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Dual-tasking in language: Concurrent production and comprehension interfere at the phonological level

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During conversation, people appear to plan their speech while comprehending others [1]. However, dual-tasking research has shown that both language production and comprehension interfere with, and can be interfered with by, a concurrent non-linguistic task [e.g. 2, 3]. Little research has tested whether language production and comprehension interfere with one another in a dual-task. Here we ask:

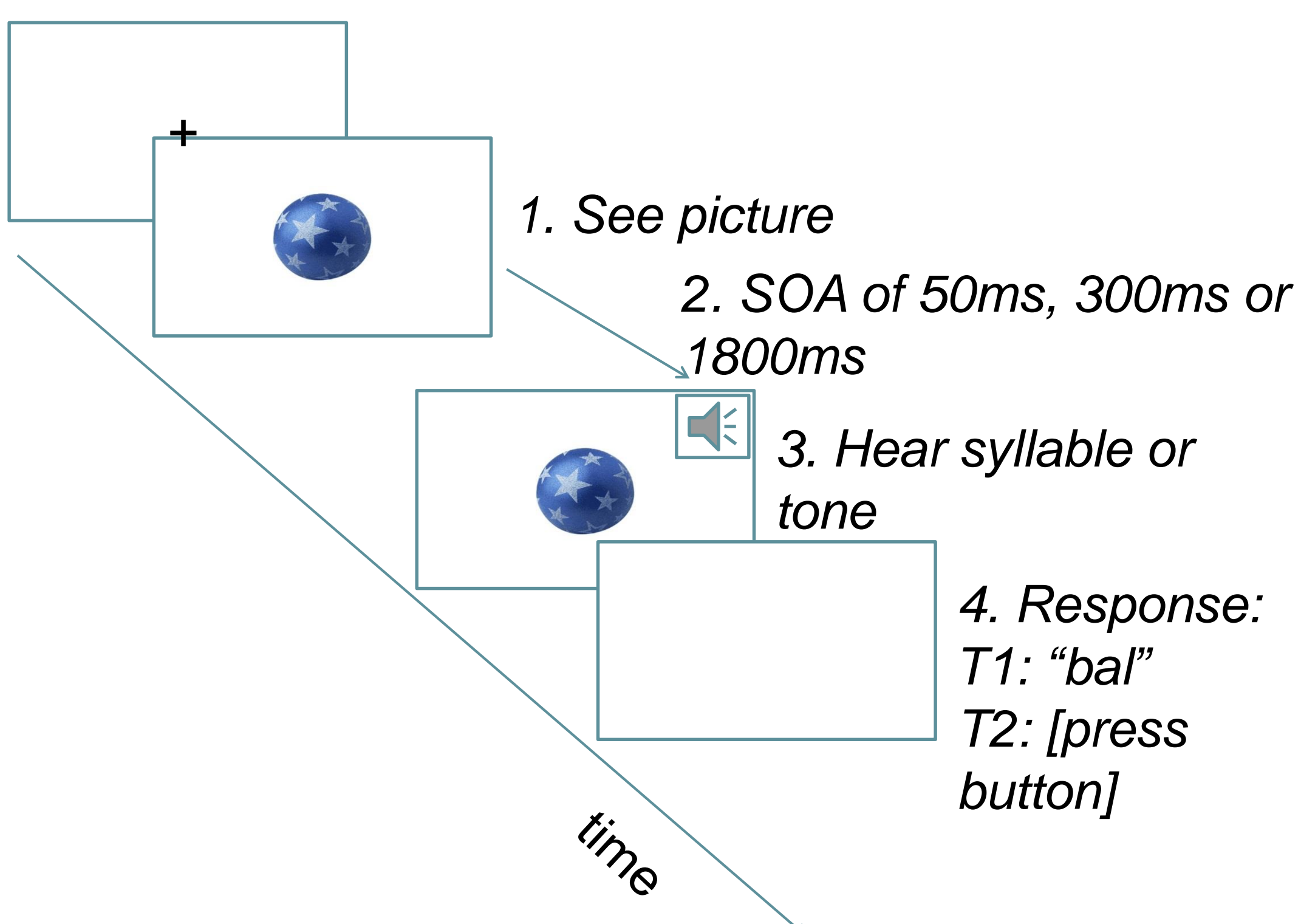
Is there more dual-task interference when word production is combined with a linguistic than with a non-linguistic task?

