

## Experimental Studies Based on Qualitative and Quantitative Analysis of the Open-Field Activity. Contribution on the Current Questions in the Field of Neuroscience

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Recent advances in Neuroscience are mainly based on the development and use of sophisticated techniques, requiring financial support, education and time. On the other hand, the immense development of the capabilities of digital computers makes possible their use in traditional methods, permitting their contribution to the research on current problems. One of these methods is the open field test. In the present study a computerized method was used, which provides detailed information on open field behaviour and uses mathematical models in order to further characterize the behavioural structure. Furthermore, it is worth noting that the present method provides first the possibility of detailed observation of each specific behavioural response and secondly detailed information on the behavioural

sequence (set of behavioural responses over the time).

In the present context, the method discriminated the behavioural effects induced by psychostimulants (substances mainly related to drug abuse and to certain CNS disorders). In addition it served as a reliable screening test in Psychopharmacology (e.g. discrimination between "typical" and "atypical" antipsychotic drugs). Moreover, using sophisticated mathematical models, the method could be applied to functional or developmental studies.

The advantages of the above mentioned method possibly provides an interface between technique and concept, concerning current questions in the field of Neuroscience.