

Supplemental Materials

**Grasping Others' Movements: Rapid Discrimination of Object Size From
Observed Hand Movements**

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Table S1

Results of comparisons between small and large object for movements recorded in the "action execution" phase and for movements selected for the "action observation" phase. Paired samples t-tests were performed for the movement duration. For all other variables the significance of differences between "object size" (2 levels; small vs. large) and "time" (10 levels; from 10 to 100% in 10 steps) was analyzed using a within subject analysis of variance (ANOVA)

<i>Kinematic variable</i>	<i>Recorded movements (Action execution phase)</i>	<i>Selected movements (Action observation phase)</i>
Movement duration	Mean (\pm SE) small = 780 \pm 22 ms Mean (\pm SE) large = 745 \pm 27 ms t(14) = 3.767; p = .002	Mean (\pm SE) small = 768 \pm 16 ms Mean (\pm SE) large = 750 \pm 20 ms t(29) = 1.464; p = .154
Wrist velocity	Mean (\pm SE) small = 521 \pm 13 mm/s Mean (\pm SE) large = 555 \pm 17 mm/s Size = [F _(1,14) = 24.538; p = .000] Time = [F _(9,126) = 246.750; p = .000] Size \times Time = [F _(9,126) = 17.677; p = .000]	Mean (\pm SE) small = 524 \pm 10 mm/s Mean (\pm SE) large = 548 \pm 13 mm/s Size = [F _(1,29) = 9.396; p = .005] Time = [F _(9,261) = 439.634; p = .000] Size \times Time = [F _(9,261) = 23.676; p = .000]
Grip aperture	Mean (\pm SE) small = 42.17 \pm 1.22 mm Mean (\pm SE) large = 73.82 \pm 2.20 mm Size = [F _(1,14) = 406.867; p = .000] Time = [F _(9,126) = 239.327; p = .000] Size \times Time = [F _(9,126) = 257.009; p = .000]	Mean (\pm SE) small = 42.38 \pm 1.02 mm Mean (\pm SE) large = 75.79 \pm 1.57 mm Size = [F _(1,29) = 488.113; p = .000] Time = [F _(9,261) = 420.685; p = .000] Size \times Time = [F _(9,261) = 248.699; p = .000]
Wrist height	Mean (\pm SE) small = 68.76 \pm 3.53 mm Mean (\pm SE) large = 85.08 \pm 3.53 mm Size = [F _(1,14) = 345.491; p = .000] Time = [F _(9,126) = 132.876; p = .000] Size \times Time = [F _(9,126) = 143.868; p = .000]	Mean (\pm SE) small = 68.67 \pm 2.40 mm Mean (\pm SE) large = 85.19 \pm 2.60 mm Size = [F _(1,29) = 327.735; p = .000] Time = [F _(9,261) = 439.634; p = .000] Size \times Time = [F _(9,261) = 107.658; p = .000]
X-thumb	Mean (\pm SE) small = -2.19 \pm 1.78 Mean (\pm SE) large = -15.17 \pm 1.60 Size = [F _(1,14) = 90.569; p = .000] Time = [F _(9,126) = 22.245; p = .000] Size \times Time = [F _(9,126) = 77.525; p = .000]	Mean (\pm SE) small = -1.91 \pm 1.22 Mean (\pm SE) large = -15.12 \pm 1.08 Size = [F _(1,29) = 238.345; p = .000] Time = [F _(9,261) = 29.294; p = .000] Size \times Time = [F _(9,261) = 87.980; p = .000]
Y-thumb	Mean (\pm SE) small = 14.85 \pm 1.71 Mean (\pm SE) large = 6.21 \pm 1.94 Size = [F _(1,14) = 130.878; p = .000] Time = [F _(9,126) = 52.857; p = .000] Size \times Time = [F _(9,126) = 135.612; p = .000]	Mean (\pm SE) small = 15.14 \pm 1.14 Mean (\pm SE) large = 5.74 \pm 1.42 Size = [F _(1,29) = 191.383; p = .000] Time = [F _(9,261) = 84.022; p = .000] Size \times Time = [F _(9,261) = 159.989; p = .000]

