Stimulus-specific adaptation and deviance detection in the auditory system: experiments and models.

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Created 2/11/2014
By elsc_admin February 11, 2014

Nelken, I. 2014.

Abstract:

Stimulus-specific adaptation (SSA) is the reduction in the response to a common stimulus that does not generalize, or only partially generalizes, to other, rare stimuli. SSA has been proposed to be a correlate of 'deviance detection', an important computational task of sensory systems. SSA is ubiquitous in the auditory system: It is found both in cortex and in subcortical stations, and it has been demonstrated in many mammalian species as well as in birds. A number of models have been suggested in the literature to account for SSA in the auditory domain. In this review, the experimental literature is critically examined in relationship to these models. While current models can all account for auditory SSA to some degree, none is fully compatible with the available findings.

Journal:
Biological cybernetics

Date Published:
2014 Jan 30

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