

1 INTRODUCTION

- Recent studies reported phase entrainment of neural oscillations to the rhythm of speech, aligning high excitability phases with informative features [1,2], thereby improving intelligibility [3,4].
- However, in speech, phonetic information generally covaries with spectral energy fluctuations.

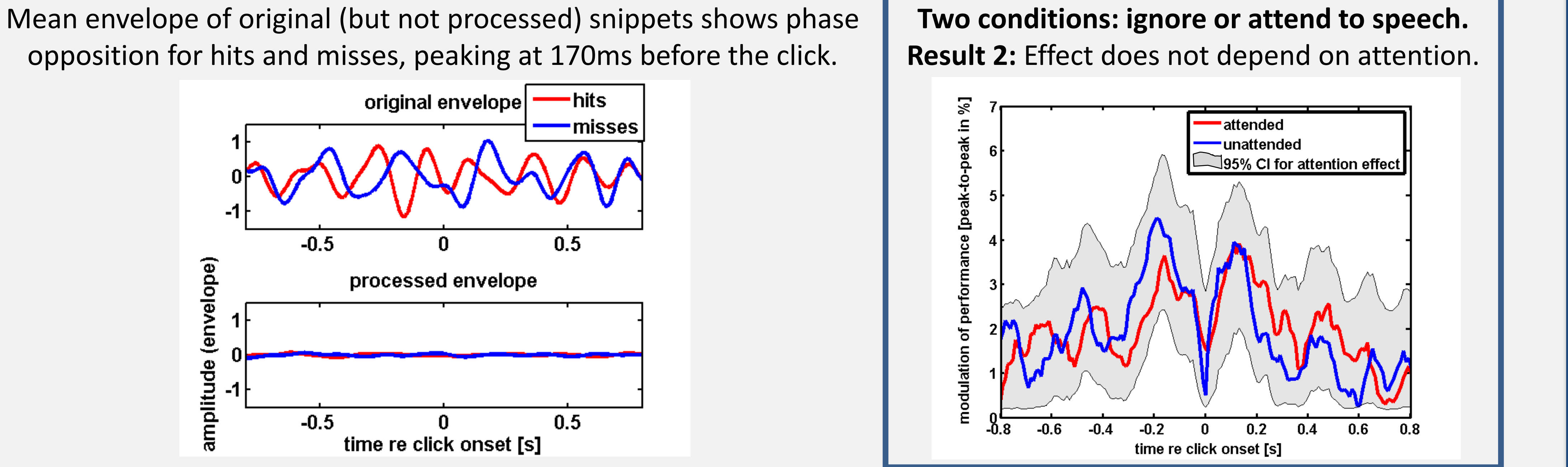
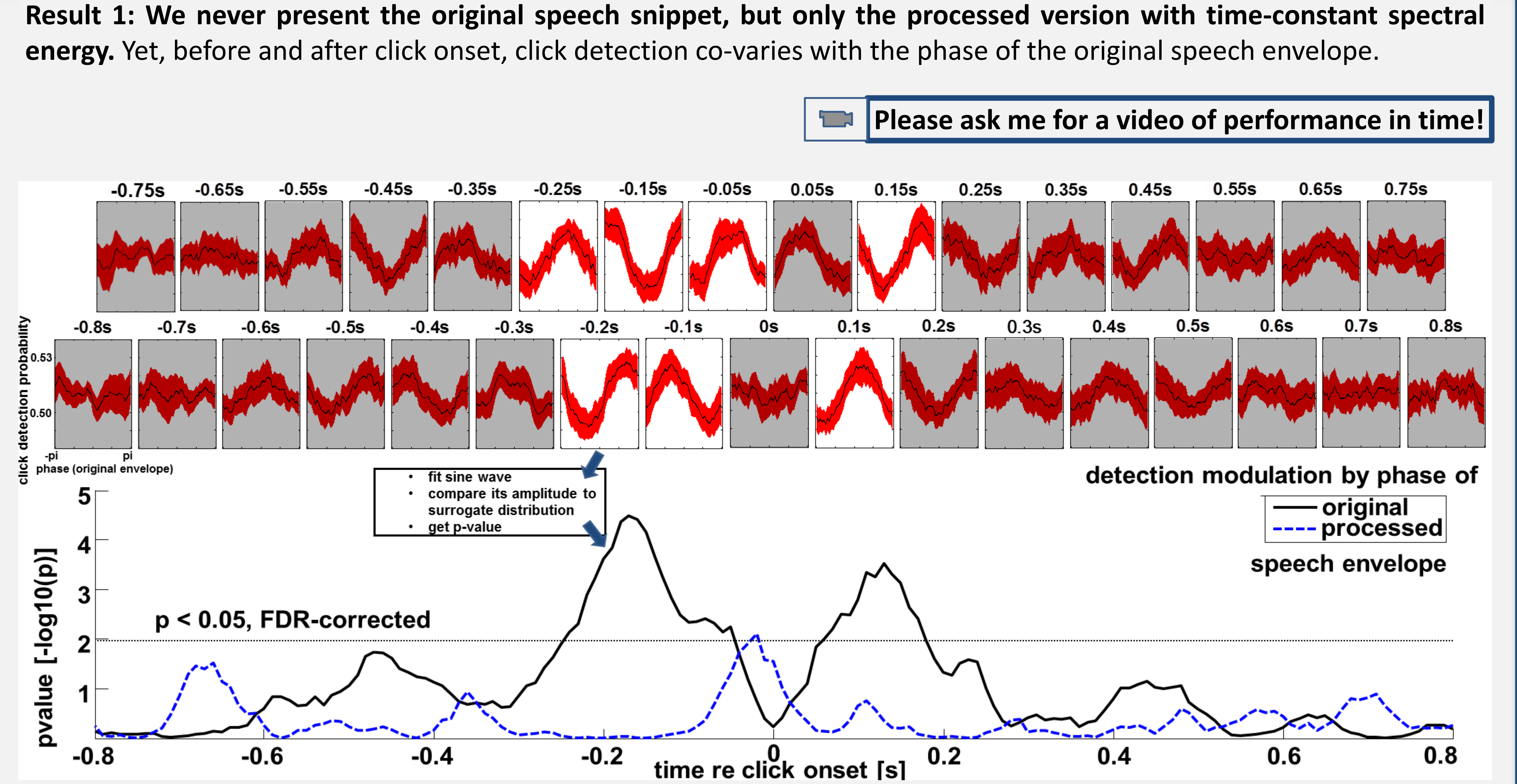
Does perceptual sensitivity truly align to fluctuations in phonetic information (a **high-level** process), or merely to the rhythmic changes in spectral energy (a **low-level** process)?