Experiment 1

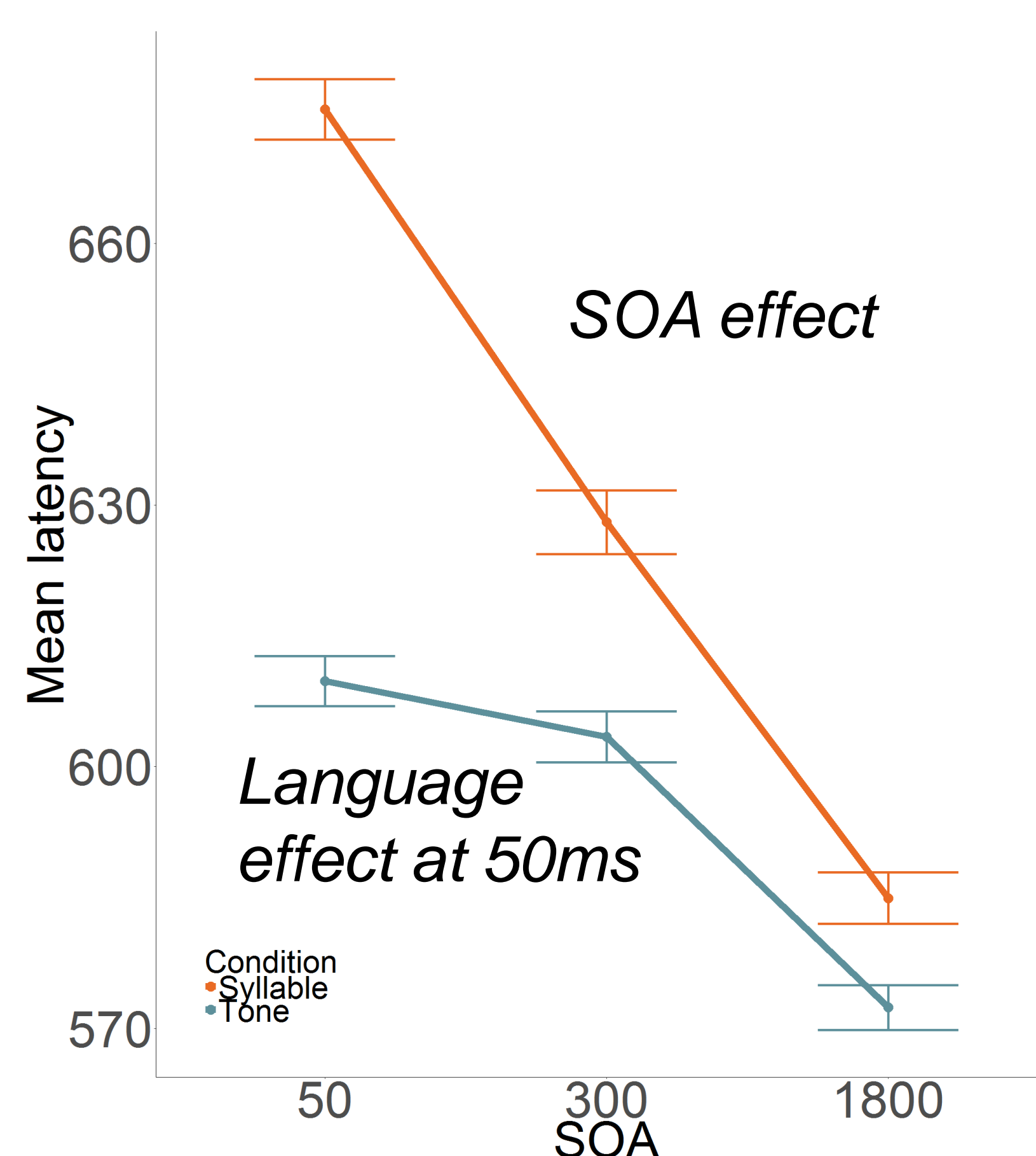
Dual-task:

