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CNS 2012 Workshop Proposal
by Ansgar Koene

Workshop Title:
Behaviour Informatics: data bases, data mining and experiments in virtual worlds

Outline:
The goal of this workshop is to explore the desirability and possible implementation of a Behaviour-Informatics platform for the accumulation and sharing of behavioural data, and related analysis tools. Various Neuroinformatics platforms have in recent years been established to facilitate data sharing and integration for digital atlases of brain structure and anatomy, for fMRI and electrophysiology data, for modeling of spiking neural networks and many more. These Neuroinformatics efforts promise to provide a more coherent picture of the complete brain architecture. Similar efforts in behavioural studies would facilitate a more complete understanding of the relation between behavioural traits at the micro and macro levels and their dependence on environmental conditions. In addition to the pooling and standardization of data from behavioural experiments, another pillar of behaviour informatics could be a concerted effort to use virtual environments, like massively multi player games, to gather information on human behaviour in complex dynamic (social) environments with relatively mininmal effort.
If computational NeuroEthology aims to study “the interaction between environment, body and nervous system that results in behavior” then clearly an informatics platform for sharing of behavioural data is just as important as platforms for anatomical and functional neural data.

Introduction: *Ansgar Koene*
Brief pre-view of the topics that will be discussed by the speaker indicating how each talk connects to the bigger picture of Behaviour-Informatics.

Neuro-Informatics: *Pontus Holm (INCF or member of Neuroinformatics Japan Node at RIKEN)*
Overview of what has been achieved in neuro-informatics so far, what it promises to achieve for neuroscience and how it is practically implemented.

Behavioural data mining: *MIT Human Dynamics Lab (Prof. A. Pentland or one of his post-docs)*
Examples of the use of behavioural data bases and data mining techniques for understanding human behaviour.

Real data from Virtual Worlds: *W. Bainbridge (NSF Division of Information and Intelligent Systems or a coauthor of the NSF NetLab Workshop Report or Dmitri Williams of USC Annenberg)*
Virtual Worlds as tool for studying interaction between humans.

Data mining from online games: *M. Szell or S. Thurner*
Quantification of human group behavior in a massively multiplayer online game

Agent based modeling: *Rosaria Conte (or one of her post-docs at CNR Laboratory for Agent-Based Social Simulation, Italy)*
Behaviour databases as basis for agent based modeling to link neuroethological understanding of behavior at the individual level to the ramification of this behaviour when it occurs in groups of

individuals.

Discussion: *Ansgar Koene (moderator), all speakers & audience*
Draft outline of a Behaviour Informatics platform

Speakers:
- Ansgar Koene (RIKEN BSI)
- Pontus Holm (INCF Program Officer; alternate speaker: Prof. Shiro Usui, Neuroinformatics Japan Node at RIKEN BSI or one of his post-docs)
- Prof. A. Pentland (MIT Human Dynamics Lab or one of his post-docs)
- W. Bainbridge (NSF Division of Information and Intelligent Systems; alternate speaker: Dmitri Williams, USC Annenberg)
- M. Szell or S. Thurner (Complex Systems Research Group, Medical University of Vienna)
- Rosaria Conte (or one of her post-docs at CNR Laboratory for Agent-Based Social Simulation, Italy)