Temporal factors in perception of the voicing contrast:
Immediate semantic effects on speech processing and the L2 learner

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This presentation reports on an ongoing study of the effects of sentence context and local acoustic structure on the online processing of the voicing contrast in L2 with language learners. The study is within the cross modal semantic priming paradigm and examines how subjects categorised a target word which is embedded in various sentential conditions: biased and neutral semantic contexts and a control condition where the target word in isolation is embedded in pink noise. Using the same experimental technique, previous research has found immediate effects of sentence context in identification tasks with L1 speakers (Borsky et al., 1998), but not in lexical decision tasks (Borsky et al. 2000). The subjects are Norwegian learners of English at two different levels of knowledge of the L2 and the visual stimuli were presented in two different temporal conditions, direct offset and slightly delayed in relation to the prime. The target stimuli were from a 6-step GOAT to COAT continuum differing only on the temporal cue for VOT. Preliminary analysis of the data shows an immediate effect of both semantic context and VOT on phoneme categorisation. Biased sentential contexts have faster response times if the VOT values and corresponding target words are congruent with the sentence context. However, response times were longer for mid-value VOTs in the GOAT biased context. Response times for the neutral sentential context and pink noise condition fall throughout the continuum from low to high VOT values, something which may reflect the acoustic structure of the target word. The target words embedded in pink noise have faster responses overall compared with the words embedded in sentential contexts. There is a shift in the categorisation towards the sentence bias for low and high VOT values depending on the sentence bias. The neutral sentential condition and pink noise have identifications in an area between the biased contexts, which clearly indicates the effect of semantic context. Categorisations of extreme VOT values are more congruent in the delayed probe position. No other effects have been found for this condition. The findings give support for an interactive model of speech processing where higher level linguistic information immediately influences phonemic categorisation. The poster will include further discussion of the relationship between the findings and processing models. A control study with L1 speakers of English is currently being conducted and the results will be compared to the findings of the L2 speaker study for a comparison of L1 and L2 spoken language processing.