Task one (T1) – picture naming

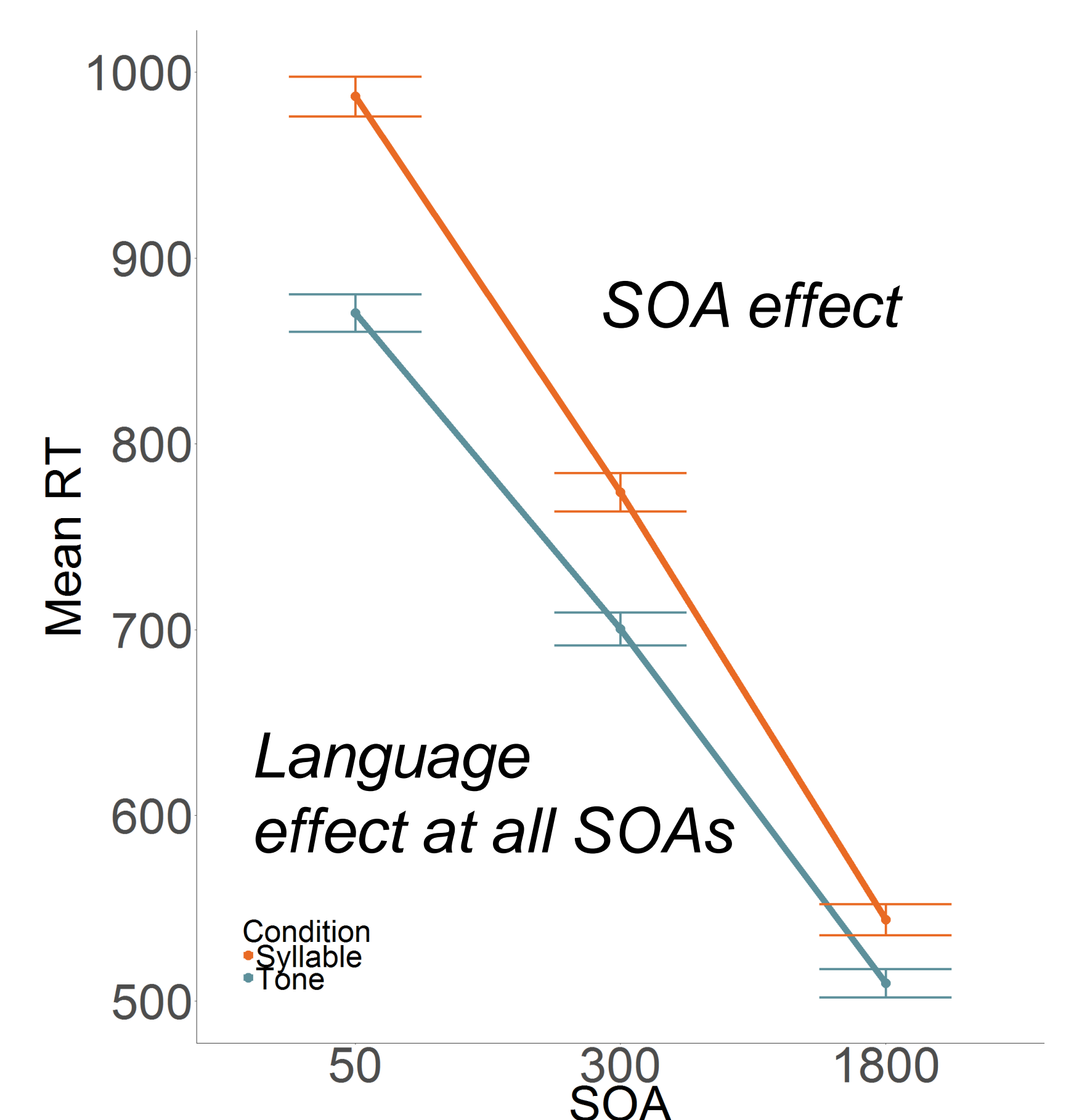
Task two (T2) – syllable or tone identification