Z-thumb	Mean (\pm SE) small = -79.22 ± 1.50 Mean (\pm SE) large = -82.40 ± 1.44 Size = $[F_{(1,14)} = 22.363; p = .000]$ Time = $[F_{(9,126)} = 11.391; p = .000]$ Size \times Time = $[F_{(9,126)} = 37.032; p = .000]$	Mean (\pm SE) small = -79.06 ± 1.08 Mean (\pm SE) large = -82.95 ± 0.98 Size = $[F_{(1,29)} = 49.898; p = .000]$ Time = $[F_{(9,261)} = 22.989; p = .000]$ Size \times Time = $[F_{(9,261)} = 62.534; p = .000]$
X-index	Mean (\pm SE) small = 3.87 ± 2.17 Mean (\pm SE) large = -5.99 ± 2.32 Size = $[F_{(1,14)} = 136.174; p = .000]$ Time = $[F_{(9,126)} = 56.205; p = .000]$ Size \times Time = $[F_{(9,126)} = 76.311; p = .000]$	Mean (\pm SE) small = 4.10 ± 1.41 Mean (\pm SE) large = -6.00 ± 1.74 Size = $[F_{(1,29)} = 174.493; p = .000]$ Time = $[F_{(9,261)} = 83.713; p = .000]$ Size \times Time = $[F_{(9,261)} = 84.148; p = .000]$
Y-index	Mean (\pm SE) small = 54.76 ± 2.09 Mean (\pm SE) large = 69.32 ± 1.92 Size = $[F_{(1,14)} = 231.573; p = .000]$ Time = $[F_{(9,126)} = 94.803; p = .000]$ Size \times Time = $[F_{(9,126)} = 75.557; p = .000]$	Mean (\pm SE) small = 55.34 ± 1.57 Mean (\pm SE) large = 70.04 ± 1.35 Size = $[F_{(1,29)} = 283.058; p = .000]$ Time = $[F_{(9,261)} = 167.616; p = .000]$ Size \times Time = $[F_{(9,261)} = 63.325; p = .000]$
Z-index	Mean (\pm SE) small = -73.32 ± 2.28 Mean (\pm SE) large = -51.48 ± 3.21 Size = $[F_{(1,14)} = 183.383; p = .000]$ Time = $[F_{(9,126)} = 196.741; p = .000]$ Size \times Time = $[F_{(9,126)} = 172.909; p = .000]$	Mean (\pm SE) small = -72.98 ± 1.58 Mean (\pm SE) large = -50.22 ± 2.42 Size = $[F_{(1,29)} = 247.804; p = .000]$ Time = $[F_{(9,261)} = 357.337; p = .000]$ Size \times Time = $[F_{(9,261)} = 174.547; p = .000]$
X-finger plane	Mean (\pm SE) small = -0.96 ± 0.007 Mean (\pm SE) large = -0.95 ± 0.006 Size = $[F_{(1,14)} = 10.894; p = .005]$ Time = $[F_{(9,126)} = 4.983; p = .000]$ Size \times Time = $[F_{(9,126)} = 13.429; p = .000]$	Mean (\pm SE) small = -0.97 ± 0.005 Mean (\pm SE) large = -0.95 ± 0.004 Size = $[F_{(1,29)} = 22.677; p = .000]$ Time = $[F_{(9,261)} = 10.284; p = .000]$ Size \times Time = $[F_{(9,261)} = 7.954; p = .000]$
Y-finger plane	Mean (\pm SE) small = 0.15 ± 0.38 Mean (\pm SE) large = 0.07 ± 0.37 Size = $[F_{(1,14)} = 9.775; p = .007]$ Time = $[F_{(9,126)} = 69.951; p = .000]$ Size \times Time = $[F_{(9,126)} = 10.698; p = .000]$	Mean (\pm SE) small = 0.15 ± 0.03 Mean (\pm SE) large = 0.07 ± 0.03 Size = $[F_{(1,29)} = 15.502; p = .000]$ Time = $[F_{(9,261)} = 126.713; p = .000]$ Size \times Time = $[F_{(9,261)} = 9.894; p = .000]$
Z-finger plane	Mean (\pm SE) small = 0.05 ± 0.02 Mean (\pm SE) large = 0.19 ± 0.02 Size = $[F_{(1,14)} = 67.300; p = .000]$ Time = $[F_{(9,126)} = 5.981; p = .000]$ Size \times Time = $[F_{(9,126)} = 71.042; p = .000]$	Mean (\pm SE) small = 0.05 ± 0.02 Mean (\pm SE) large = 0.19 ± 0.02 Size = $[F_{(1,29)} = 98.603; p = .000]$ Time = $[F_{(9,261)} = 7.115; p = .000]$ Size \times Time = $[F_{(9,261)} = 72.283; p = .000]$

Figure S1. Results for d' (A) and RTs (B) in the frontal and the lateral viewpoints as a function of occlusion time point (from 10% up to 80% of reach-to-grasp movement). Bars represent standard error of the means.

