On the ubiquity of movement

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Stellingen behorende bij het proefschrift

On the ubiquity of movement: a decoding perspective on widespread motor-related neural activity

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1. Global motor dynamics broaden the scope for movement-related research, including combining datasets for BCI and zero or minimum calibration decoders. *Chapter 4.*

2. The brain-wide electrophysiological coverage of stereotactic encephalography (sEEG) provides new and unique opportunities to uncover large-scale activity neural activity patterns. *This thesis.*

3. Manifold learning is an exceptionally useful tool for the large-scale and varying sEEG recordings. *Chapter 4.*

4. The motor BCI field need to progress to continuous and naturalistic designs, to allow for a more applicable evaluation performance and clinical applicability. *Chapter 5.*

5. sEEG is an undervalued and underutilized research vehicle for recording and decoding global and previous hard to reach brain areas. *Discussion.*

6. Including diffusion tensor imaging (DTI) provides important missing information in sEEG BCI research. *Discussion.*

7. We need interpretable non-linear dimensionality reduction methods, especially when applied to the global coverage of sEEG. *Discussion*

8. Global motor dynamics and changes thereof have the potential to provide a new tool to assess and monitor movement disorders. *This thesis.*

9. "We have a brain for one reason, and one reason only – That's to produce adaptable and complex movements. ... To understand movement is to understand the whole brain." *Daniel Wolpert*