We disentangled these alternatives by constructing speech/noise stimuli whose spectral energy is statistically comparable over time but which remain intelligible.

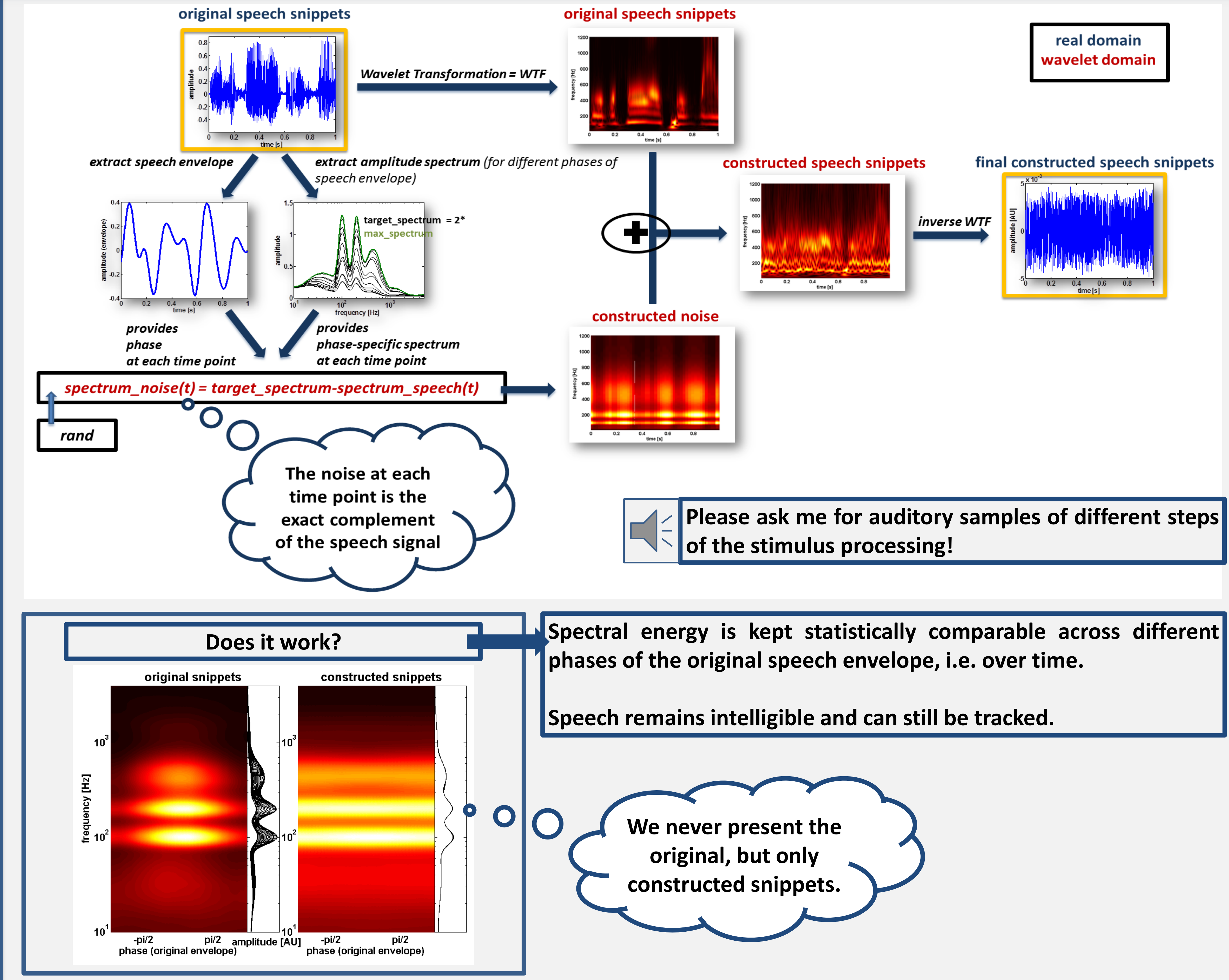
- Phonetic information still fluctuated at ~2-8Hz, providing means for phase entrainment.
- Entrainment was assessed by the probability of detecting a click at random moments during our stimuli (10 subjects).

A dependence of click detection on the original speech envelope would indicate **high-level** phase entrainment.

3 RESULTS



2 STIMULUS CONSTRUCTION



4 DISCUSSION & CONCLUSION

We show for the first time that phase entrainment to speech is possible without fluctuations in spectral energy.

- Supports the notion of auditory ‘sampling’ as a **high-level** process [5].
- Entrainment was found for one cycle of speech envelope only: Might reflect the need for flexible sampling in the auditory system [5].

5 REFERENCES & ACKNOWLEDGEMENTS

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