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### Areas of Expertise:

qEEG/ERP Neurofeedback EEG Sonification

### **Research Interests:**

Physiological Sonification, qEEG/ERP & Neurofeedback for Dyslexia, ADHD, Creativity and Peak-Performance, Mobile EEG, Hyperscanning, Virtual reality Neurofeedback

#### **Memberships:**

Society for Applied Neuroscience (SAN)

The British Neuroscience Association (BNA)

British Association for Cognitive Neuroscience (BACN)

# **Tony Steffert**

### **Career Statement:**

For the last 16 years, I have specialised in brain mapping with quantitative electroencephalogram (qEEG) and event related potentials (ERP's) and have recorded more than a thousand people, both for research and clinically. I have worked on a number of research projects, including a 3 year project on ADHD doing gEEG/ERPs and Neurofeedback at Imperial vears College and 3 at Goldsmith doina Neurofeedback with actors, musicians and dancers. My PhD was about the real-time sonification of EEG for Neurofeedback at the Open University.

I record qEEG/ERPs at a clinic in Cambridge and do Neurofeedback training with children and adults with a range of conditions.

I am a consultant on several commercial and research projects using EEG and heart rate variability and have worked on several neuromarketing projects (British Gas and eBay) as well as TV shows 'This morning' at ITV and at the BBC.

I have worked on several art and EEG projects, controlling video, Lasers and sound with EEG and EEG Hyperscanning studies at the Barbican in London and at a community cinema in Majorca.

I have worked on three Virtual Reality neurofeedback studies and am collaborating with a clinic in Munich to develop more appropriate VR neurofeedback games.

I run training courses on neurofeedback and qEEG/ERPs and am a co-supervised of several Degree, Master's and PhD students.

I am proud to declare that I am dyslexic with all the benefits and disadvantages that this implies.

#### Education:

- 2012 2017 **PhD:** Real-Time EEG Sonification for Neurofeedback STEM, School of Computing & Communications The Open University
- 2001 2017 **qEEG/ERP Trained** with Prof. Kropotov in recording and analysis The Institute of the Human Brain, Russian Academy of Sciences
- 1998 1999 MA Design Central Saint Martin's, College of Art & Design, The London Institute
- 1991 1995 BSc. First Class Honours Product Design (engineering), University of Westminster

## **Career History:**

- 2010/17 Consultant & Technician: Research, Neuromarketing, TV and Documentaries,
- 2008/17 Supervisor/Adviser for 3 Dance Science MSc, at Laban contemporary dance centres, 2 PhD.s at Goldsmiths, 1 PhD at University of Hartford, 1 BSc. at University of Westminster, 1 MSc. at Malta University, 3 PhD.s at Greenwich.
- 2006/9 Research Fellow, Goldsmiths College: Presenccia Study neurofeedback
- 2003/6 Research Assistant, Imperial College: ADHD qEEG/ERP and neurofeedback
- 2002 Researcher, Cambridge, Efficacy of coloured lenses for Visual Dyslexics
- 2001/17 qEEG & Neurofeedback Clinician, Learning Recovery, Cambridge
- 2000/1 Product Designer, Cactus in Barcelona, Spain
- 98/00 Freelance Consultant & Technician, in Art Related Technology
- 97/00 Freelance Lighting Technician and Operator
- 1995/7 **TV Lighting Technician & Operator**, Richard Martin Lighting a TV lighting Hire Lighting technician of automated lights mostly at the BBC on "Top of the Pops"
- 1991/5 Project Manager / Technician, Johnes-Lloyd events & conferences
- 1989/91 Travelling for a year and a half throughout, Asia, Australasia, USA and Mexico
- 1986/9 Technical Director Operations manager, Alexander-Bentley's Entertainment's
- 1986 Entrepreneur, I built a replica AC. Cobra spots car
- 1985 Photographic Assistant and Set Builder, Habitat and Heals Photographic
- 1985 Stage hand, Aldwych Theatre, London
- 1984 Tape Opp., at Hans Zimmer Recording Studio, Lillie Yard, London

#### Activities and Interests:

I am a founder member of the European chapter of the ISNR (now called SAN) and was webmaster. I do some volunteer work for the Arts Dyslexia Trust and Neurofeedbackup. I attempt to play the Guitar and Saxophone.

