## Comments

### Comment by Pressnitzer and Winter:

Your data show clearly that manipulating the context before and after a sound can eliminate across-channel CMR. This result is not, in our view, contradictory with a low-level basis for across-channel CMR. Broadband, fast-acting inhibition in the CN (Pressnitzer *et al.* 2001, Winter *et al.,* this meeting) provides a simple way to enhance the neural representation of a signal embedded in comodulated noise. This neural representation then reaches other processing stages where we hypothesize that it will be exploited in different ways according to the context and the task at hand. For instance, the provision of strong grouping cues, conflicting with grouping on the basis of comodulation alone, might change the way the listener will perform the signal detection task.

### Reply:

We agree that fast-acting inhibition (at peripheral level) may provide a simple way to enhance the neural representation of a signal embedded in comodulated noise. However, it is still unclear to us to what extent these effects can be related to the perceptual results obtained in across-channel CMR. If the enhancement occurs at a peripheral level, then it is unclear why the presence of sounds that are spectrally remote from, and occur later in time than, the signal should affect our ability to make use of that enhancement. This would contradict the almost-universal finding that spectrally remote and nonsimultaneous sounds produce little or no masking. To us, it seems hard to explain, why the effects of grouping are so different in the broadband versus narrowband configurations, if one assumes that both within- and across channel CMR are "generated" at a peripheral stage of processing. The situation might be more complex and mixed in the intermediate configuration.

### Pressnitzer and Winter:

Our point is not that the pre- and post- cues of your study induce some energetic masking, but rather that they provide grouping cues that influence the detection task. Consider the example of informational masking: manipulation of sounds remote in time and frequency can impair thresholds, and it is useful in this case to distinguish between optimal processing of a peripheral representation and perceptual thresholds (Durlach *et al.* 2003). Grouping cues may change the signal representation in the CN by means of neural feedback, or alter its processing at higher stages. We agree that the difference between narrowband and broadband condition is intriguing. It could reflect a trade-off between the effectiveness of the grouping cues and the stimulus spectral extent. We also agree that there is clearly more to CMR than wideband inhibition in the CN, but the fact that the circuit is consistent with CMR in many cases is an argument that it contributes to the perceptual effect.

Durlach, N. I., Mason, C. R., Kidd, G. Jr., Arbogast, T. L. Colburn, H. S., and Shinn-Cunningham, B. G. (2003) Note on informational masking. J. Acoust. Soc. Am. 113, 2984–2987.

**Dau:**

A comparison with informational masking may in this case be misleading. To our knowledge, the addition of components remote in time from the target and simultaneous maskers have only ever been shown to *enhance* signal detection in an informational masking task, never to deteriorate it, as we found here. Furthermore, informational masking requires some uncertainty as to the content of either the masker or signal. In our case there is none. Thus, to our knowledge, there is no comparable masking paradigm (informational or energetic) that supports the view that a signal can be rendered less detectable by stimuli remote in frequency and time. It is of course possible that brainstem responses are modulated by neural feedback. Whether this provides a basis for the release from CMR remains debatable, given the generally short-term time analysis used in brainstem studies of CMR and the fairly long-term retrograde effects produced by our “post-cursors”.