Colleagues in search of the elusive electrophysiologic marker for central auditory processing disorder (CAPD) will be encouraged by two papers in this issue of JAAA. In the study entitled “Mismatch Negativity to Acoustic Differences Not Differentiated Behaviorally,” authors Susan Dalebout and Janet Stack, of the University of Virginia, compared behavioral responses, mismatch negativity (MMN) responses, and P_{300} responses to stimulus pairs along a continuum from /da/ to /ga/. Pairs represented acoustic differences both within categories and across the categorical boundary. The important result was that an MMN response was present not only for pairs that could be discriminated behaviorally but also for pairs that could not be behaviorally differentiated. In contrast, the P_{300} response was only evident for pairs that could be readily differentiated behaviorally. These results affirm that the MMN response reflects processing at the level of acoustic rather than phonemic analysis. As the authors point out, this property has the potential to permit one to identify individuals with true “auditory processing” problems and to differentiate them from individuals whose deficits originate at higher levels of processing (e.g., linguistic, cognitive, attentional).

In the second paper of interest to students of CAPD, “Interactions among Variables in the P_{300} Response to a Continuous Performance Task,” authors Mimi Salamat, of Texas Tech University, and David McPherson, of Brigham Young University, investigated the effect of varying the interstimulus interval (ISI) on the P_{300} response within the framework of an auditory task requiring the continuous monitoring of both target and nontarget signals. They showed that by varying the ISI, they could manipulate the effects of sustained attention and vigilance on the amplitude and latency of the P_{300} response. This suggests a possible technique for differentiating true auditory processing disorder from attentional deficit disorder by examining the effects of systematic ISI variation on the P_{300} response.

As contributions like these accumulate, we can begin to envision a sequence of electrophysiologic measures designed to identify problems at every level of processing of the auditory signal and to differentiate auditory from extra-auditory deficits.

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