

Supplementary Material for “Shape Beyond Recognition:
Form-derived Directionality and its Effects on Visual Attention and Motion Perception”

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Author Note

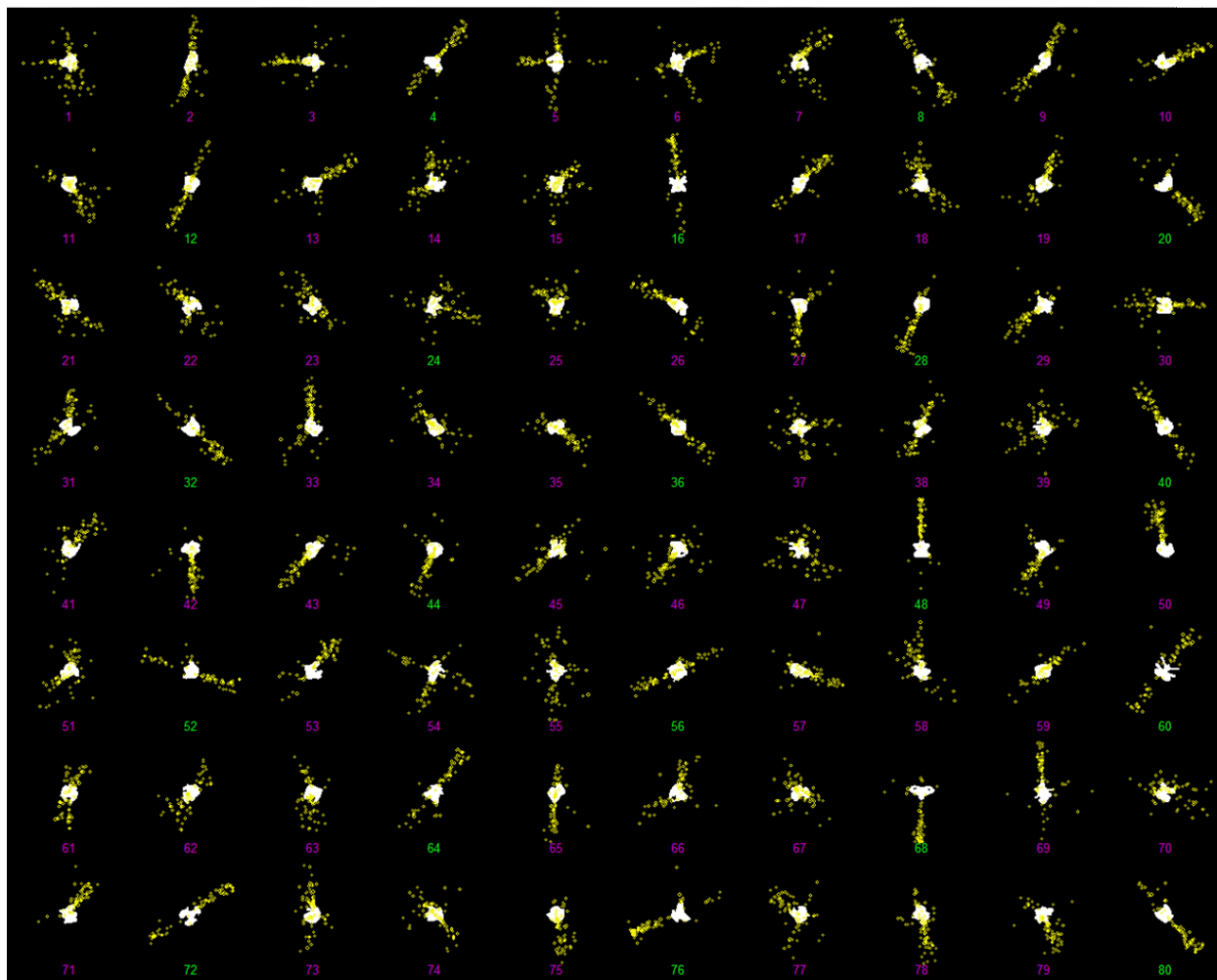
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Supplementary table 1. Statistics for tests of circular uniformity: Shapes 1-40. For each shape, the first directional assessment of every participant was used, giving a total of 16 data points for each test. A star symbol (*) is used to indicate that the directional assessments of a shape significantly deviate from circular uniformity. The approximate p-values for Rao's spacing test are, more specifically, the smallest commonly used alpha levels at which the test would be significant. The statistics are calculated using the Circular Statistics Toolbox for MATLAB (Berens, 2009). Shape numbers correspond to those in supplementary figure 1.

