COGNITIVE PSYCHOLOGY DEPARTMENT

WORK IN PROGRESS

Time: 14th December, 2015 (Monday), 10:00
Place: ELTE-PPK, Instutute of Psychology, Izabella utca 46, Révész Géza room (room 301)

SCHEDULE

Sandra Stojić: The effects of hormone levels on performance in tests of mental rotation (PhD)

Richárd Reichardt, Bertalan Polner: Memory for novelty in normal personality and schizotypy (MA, pilot study)

Domicián Kovács, András Szántó, József Venceli, László Kovács, Csaba Pléh, Dániel Czégel: Mental lexicon: two sides of hierarchical organization from big data (MA, pilot study)

Doreen Schrimpf, Sara Świerkosz: Attachment behaviour in dogs (Canis familiaris): The influence of empathy and jealousy (MA, pilot study)

Borbála Tölgyesi, Ágoston Török: Finding competing strategies in response sequences (BA) (In Hungarian)

ABSTRACTS

The effects of hormone levels on performance in tests of mental rotation

Sandra Stojić

Eötvös Loránd University, Faculty of Education and Psychology, Budapest

Tasks in which participants have different performance, based on a gender, are still very frequently replicated. Since the sexual dimorphism is partly caused by hormone levels, it can be expected that female subjects will perform increased success in a typically "female tasks“, when the level of „female hormones“ are very high and vice versa, while according to the organizing effects of testosterone, superiority of male subjects was expected in a typically "male tasks“. The aim of study was to evaluate the results of the mental rotation tasks among men and women (including women in different phases of menstrual cycle) and to determine success of all three groups. Examination was conducted on a sample of students (N = 90, 6 females and 30 males), aged 19-23 years. Statistical analysis of data showed a significant difference in time of performing tasks of mental rotation, regarding to the degree of figure rotation and the type of figure representation but the effect phase and sex was not demonstrated. Although the obtained sequence was the same as the theoretically expected sequence, differences were not statistically significant.

Memory for novelty in normal personality and schizotypy

Richárd Reichardt, Bertalan Polner

Budapest University of Technology and Economics, Faculty of Natural Sciences, Budapest

The mesolimbic dopaminergic system (MDS) is a key structure for motivated behavior. Its mesencephalic cell groups reportedly react to novelty much like they react to reward. It is assumed that improved memory for expected vs. unexpected novel objects, as indicated by increased remember/know rates, reflects the modulation of the hippocampus by the MDS. Dopaminergic neurotransmission is implicated in the Five Factor Model traits, Openness/Intellect and Extraversion and also in delusional ideation. Higher activity in mesencephalic neurons of MDS is assumed to reflect higher trait scores, and inappropriate activation of these neurons could be a factor in delusion formation. The higher activity or the abnormal activation pattern of the MDS could distort the remember/know ratios. We plan to measure O/I&E with a Big Five inventory and schizotypy with the 21-Item PDI, and compare these scores with remember/know ratios from a memory test for expected and unexpected novel pictures.

Mental lexicon: two sides of hierarchical organization from big data

Domicián Kovács[2], András Szántó[2], József Venceli[2], László Kovács[3], Csaba Pléh[4], Dániel Czégel[1]

[1]Institute for Cross-Disciplinary Physics and Complex Systems, Palma de Mallorca
[2]Budapest University of Technology and Economics, Budapest
[3]University of West Hungary, Szombathely
[4]Central European University, Budapest

The objective of this study is to relate the structure of two different human products reflecting the hierarchical organization of the mental lexicon, namely corpus statistics and word association networks. Based on the idea of Altmann et al. (2009), a possible characterization of concreteness/abstractness of words can be obtained from the inter-event time distribution of the given word in the corpus.
On the other hand, recent methods of network science (Czégel & Palla, 2015) make it possible to extract the hierarchical organization of directed and weighted word association networks.
Comparing the hierarchical organization of the mental lexicon obtained from these two methods allows us to identify the common principles governing both of these processes and thus might be associated with general, method-independent features of representation of language.

Attachment behaviour in dogs (Canis familiaris): The influence of empathy and jealousy

Doreen Schrimpf, Sara Świerkosz

Eötvös Loránd University, Department of Ethology; Family Dog Project, Budapest

The aim of this study is to measure dogs' attachment to their owners by means of a Strange Situation Test (SST). The SST shows the subject's differential reaction to the owner and an unfamiliar person (stranger) in a moderately stressful environment. The construct of attachment was first used to explain the affectional bond between a human infant and its caregiver; however, it can be modified and applied to non-human animals as well. Although the SST has been used with dogs before and has demonstrated that their attachment style is similar to that of human infants, it has never been established how much influence factors like emotions have on the dogs' performance in the SST. With this study, we therefore try to determine which effect empathy and jealousy have on the dogs' relationship with their owners.

Finding competing strategies in response sequences

Borbála Tölgyesi, Ágoston Török

Eötvös Loránd University, Budapest
MTA Természettudományi Kutatóközpont Agyi Képalkotó Központ, Budapest

Humans and animals often change their response strategies in real life. Ideally, if the strategies are exclusive, the final response sequences can be broken down to consecutive regimes of different strategies. We present a simple way to analyze competing strategies in a spatial navigation task. Data from 35 participants was collected while they were navigating in a cross-maze task. We looked for egocentric and allocentric response strategies, and compared the mined patterns to simulated data. We also show, that this method can be easily extended and used in other areas.