



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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First author De Heer, Raymond (poster)

Poster board F109 - Sun 04/07/2010, 14:30 - Hall 1

Session 058 - Neuroethology

Abstract n° 058.4

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Authors De Heer R. C. (1, 2), Mellace M. (1, 2), Van Stipdonk N. W. J. (1) & Spruijt B. M. (1, 2).

Addresses (1) Delta Phenomics, Utrecht, The Netherlands; (2) Faculty of Science, Department Biology, Utrecht University, Utrecht, The Netherlands

Title Age related changes in learning using an automated reversal learning test in a home cage environment

Text Using the home cage as a testing environment has gained more interest in the last decades. It allows studying different motivational systems simultaneously as well as the interaction between them. Furthermore it minimizes the effect of confounding factors of novelty, handling and transportation. Vast advances in computer technology have made it possible to fully automate complex behavioural challenges, so that it is possible to study both spontaneous as well as challenge induced or learned behaviour. In this study we developed a reversal learning task in which mice learn to discriminate between two entrances of a shelter. Using one entrance will lead to switching on a bright light inside the shelter; using the other entrance will have no consequences. We measure both choice behaviour (measured as the accuracy of avoidance responses) as well as latency to leave the shelter after making an incorrect choice. Behavioural responses in this learning paradigm can be disentangled into acquired and spontaneous activity.

Mice were individually housed in PhenoTyper® (Noldus Information Technology, Wageningen, The Netherlands) cages for a period of 14 days. After a period of 4 days the mice were subjected to the reversal learning task, which lasted 9 days in total: 4 days of avoidance conditioning and 4 days of reversal learning, separated by 24 hours in between. We have repeatedly tested several common inbred mouse strains at different ages and we show that it is possible to detect age related changes in this task. Furthermore, this test may be applied in the behavioural profiling of new transgenic animal models for human neurodegenerative disorders like Parkinson's Disease.

Theme F - Cognition and behaviour
Neuroethology