

## P01-381 - A MODEL OF MANIC THOUGHT DISORDER USING A SEMANTIC NETWORK AND DISORDERED THREAD SALIENCE

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**Introduction:** Manic Thought Disorder (MTD) is a characteristic clinical feature of mania. In the past, explanations of its pathogenesis have ranged from hypotheses of a disordered lexicon, to the side effects of a fatuous affect. We previously modeled thought disorder in schizophrenia using the notion of threads of thought.

**Objectives:** To examine the nature of MTD to see if it is consistent with the theory of a disordered lexicon alone.

**Aims:** To simulate the mental lexicon and thought generation and examine if computational lesioning experiments could simulate various aspects of MTD.

**Methods:** We modeled the mental lexicon as a semantic network using the programming language *Mathematica*<sup>®</sup>. Thought generation was modeled as a walk along this directed graph. Semantic priming was implemented as assigned weights; these weights in turn determined assignment of salience to threads scanning the network.

**Results:** Assignment of weights to the vertices and/or edges of the graph allows us to simulate the flow and trajectory of speech permitting the replication of features of MTD including pressure of speech, clang associations and flight-of-ideas.

**Conclusions:** Our model of MTD allows us to propose that thought disorder in mania occurs due to an inappropriate assignment of salience to threads scanning the semantic network. Reduction of inappropriate thread salience by antipsychotics must result in a disappearance of MTD. While MTD is interesting to listen to, for anyone, it betrays the underlying mental computational processes involved in the generation of normal thought and MTD and hence very important for psychiatrists and cognitive scientists.