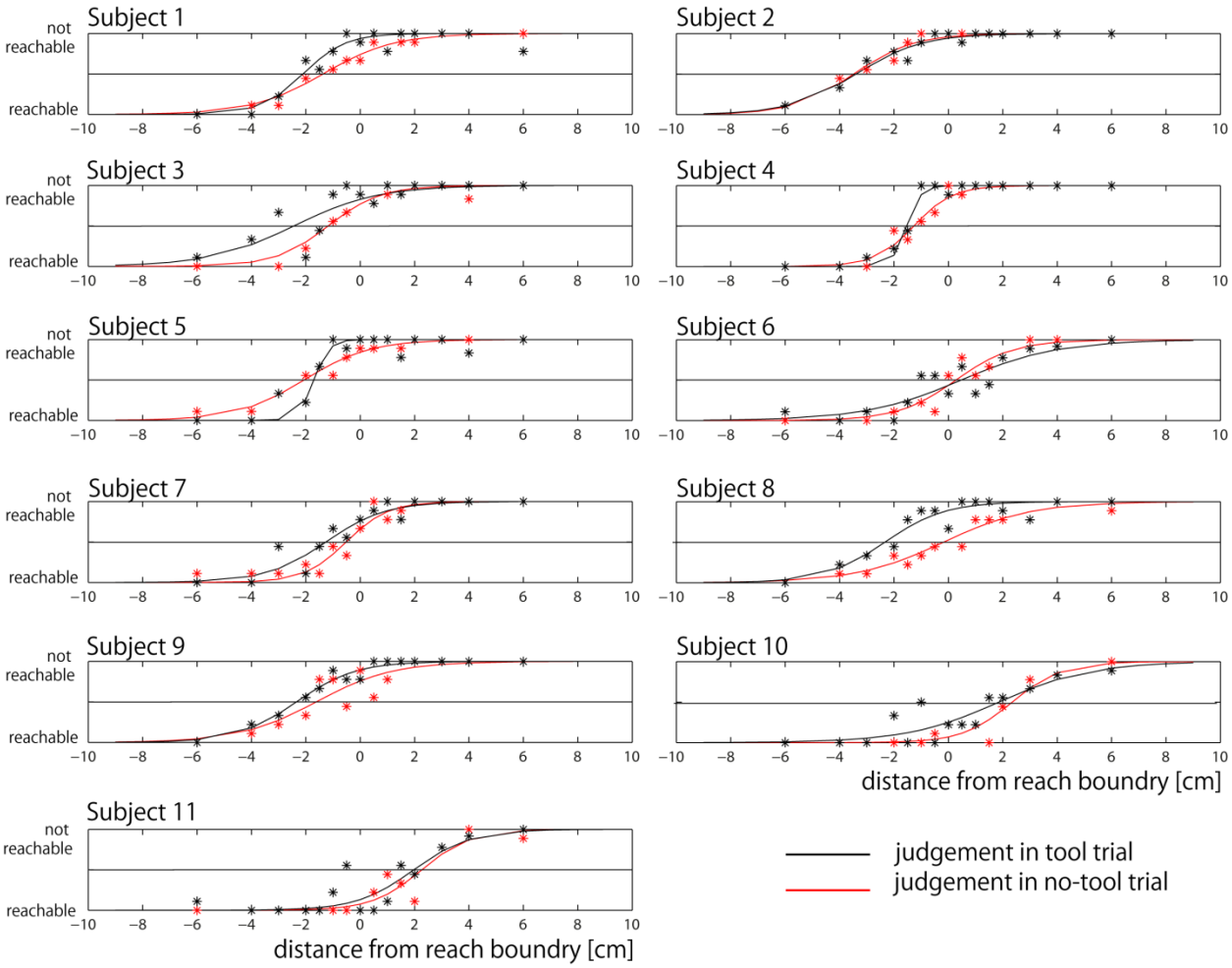
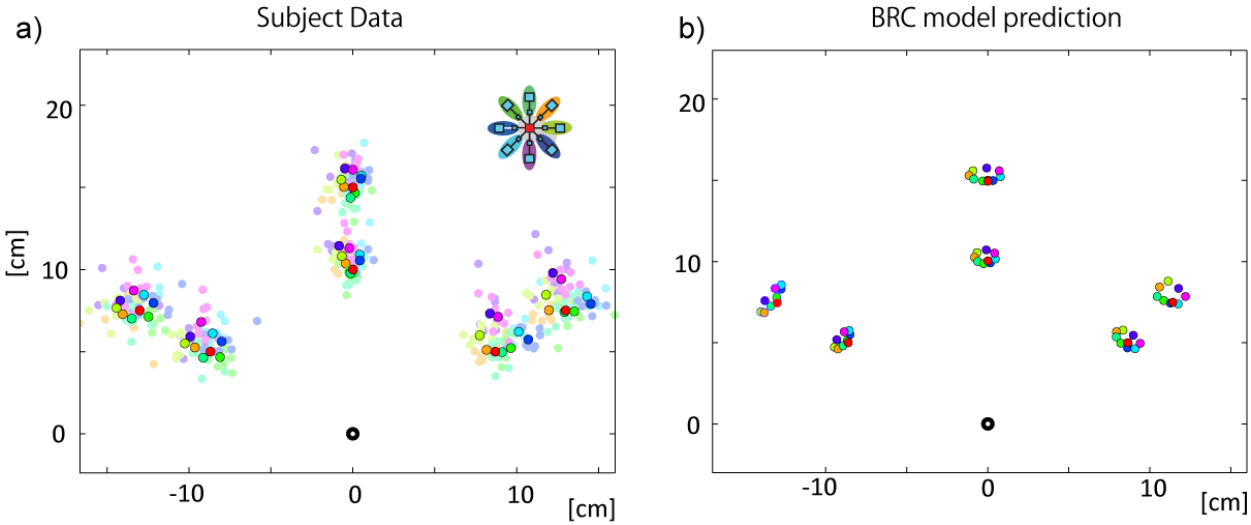
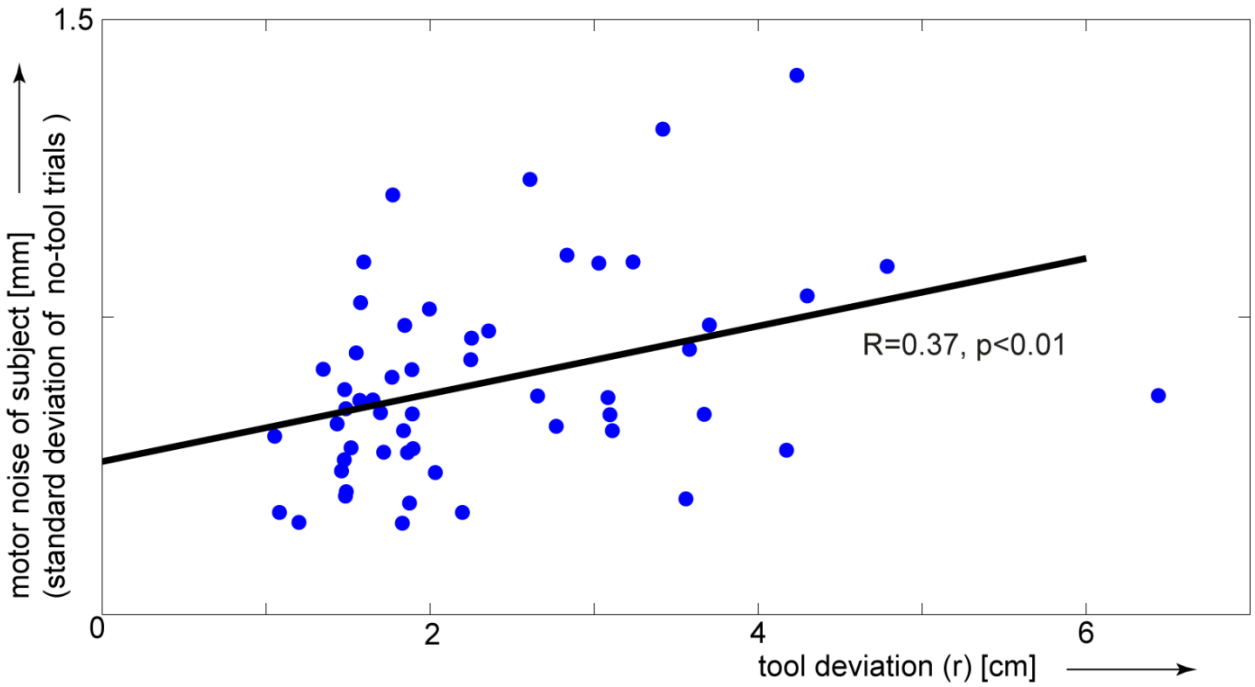


