Experimental details about the bistable tactile perception study

Methods

Vibrotactile stimulation module

MR compatible vibrotactile stimulation device as used previously in a series of studies

Stimuli were presented on two 2x4-dot piezoelectric Braille displays (the let and right two rows of a 10x4-dot matrix with 2.5 mm spacing) controlled by a programmable stimulator (Piezostimulator, QuaeroSys, St. Johann, Germany).

All 8 pins in each display were driven by a 100Hz carrier frequency, lasted 400ms followed by a 400ms inter stimulus interval. Either at maximum stimulation intensity or 70% stimulation amplitude

Scanning parameters

- Please see details in the uploaded PDF on the sequences

In short: First a MRI-localizer was acquired, then a fieldmapping (not used in our analysis, and not necessary to report), then 7 runs á 6min EPI (2x2x2mm, TR=1sec) sequence and finally a T1 scan

In the first six runs, the bistable tactile perception paradigm was performed, in the last run a functional localizer was performed

Group Level analysis

- We uploaded fist-level contrasts images, from models as discussed in class, for the contrasts:
- Bistable Perception (contrats across 7 runs):
  - Switches (irrespective of direction of switch)
  - Alternating > Simultaneous
  - Simultaneous > Alternating
- Localizer run:
  - Left (versus implicit baseline)
  - Right (versus implicit baseline)

This shall give you the possibility to perform second-level analysis. Please keep in mind that N=9 is still very few for a group-level comparison. You can use one-sample t-tests in SPM (See SPM Manual or online tutorials) to compute t-tests against zero.