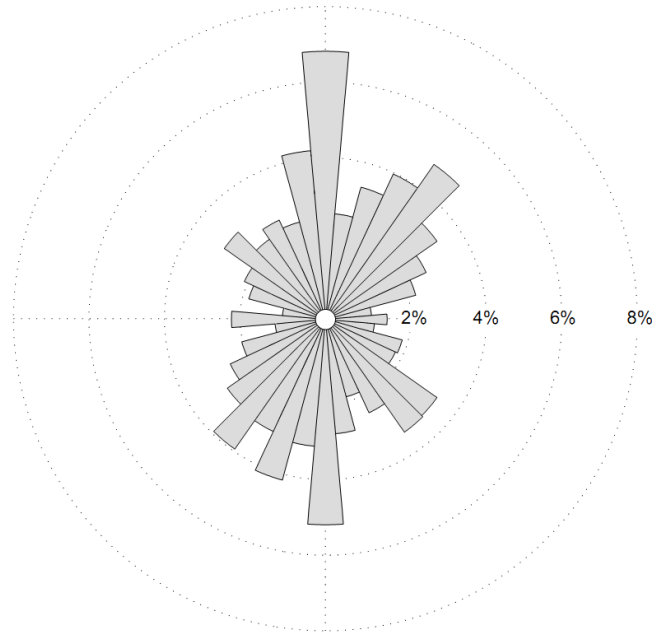
Shape number	Raleigh sig.	Rao sig.	Raleigh test p	Rao test approx. p	Raleigh test z	Rao test U
1		*	0.194	0.001	1.647	205.897
2		*	0.821	0.001	0.203	232.472
3	*	*	0.001	0.001	6.211	209.615
4		*	0.153	0.001	1.883	237.606
5	*	*	0.032	0.010	3.359	197.272
6	*	*	0.001	0.010	6.305	193.523
7	*	*	0.025	0.010	3.579	190.742
8		*	0.531	0.001	0.647	245.497
9		*	0.253	0.001	1.388	245.916
10	*	*	0.009	0.001	4.533	233.295
11	*	*	0.000	0.001	8.352	208.074
12		*	0.127	0.001	2.058	251.404
13		*	0.155	0.001	1.870	216.825
14	*	*	0.006	0.001	4.817	205.763
15			0.078	0.100	2.528	162.636
16	*	*	0.014	0.001	4.099	248.612
17	*	*	0.020	0.001	3.813	254.921
18		*	0.242	0.010	1.432	190.070
19	*	*	0.000	0.001	8.461	255.906
20	*	*	0.035	0.001	3.285	216.481
21		*	0.185	0.001	1.697	205.582
22			0.375	0.500	0.997	120.003
23			0.112	0.500	2.187	140.752
24	*	*	0.013	0.010	4.171	181.955
25			0.085	0.500	2.451	154.749
26	*	*	0.012	0.001	4.246	257.106
27	*	*	0.002	0.001	5.762	244.474
28	*	*	0.000	0.001	8.822	250.487
29	*	*	0.001	0.001	6.843	244.602
30	*	*	0.031	0.001	3.396	201.711
31	*	*	0.000	0.001	7.255	202.812
32		*	0.083	0.001	2.469	242.573
33	*	*	0.000	0.001	12.307	300.685
34		*	0.845	0.050	0.173	173.079
35	*	*	0.007	0.001	4.698	234.866
36	*	*	0.002	0.001	5.729	245.202
37			0.080	0.500	2.502	146.174
38		*	0.680	0.001	0.396	208.741
39		*	0.589	0.050	0.542	174.603
40		*	0.116	0.001	2.153	267.530

Supplementary table 2. Statistics for tests of circular uniformity: Shapes 41-80.