T1 – naming latencies



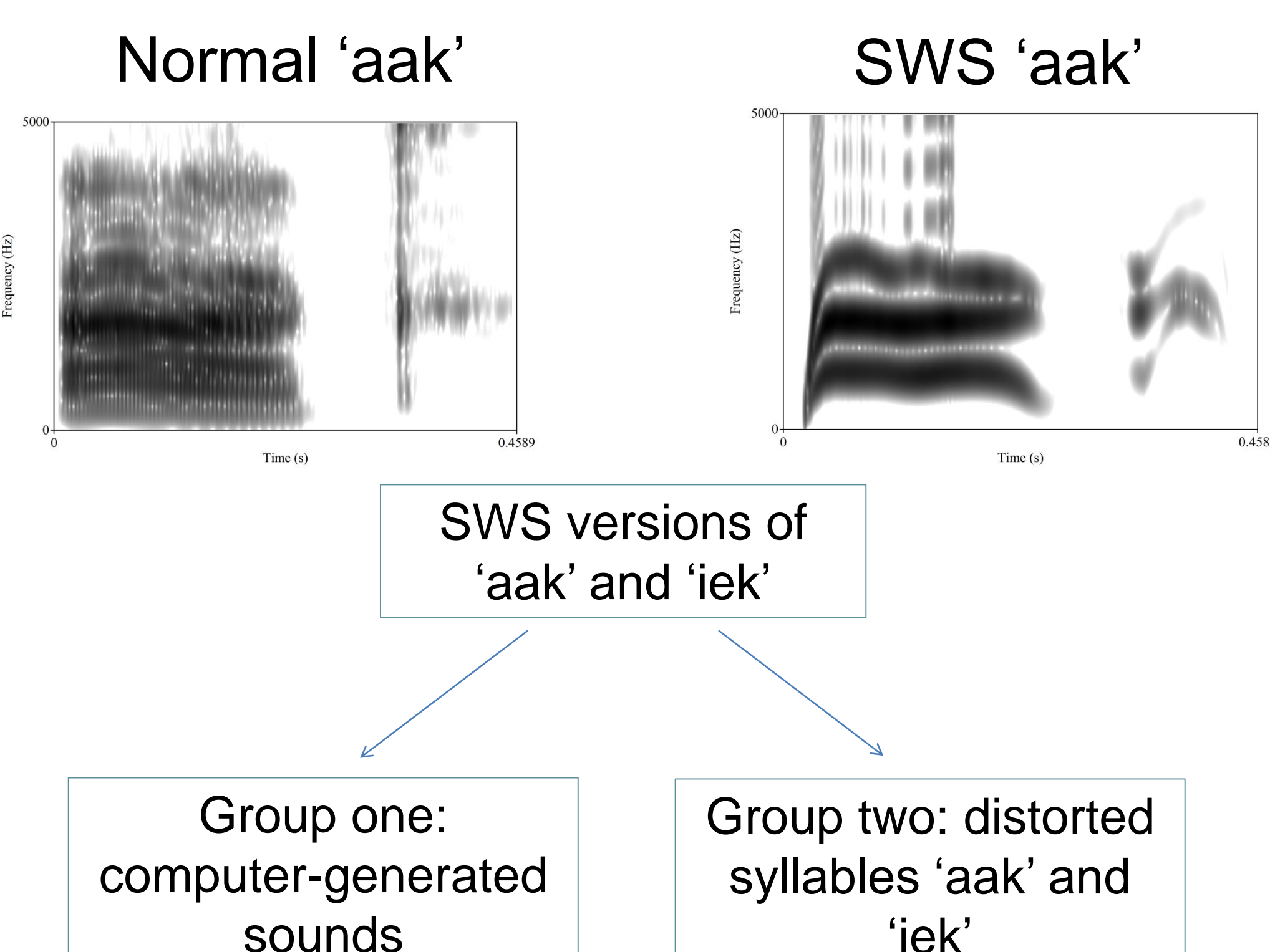
T2 – identification RTs



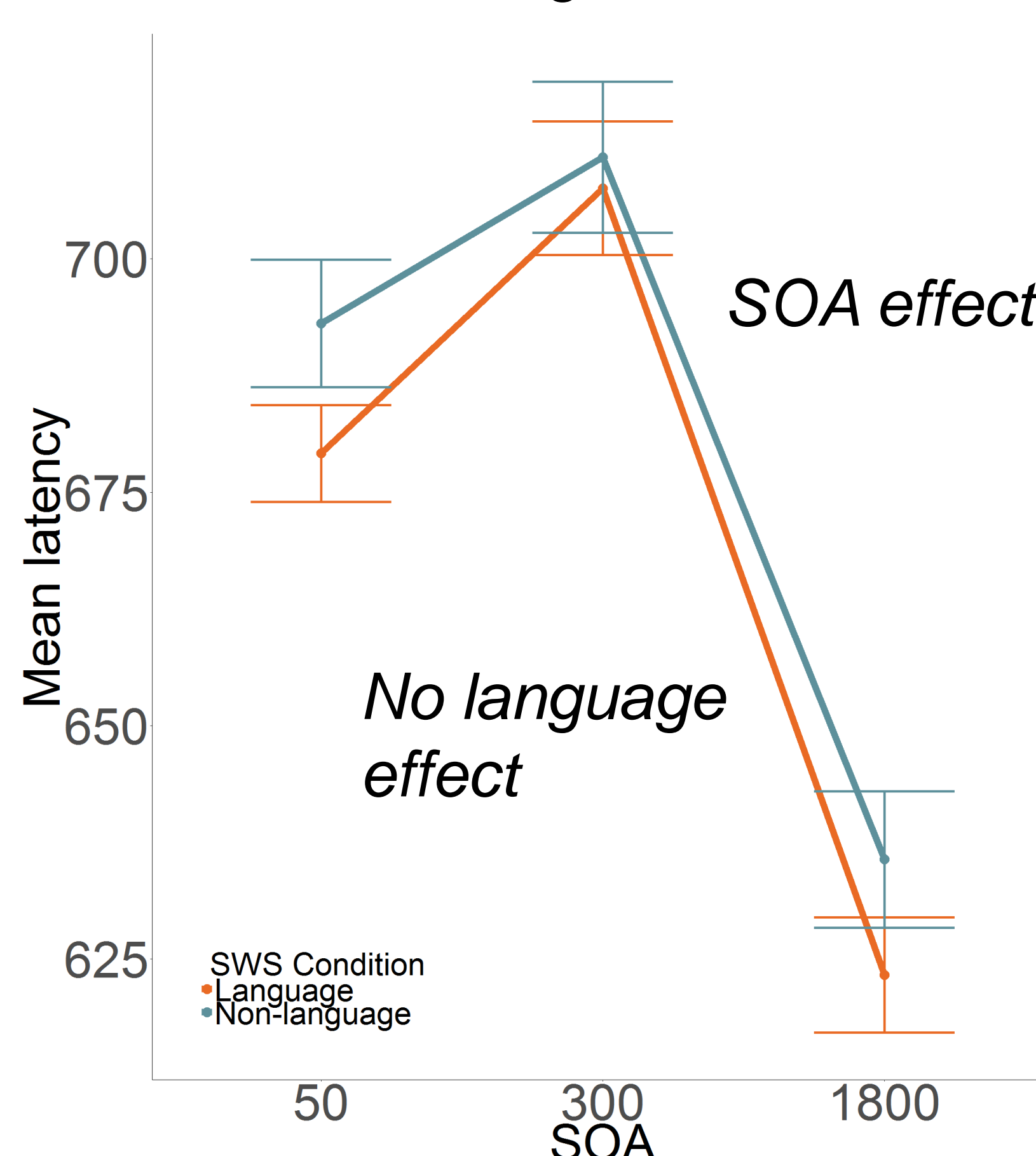
Two linguistic tasks have greater interference at the early SOA in T1, and at all SOAs in T2.

