

# Behavioral toxicology: from historical background to future trends

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## KEY WORDS

Behavioral toxicology; neurotoxins; central nervous system

## SUMMARY

*In the 1960's and 70's some investigators started to use behavioral tests in toxicology, realizing that classical toxicological methods were inadequate to describe the negative effects on workers health caused by workplace neurotoxic exposures. Among the first publications were those of Helena Hänninen, who reported on exposure to CS<sub>2</sub> (24, 22). In clinical examinations, these workers presented severe functional changes to the central nervous system (CNS), although there were no observable signs of frank brain damage. In experimental studies of effects from acute exposures to various chemicals, methods from classical toxicology were definitely not useful. Such investigations were performed with exposure to carbon monoxide and to different solvents. Studies were carried out in the US, Sweden, and Germany, and reported by Richard Stewart (53), Francesco Gamberale (15, 16), and Gerhard Winneke (63). Rapid development followed. Scientists active in behavioral toxicology gathered at various meetings, and in 1982 an international symposium dedicated solely to the use and development of behavioral testing techniques in toxicology was organized by Renato Gilioli. He then used the Scientific Committee of Neurotoxicology and Psychophysiology of the International Commission on Occupational Health as a platform for a series of triennial symposia. The 9<sup>th</sup> meeting was held in Korea 2005, and the 10<sup>th</sup> will be organized in Costa Rica 2008. By providing a basis for the exchange of scientific knowledge and ideas, these symposia have been successful in further advancing the development and application of behavioral techniques in toxicology. This history is presented in some more detail, and a few possibilities for further development of the area will be discussed.*