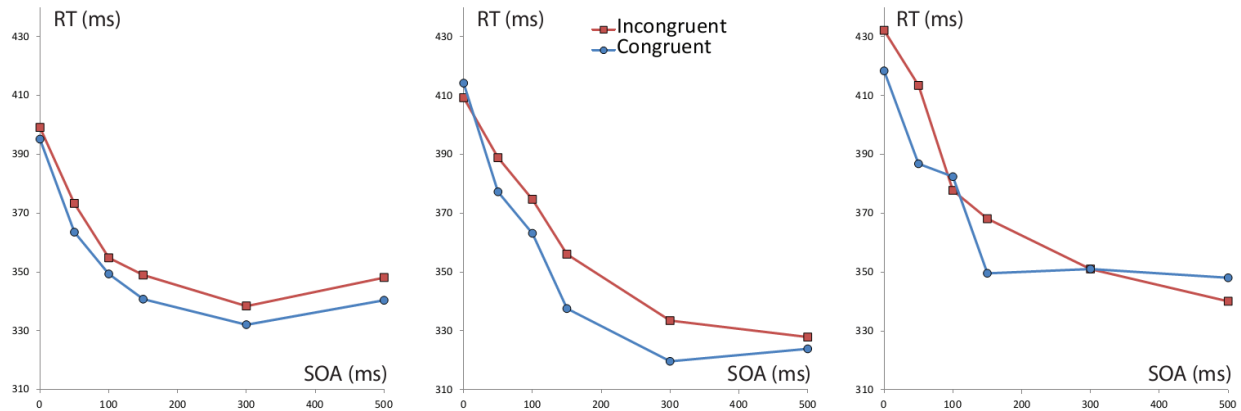
Shape number	Raleigh sig.	Rao sig.	Raleigh test p	Rao test approx. p	Raleigh test z	Rao test U
41	*	*	0.000	0.001	8.986	232.536
42	*	*	0.000	0.001	11.904	277.456
43		*	0.106	0.001	2.236	213.769
44	*	*	0.005	0.001	5.093	213.188
45			0.642	0.500	0.454	147.183
46	*	*	0.014	0.010	4.097	195.864
47		*	0.161	0.050	1.831	173.809
48	*	*	0.000	0.001	9.770	259.228
49	*	*	0.000	0.001	7.538	218.907
50	*	*	0.000	0.001	15.433	289.695
51		*	0.111	0.001	2.195	203.287
52		*	0.918	0.001	0.088	237.879
53	*	*	0.001	0.001	6.406	252.947
54		*	0.173	0.050	1.763	179.642
55		*	0.202	0.010	1.608	191.221
56		*	0.249	0.001	1.402	239.678
57		*	0.204	0.001	1.600	219.477
58	*	*	0.023	0.001	3.664	206.461
59		*	0.862	0.050	0.153	177.881
60		*	0.437	0.001	0.843	212.720
61		*	0.080	0.001	2.510	226.996
62		*	0.217	0.010	1.541	188.522
63	*	*	0.008	0.001	4.650	240.977
64		*	0.276	0.001	1.302	250.957
65	*	*	0.017	0.001	3.959	293.582
66		*	0.922	0.010	0.083	188.113
67			0.542	0.500	0.626	120.362
68	*	*	0.000	0.001	9.786	259.450
69	*	*	0.000	0.001	11.174	263.524
70			0.393	0.500	0.951	118.182
71	*	*	0.000	0.001	15.302	289.076
72	*	*	0.011	0.001	4.362	268.886
73	*	*	0.001	0.001	6.799	255.894
74			0.115	0.100	2.154	163.870
75	*	*	0.001	0.001	6.521	219.271
76		*	0.165	0.001	1.807	243.226
77	*	*	0.037	0.001	3.232	215.638
78	*	*	0.000	0.001	7.363	224.046
79	*	*	0.000	0.001	10.414	228.688
80	*	*	0.007	0.001	4.697	274.084



Supplementary figure 1. All shapes and directional judgments. 80 novel shapes are shown with the endpoints (yellow circles) of all “drag-and-clicks” used for directional judgments in experiment 1. Asymmetrical shapes are marked with a magenta number, and symmetrical shapes are marked with a green number.



Supplementary figure 2. All directional judgments. This rose plot, or angle histogram, shows people's drag-and-clicks used for directional judgments in experiment 1. All drag-and-clicks are included, regardless of which shape stimuli were shown. The length of each bin corresponds to the percentage of drag-and-clicks that fell within the corresponding directions.



Supplementary figure 3. Shape-induced orienting of attention for three different groups of participants. Mean response times (RT) from experiment 3 are shown as a function of stimulus onset asynchrony (SOA) and whether the location of a target was congruent or incongruent with the inherent directionality of a non-predictive central shape cue. Left: Data from 13 participants who completed all experimental blocks with full eye tracking. Middle: Data from four participants who completed all experimental blocks, but we were unable to track their eyes for the whole duration of the experiment. Right: Data from three participants who did not complete all experimental blocks, but their eyes were fully tracked for the duration of the trials that they did complete.