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Report on the 22nd World Congress of Psychophysiology, IOP 2025

The 22nd World Congress of Psychophysiology, organised by the International Organization of Psychophysiology (IOP) in cooperation with the Jagiellonian University, was held in Kraków from 8 to 11 July 2025. The event gathered around 400 participants from over 40 countries, including leading researchers, early-career scientists, and representatives of technological companies operating at the intersection of cognitive sciences, psychology, psychophysiology, neuropsychology, and medicine.

Professor Robert J. Barry, IOP President and world-renowned authority in psychophysiology noted for his work on electroencephalography (EEG), stimulus processing, and attentional mechanisms, delivered the opening lecture of the congress. His address, "From Prestimulus EEG Oscillations to ERPs and Behaviour in the Go/NoGo Task", presented findings from many years of research on the relationship between brain activity and behaviour in cognitive paradigms.

The International Organization of Psychophysiology is a global scientific association whose mission is to advance research on the relationships between mental processes and the physiological mechanisms of the body. It regularly organises global congresses and scientific symposia, and supports publication of research through its flagship journal, the International Journal of Psychophysiology. Held biennially, the IOP congresses are among the most important international fora for exchanging expertise in the field.

During the four days of sessions, several dozen thematic panels were presented. They covered the latest courses of research in psychophysiology, neuroscience, and experi-

mental psychology. Symposia devoted to individual differences in cognitive control, emotion regulation, and the application of EEG and fMRI in diagnosing disorders of consciousness, personality, and decision-making processes drew significant interest.

A prominent thematic strand concerned the psychophysiology of emotion researching the effects of stress, sleep deprivation, and physical activity on cognitive performance. The programme also featured panels on such emerging technologies in brain research as neuroadaptive educational systems, human–computer interfaces, and methods of non-invasive neuromodulation.

For the first time in the history of the International Organization of Psychophysiology, the agenda included a dedicated panel on the detection of deception. It was chaired by dr John Palmatier of Nova Southeastern University (US), an eminent psychophysiologist and expert in the detection of deception and psychophysiological methods of lie detection.

Dr Palmatier's panel addressed both the theoretical foundations and practical applications of the Comparison Question Test (CQT) and the Concealed Information Test (CIT). The speakers were Professor Robert J. Barry, Professor Jan Widacki, and Michał Widacki. Their presentations discussed the practical limitations of CIT protocols, memory-related factors affecting polygraph examinations, and the framework of Preliminary Process Theory (PPT) explaining the mechanisms underlying physiological responses associated with cognitive and emotional processes in detection of deception tasks.

The inclusion of the panel on the detection of deception represents a significant step in broadening the interdisciplinary profile of the IOP. The combination of neurocognitive theory, analyses of autonomic responses, and research on memory and attention was welcomed with notable approval. Palmatier's session expanded the thematic scope of the congress, opening new options to research into credibility assessment, emotions, and decision-making processes in psychophysiological contexts. Very likely, it was the first time when forensic psychophysiology was formally recognised as a subfield within what is generally construed as psychophysiology.

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