#### **Citation metrics:**

Google Scholar: h-index: 7, i10-index: 5, Citation: 336 ResearchGate: 15.45, Reads: 5.551, Citation: 232

#### **Publications:**

Steffert, T., & Steffert, B. (2016). **Rhythms of Dyslexia EEG, ERP and Neurofeedback**. Handbook of Clinical QEEG and Neurotherapy, 213, edited by Thomas F Collura, Jon A. Frederic. Routledge.

Steffert, T., & Steffert, B. (2013). **Executive function as an ADHD endophenotype**. ADHD in practice, 5(3), 7-9.

Steffert, T., Holland, S., Mulholland, P., Dalton, S., & Väljamäe, A.,. (2015). **Prototyping a method** for the assessment of real-time EEG sonifications. In Proceedings of the International Conference on Auditory Display (pp. 217-224).

Steffert, B., & Steffert, T. (2010). Neurofeedback and ADHD. ADHD in practice, 2, 16-19.

Valijamae, A., Steffert, T., Berdardet, U., Gruzelie, J., & Verschure, P. (2009). Studying the effectiveness of immersion for neurofeedback in mixed/virtual reality. In Front. Neuroeng.

Väljamäe, A., T. Steffert, S. Holland, X. Marimon, R. Benitez, S. Mealla, A. Oliveira, and S. Jordà. (2013) **A review of real-time EEG sonification research.** In Proceedings of the International Conference on Auditory Display (pp. 85-93).

Mealla, S., Oliveira, A., Marimon, X., Steffert, T., & Barcelona, P. F. (2014). The Role of Personalization and Multiple EEG and Sound Features Selection in Real Time Sonification for Neurofeedback.

Thompson, T., Steffert, T., Ros, T., Leach, J., Gruzelier, J. (2008), **EEG applications for sport and performance**. Methods, Volume 45, Issue 4, August 2008, Pages 279-288, Neuroimaging in the sports sciences

Thompson, T., Steffert, T., Steed, A., & Gruzelier, J. (2010). A randomized controlled trial of the effects of hypnosis with 3-D virtual reality animation on tiredness, mood, and salivary cortisol. International Journal of Clinical and Experimental Hypnosis, 59(1), 122-142.

Thompson, T., Steffert, T., Gruzelier, J. (2009), **Effects of guided immune imagery on cortisol & tiredness: The moderating influence of openness to experience**. Personality & Individual Differences, Volume 47, Issue 7, Nov 2009, Pages 789-794

Thompson, T., Steffert, T., Redding, E., & Gruzelier, J. (2008). The effect of alpha-theta and heartrate coherence training on creative dance performance. Rev Esp Neuropsicol, 10, 60.

Gruzelier, J., Inoue, A., Smart, R., Steed, A., & Steffert, T. (2010). Acting performance and flow state enhanced with sensory-motor rhythm neurofeedback comparing ecologically valid immersive VR and training screen scenarios. Neuroscience letters, 480(2), 112-116.

Gruzelier, J. H., Foks, M., Steffert, T., Chen, M. L., & Ros, T. (2014). Beneficial outcome from EEGneurofeedback on creative music performance, attention and well-being in school children. Biological psychology, 95, 86-95.

Gruzelier, J. H., Thompson, T., Redding, E., Brandt, R., & Steffert, T. (2014). Application of alpha/theta neurofeedback and heart rate variability training to young contemporary dancers: State anxiety and creativity. International Journal of Psychophysiology, 93(1), 105-111.