Experiment 2

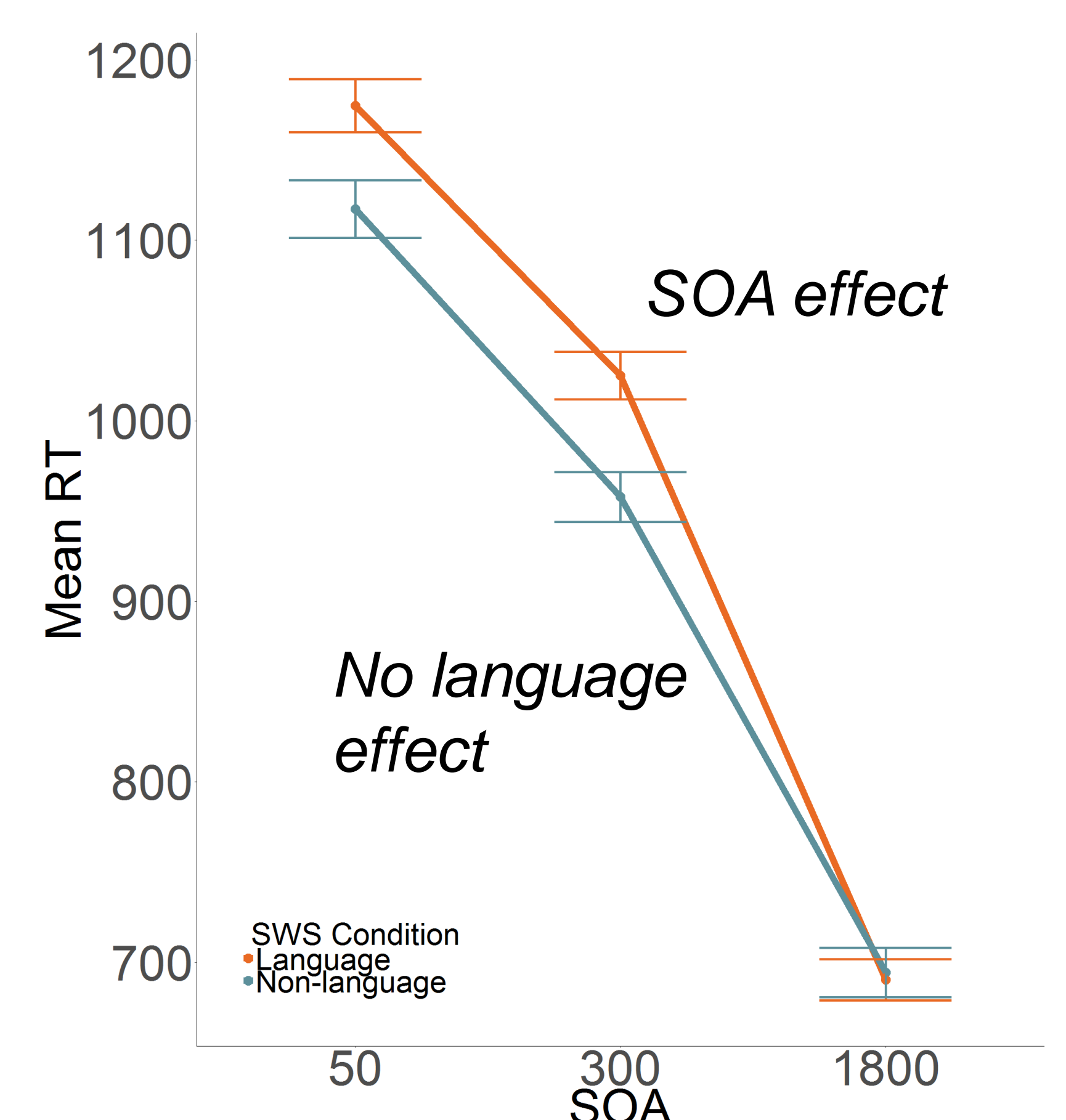
Is the effect due to syllables and tones being acoustically different? To test this, sine-wave speech (SWS) syllables [4] were presented to all participants, with different instructions.



T1 – naming latencies



T2 – identification RTs



Discussion & Conclusion

- There is greater dual-task interference with two linguistic tasks than one linguistic and one non-linguistic task in T1 and T2.
- The null results in Experiment 2 suggest that the complexity of language sounds may contribute to interference, but this is inconclusive.
- As the syllables are non-words without lexical representations, the greater linguistic interference is likely present at the phonological level.

Concurrent linguistic access results in interference in both production and comprehension.