



FENS Forum 2010 - Amsterdam

- Posters: to be on display from 8:00 to 13:15 in the morning and from 13:30 to 18:45 in the afternoon. Poster sessions run from 09:30 to 13:15 in the morning and from 13:30 to 17:30 in the afternoon. A one hour time block is dedicated to discussion with the authors (authors should be in attendance at their posters as from the time indicated.)
 - For other sessions, time indicates the beginning and end of the sessions.
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Poster board F22 - Wed 07/07/2010, 11:15 - Hall 1

Session 205 - Human cognition 5

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Title Dynamics of early word learning in nine-month-olds: an ERP study

Text What happens in the brain when infants are learning the meaning of words? Only a few studies (Torkildsen et al., 2008; Friedrich & Friederici, 2008) addressed this question, but they focused only on novel word learning, not on the acquisition of infant first words. From behavioral research we know that 12-month-olds can recognize novel exemplars of early typical word categories, but only after training them from nine months on (Schafer, 2005). What happens in the brain during such a training? With event-related potentials, we studied the effect of training context on word comprehension. We manipulated the type/token ratio of the training context (one versus six exemplars). 24 normal-developing Dutch nine-month-olds (+/- 14 days, 12 boys) participated. Twenty easily depictive words were chosen based on parental vocabulary reports for 15-month-olds. All trials consisted of a high-resolution photograph shown for 2200ms, with an acoustic label presented at 1000ms. Each training-test block contrasted two words that did not share initial phonemes or semantic class. The training phase started with six trials of one category, followed by six trials of the second category. Results show more negative responses for the more frequent pairings, consistent with word familiarization studies in older infants (Torkildsen et al., 2008; Friedrich & Friederici, 2008). This increase appears to be larger if the pictures changed. In the test phase we tested word comprehension for novel exemplars with the picture-word mismatch paradigm. Here, we observed a similar N400 as Mills et al. (2005) did for 13-month-olds. German 12-month-olds, however, did not show such an effect (Friedrich & Friederici, 2005). Our study makes it implausible that the latter is due to an immaturity of the N400 mechanism. The N400 was present in Dutch 9-month-olds, even though some parents judged their child not to understand most of the words. There was no interaction by training type, suggesting that type/token ratio does not affect infant word recognition of novel exemplars.

Theme F - Cognition and behaviour
Human cognition and behaviour - Language