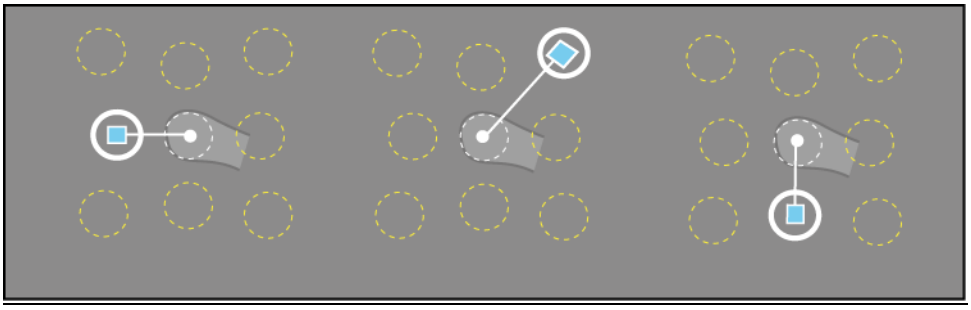
Supplementary Fig. 1: Real-tool KIH data: Individual subject psychometric plots for the real-tool KIH experiment. The black data points and trace represent the judgement in the tool trials while the red data points and trace show the judgement during the no-tool trials.



Supplementary Fig. 2. Tool miss by subjects: a) The plot shows the hand positions with the different tools (color coded as in Fig. 3) at the end of the reach. The black open circle shows the start position of the reach movements. Each individual translucent data point shows the average reached position by a subject while the solid points represent the average over all the subject at each target point. b) the positons predicted by the BRC model. The BRC model could predict a target overshoot and deviation at all the targets and while on an average the predictions match the experimental observations well (Fig. 6), the model did show local quantitative errors at each target.



Supplementary Fig. 3: Tool deviation correlates with motor noise: The average tool deviation (*r* from Fig. 5c) across the targets and subjects (6 targets X 10 subjects=60 data points) plotted against the individual motor noise of the subject estimated by the standard deviation of the no-tool trials by the subjects to the targets.



Supplementary Fig. 4: Target offset to equalize hand movement planning: The tool target was offset in the THR experiment according to the tool presented to the subject in order to equalize the hand target that the subject required to plan his movement to. The figure shows the example for the case of tool set 1 (Fig. 2b)