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Fusion and masking threshold of a tone in narrowband noise

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When comparing different pitch phenomena, it is not clear whether the expression pitch strength points towards a unique perceptive phenomenon or object. As many studies concentrate on one special phenomenon, the question, what is actually judged, seems only implicitly answered. Kubovy and Van Valkenburg (2001) define a perceptual object as "that what is susceptible to figure-ground segregation". Pitch plays a major role in these grouping processes. In this context the judgment of pitch strength refers to two perceptual cases. The first one is the pitch strength of a tone-in-noise, i.e. the case where the pitch is linked to a separate contour within the narrowband noise (NBN), while the second is the pitch strength of tonal noise. Here, the noise evokes a pitch sensation that is not related to a separate object. In order to explore the transition from case /1 tone-in-noise to case /2 tonal noise, the identification threshold hearing a tone in NBN centered on the tone is determined in a lab experiment. This segregation or fusion threshold is compared to the measured masking threshold for center frequencies 250-4000 Hz octave-wise at 60 dB SPL noise level. The bandwidth of the NBN is varied from 50-250 Hz accordingly.