

# Mechanisms of top-down attentional control in thalamic reticular circuit

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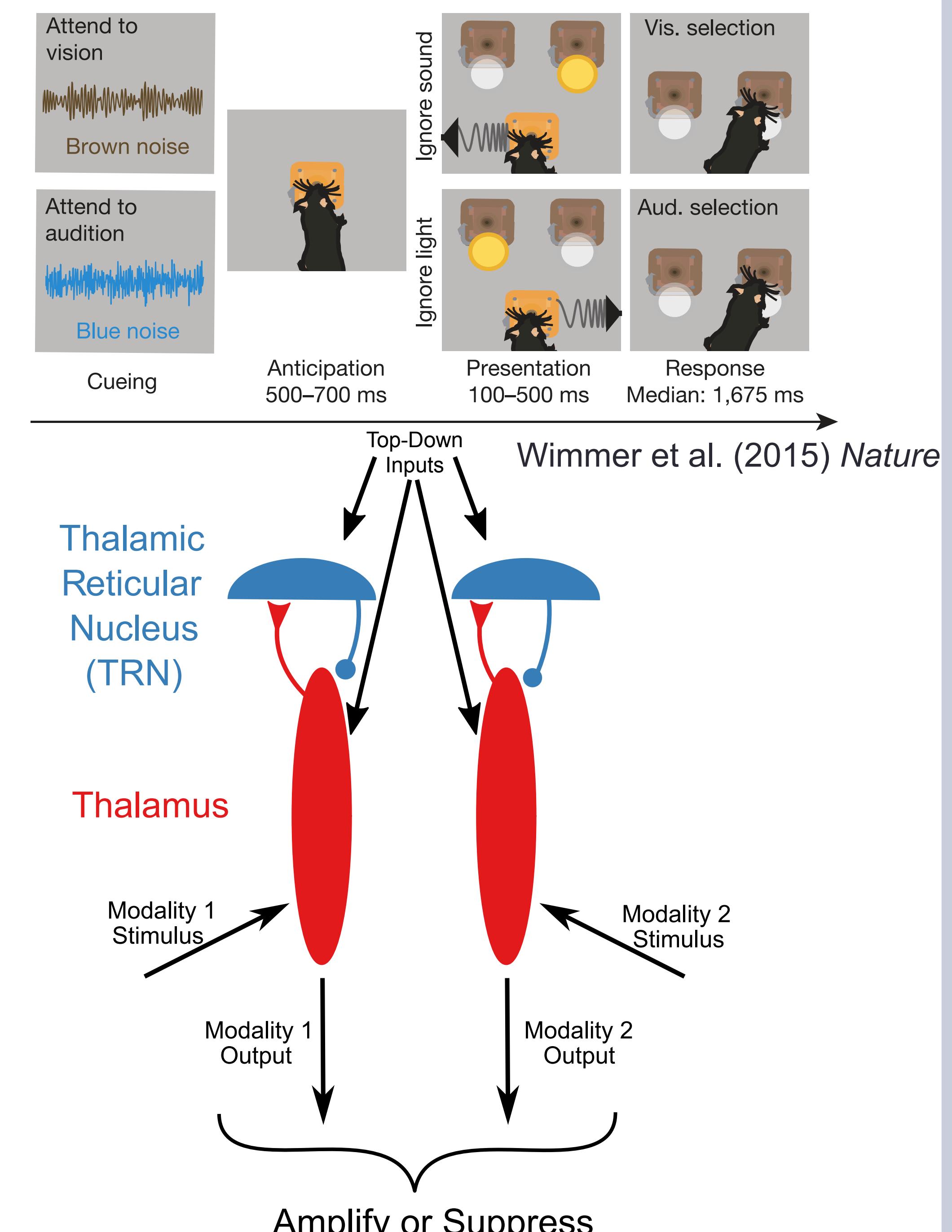
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## Introduction

Attention is a critical cognitive process, allowing us to filter unwanted stimuli and focus on signals important to the current task. Thalamus is a key area for attention and is implicated in neuropsychiatric disorders such as Schizophrenia. There has been a growing body of studies recorded thalamus during behavioral tasks, in combination with pharmacology or optogenetics. A thalamic model in the in-vivo regime that could summarize empirical data and provide predictions is in dire need.

Here, we built a thalamic circuit model in an in-vivo awake state. Well constrained by empirical data, the model provides a framework to synthesize and reconcile distinct empirical findings.

## Attention and top-down control across thalamic modalities



**References:** Halassa et al. (2011) *Nat Neurosci*; Wimmer et al. (2015) *Nature*; Halassa & Acsády (2016) *Trends Neurosci*; Nakajima et al. (2019) *Neuron*; Aizenberg et al. (2019) *Cell Reports*

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