

SONIC UNCERTAINTIES THE MULTIDIMENSIONAL CASE

Mark Fell

with Tim Croudace, Alastair Scott and Jan Stochl

Based on simulated but realistic data created to capture five distinct but related dimensions of variation (psychometric latent factors), surveyed using adaptive testing principles (also known as Computer Adaptive or Tailored Testing). The installation represents how estimates are converged upon by a process of item selection contingent on prior responses, allowing sonification of an exemplar set of five factor scores.

The multidimensional cases are the person estimates converging on final score values, and the uncertainties are the conditional standard errors of measurement, typically under the control of the researcher, set so as to reduce incrementally until sufficiently small.

This installation was inspired by conversations between Sandra Pauletto, Tim Croudace and Mark Fell about multidimensional personality and psychopathology data. The installation was commissioned from Mark Fell and premiered at SoniHED conference.

Item response theory based data, recreated in simulation scale and scope for this piece were generated and programmed by Dr Jan Stochl and York Centre for Complex Systems Analysis summer student Alastair Scott, working under direction from Professor Tim J Croudace of Hull York Medical School and Dept of Health Sciences.

Thanks to the organisers, sponsors and C2D2 supported researchers in Health Sciences and HYMS.