Additional file 4

Supplementary information about the bimanual motor skill learning task, LIFT-THE-TRAY

The robotic arms of the REAplan® simulated two virtual pulleys". One pulley has a slightly longer virtual rope than the other - thereby requiring a phase offset for the tray to remain level. The robot simulated a round haptic channel, without additional friction or resistance beyond the channel of the pulleys. Handles were controlled to remain physically on circular paths with a radius of 8 cm. One full revolution was required to move the tray all the way from the bottom to the top. Lateral stiffness was as high as possible for the robot actuators. No friction or damping was added along these circular paths. Actual inertia of moving parts was compensated by the robot, although this compensation is never perfect due to internal friction in the transmissions.