

# How neuronal oscillations code for temporal statistics

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## PROPOSITIONS OF THE THESIS

# HOW NEURONAL OSCILLATIONS CODE FOR TEMPORAL STATISTICS

Sanne ten Oever

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1. The brain uses temporal cues to improve detection as well as to guide categorical perception.
2. Oscillatory patterns in the brain lock to auditory stimuli even when these stimuli are not yet perceived.
3. The brain associates the phase of ongoing oscillations with the features of an external object when this object is systematically presented on this specific phase.
4. The brain and also fMRI measurements are sensitive for timing differences of around 80 milliseconds.
5. Stationarity does not convey new information, but instead it is the temporal dynamics in the environment to which any living creature has to learn to adapt to and to usefully interact with.
6. A big part of learning to program is learning to understand the error messages.
7. For some reason, you have some opaque source of superior knowledge about which scale is the right one for the brain.  
- *M. Helmstaedter*
8. More is Different. - *P.W. Anderson*
9. There's something that doesn't make sense. Let's go and poke it with a stick. - *Doctor Who*