracters on the auditory evoked potential emphasizes a fact seldom considered seriously in the testing of both children and adults in the clinic, the effect of the total auditory and visual environment on basic diagnostic measures.

Similarly, the effect of auditory distraction on the performance of complex cognitive tasks highlights the need to establish guidelines to assure safety in situations where multisensory cues are in conflict.

James Jerger
Editor-in-Chief

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