LLCd Symposium.
SPEAKERS AND PRESENTATIONS.

Name:	Falk Huettig
Affiliation:	Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands. Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, Netherlands.
Brief Bio:	Dr Falk Huettig is currently a research scientist at the Max Planck Institute for Psycholinguistics, Nijmegen, and the Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, Netherlands. He obtained degrees in psychology from Edinburgh University (BSc, MSc) and from York University (PhD). His main interest is the interaction of linguistic systems with other cognitive systems such as attention, vision, and memory. He is an eye-tracking expert but also uses behavioural and neuroscientific techniques. Over the last few years he has investigated the influence of literacy on cognitive processing and brain functioning.
Theme:	Morphology, semantics and syntax
Title of Presentation:	The interaction of reading ability/ formal literacy and semantic processing during language-mediated eye movements in the visual world

Abstract:	The influence of reading ability/formal literacy and semantic processing on spoken language-mediated visual orienting was investigated by using a simple look and listen task which resembles every day behavior. Main measures of interest were the timing of shifts in eye gaze and the magnitude of fixation proportions. In Experiment 1, 42 high (mean age 24 years) and 32 low (mean age 27 years) literates listened to spoken sentences containing a target word (e.g., 'magar', crocodile) while at the same time looking at a visual display of four objects (a phonological competitor of the target word, e.g., 'matar', peas; a semantic competitor, e.g., 'kachuwa', turtle, and two unrelated distractors). In Experiment 2 the semantic competitor was replaced with another unrelated distractor. Both groups of participants shifted their eye gaze to the semantic competitors (Experiment 1). In both experiments high literates shifted their eye gaze towards phonological competitors (which always shared at least the first two phonemes with the spoken target word) as soon as phonological information became available (and before they preferentially fixated the semantic competitors) and moved their eyes away as soon as the acoustic information mismatched. Low literates in contrast only used phonological information when semantic matches between spoken word and visual referent were impossible (Experiment 2) but in contrast to high literates these phonologically-mediated shifts in eye gaze were not closely time-locked to the speech input. In Experiment 3, anticipatory eye gaze of low literates (with up to 5 years of schooling) was compared with high literates. Importantly, both

groups were matched on non-verbal IQ (Raven's matrices). A word reading test established low and high levels of reading proficiency. Sentences were constructed so that participants could only use semantic information from the sentential context for prediction. High literates (but not low literates) initiated eye movements to the target objects well before target onset. Overall, these findings indicate that low literates achieve word-object mapping primarily at the semantic level but appear to be unable to use this semantic information for online anticipation of up-coming words. I conclude by discussing why formal literacy and reading aptitude may influence phonological and semantic processing and language-mediated prediction, in particular the possibility that literacy may enhance individuals' abilities to generate lexical predictions, abilities that help literates to exploit contextually-relevant predictive information in other situations such as when anticipating which object an interlocutor will refer to next in one's visual environment. Finally, I will discuss the potential relevance of these findings for research on dyslexia.