Supplemental Results

More fixation analysis

We next computed the percentage of the number of fixations in each ROI (**Fig. 3I**). Participants with ASD did not differ from controls in the eye (ASD: 28.5±19.2%, controls: 33.6±20.1%; t(31)=0.74, P=0.46, g=0.25, permutation P=0.46), mouth (ASD: 21.5±13.9%, controls: 19.3±13.9%; t(31)=0.45, P=0.66, g=0.15, permutation P=0.64), or center (ASD: 41.1±16.2%, controls: 42.3±13.2%; t(31)=0.23, P=0.82, g=0.078, permutation P=0.84) ROIs, nor the difference between the eye and mouth ROI (ASD: 7.08±31.4%, controls: 14.3±32.3%; t(31)=0.65, P=0.52, g=0.22, permutation P=0.52). Similar results were derived for the total fixation duration in each ROI (**Fig. 3J**; eye: ASD: 275±220 ms, controls: 344±226 ms; t(31)=0.88, P=0.38, g=0.30, permutation P=0.38; mouth: ASD: 229±167 ms, controls: 221±184 ms; t(31)=0.14, P=0.89, g=0.048, permutation P=0.84; center: ASD: 399±180 ms, controls: 374±142 ms; t(31)=0.44, P=0.66, g=0.15, permutation P=0.61; difference between eye and mouth: ASD: 45.7±365 ms, controls: 123±387 ms; t(31)=0.59, P=0.56, g=0.20, permutation P=0.53). Both results mirrored that of fixation density.

Furthermore, participants with ASD and controls showed similar orientation speed towards all ROIs (**Fig. 3K**; eye: ASD: 370±177 ms, controls: 349±169 ms; t(31)=0.35, P=0.73, g=0.12, permutation P=0.72; mouth: ASD: 376±158 ms, controls: 435±170 ms; t(30)=1.02, P=0.32, g=0.35, permutation P=0.35; center: ASD: 76.3±66.6 ms, controls: 64.7±89.4 ms; t(31)=0.43, P=0.67, g=0.15, permutation P=0.73; difference between eye and mouth: ASD: 11±289 ms, controls: −85.6±310 ms; t(30)=0.91, P=0.37, g=0.32, permutation P=0.38). Notably, both participants with ASD (two-tailed paired t-test; t(16)=0.16, P=0.88, g=0.033, permutation P=0.93) and controls (t(14)=1.07, P=0.30, g=0.49, permutation P=0.18) showed similar latency to first fixate on eyes and mouth. This was further confirmed by a two-way ANOVA (ASD vs. controls X eye vs. mouth) showing no difference between participant groups (F(1,61)=0.20, P=0.66, η^2=0.0033), ROI types (F(1,61)=1.18, P=0.28, η^2=0.019), nor interaction (F(1,61)=0.91, P=0.34, η^2=0.014).

Lastly, participants with ASD did not differ in mean fixation duration in each ROI from controls (**Fig. 3L**; eye: ASD: 270±87.5 ms, controls: 267±78.5 ms; t(31)=0.12, P=0.91, g=0.041, permutation P=00.96; mouth: ASD: 315±133 ms, controls: 328±137 ms; t(30)=0.28, P=0.78, g=0.10, permutation P=0.77; center: ASD: 299±107 ms, controls: 269±68.2 ms; t(31)=0.92, P=0.37, g=0.31, permutation P=0.41; difference between eye and mouth: ASD: −51.5±153 ms, controls: −60.8±204 ms; t(30)=0.15, P=0.88, g=0.051, permutation P=0.86).