Heinrich und Ich

John S Butler
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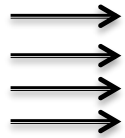
My background

- Numerical Analysis (Trinity College Dublin, PhD work)
  - Robust Numerical methods of Prandtl Boundary Layer Problems



- Self-motion Perception (Max Planck Institute for Biological Cybernetics)
  - Walking
  - Driving

- Unisensory and Multisensory processing
  - Developmental Disorders (Albert Einstein College of Medicine)
    - Autism Spectrum Disorder, Niemann Pick Type C
  - Movement Disorders (Trinity Centre for Bioengineering)
    - Parkinson's Disease
    - Dystonia

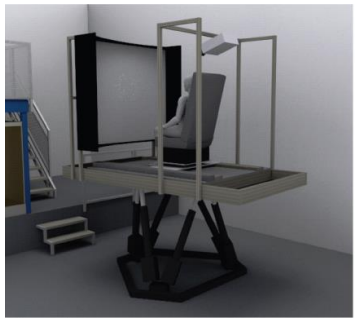
How did a Numerical Analyst end up in the MPI?

- I met an Australian in a bar in Dublin, called Stuart Smith. He said that "there is a motion platform in the Max Planck Institute in Tuebingen that he needs a programmer to setup a visual-vestibular experiment for two months"

- I had only four questions:
  1. What is a motion platform?
  2. What is a Max Planck?
  3. What is Tuebingen?
  4. What is a vestibular?

My two months in Tuebingen

- Here is a motion simulator have a go at programming it



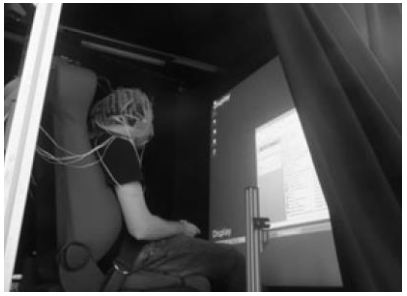
- I'll definitely be able to program it, run a full set of experiments, analyse the data, write the paper, submit and get it accepted in two months.

- It turns out I was wrong but Heinrich stepped in and supported the work.

My next few months in Tuebingen

- That's not a motion simulator, this is a MOTION SIMULATOR. Have a go at doing the kinematics

- Here is an EEG kit. Sure have a go.



My three and a half years in Tuebingen

1. J. S. Butler, J. L. Campos, H. H. Bülthoff, (2014) "The robust nature of visual-vestibular combination for heading." Experimental Brain Research
2. J. L. Campos, J. S. Butler, H. H. Bülthoff, (2014) "Visual, and proprioceptive cue-weighting in travelled distance perception." Experimental Brain Research
3. H. Nolan, J. S. Butler*, R. Whelan, J. J. Foxe, H. H. Bülthoff, R B. Reilly, (2012) "Detecting Changes in Self-motion Heading: A High Density Electrophysiological Measure of Vestibular Processing." Experimental Brain Research, 219(1):1-11
4. J. L. Campos, J. S. Butler, H. H. Bülthoff, (2012) "Visual, proprioceptive, and inertial cue-weighting in travelled distance perception." Experimental Brain Research, 281(4):551-65
5. J. S. Butler, J. L. Campos, H. H. Bülthoff, S. Smith, (2011) "The Role of Stereo Vision in Visual-Vestibular Integration." Seeing and Perceiving. 24 453–470
6. **J. S. Butler, S. Smith, J. L. Campos, H. H. Bülthoff. (2010) "Bayesian integration of visual and vestibular information." Journal of Vision, Sep 1;10(11):23**
7. H. Nolan, J. S. Butler, R. Whelan, J. J. Foxe, H. H. Bülthoff, R B. Reilly, (2011) "Motion P3 demonstrates neural nature of motion ERPs." IEEE Engineering in Medicine and Biology Society, Boston, 3884-3887.
8. H. Nolan, J. S. Butler, R. Whelan, J. J. Foxe, H. H. Bülthoff, R B. Reilly, (2011) "Electrophysiological Source Analysis of Passive Self-Motion." IEEE EMBS Conference on Neural Engineering; 53-56.
9. H. Nolan R. Whelan R. Reilly, H. H. Bülthoff, J. S. Butler, (2009) "Acquisition of Human EEG Data during Linear Self-Motion on a Stewart Platform", IEEE Neural Engineering; 585-588.
10. F. Soyka, H. J. Teufel, K. A. Beykirch, P. Robuffo Giordano, J. S. Butler, F. M. Nieuwenhuizen, H. H. Bülthoff, (2009) "Does jerk have to be considered in motion simulation?" American Institute of Aeronautics and Astronautics (AIAA) Modeling and Simulation Technologies Conference and Exhibit. 1381-1388.
11. H. Teufel, H.-G. G. Nusseck, K. Beykirch, J. S. Butler, M. Kerger, H. H. Bülthoff, (2007) "MPI Motion Simulator: Development and Analysis of a Novel Motion Simulator." AIAA Modeling and Simulation Technologies Conference and Exhibit. 1-11
12. K. Beykirch, F. Nieuwenhuizen, H. Teufel, H.-G. G. Nusseck, J. S. Butler, H. H. Bülthoff, (2007) "Control of a Lateral Helicopter Sidestep Maneuver on an Anthropomorphic Robot." AIAA Modeling and Simulation Technologies Conference and Exhibit. 1-8
13. J. S. Butler, S Smith, K Beykirch, H H Bülthoff, (2006) "Visual Vestibular Interactions for Self Motion Estimation." Driving Simulation Conference. 1-10

Bedrock of my work

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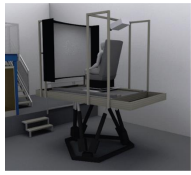
  - Walking
  - Driving



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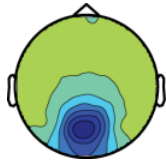
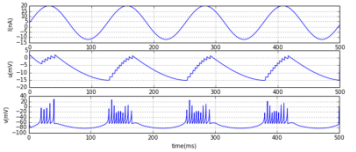


- Computational Neuroscience (Dublin Institute of Technology)



Heinrich's Words of Wisdom

- "You do experiments that are even boring for a German psychophysicist."
- "You did enjoy your own alcohol."
- "Be excellent to each other", Bill and Ted's Excellent Adventure

Thank you

- Thank you to Heinrich
- Thank you to everyone