Volume perception: disparity extraction and depth representation in complex three-dimensional environments

Julie. M Harris

Supplementary Materials

1. Range of stimulus parameters used

Table 1 shows the matrix of frequencies (in cycles per <u>image</u>) corresponding to each window size (columns) and frequency-window ratio (rows).
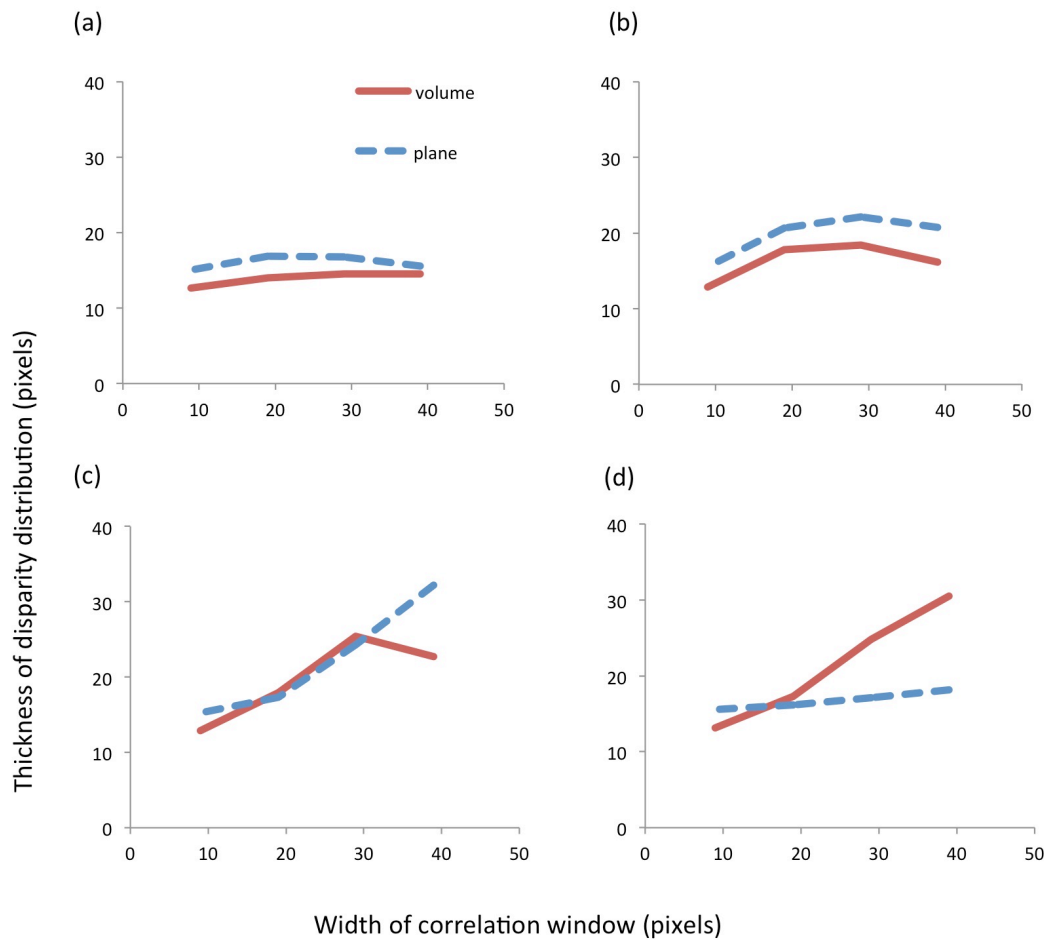
Fc /wsize	Window size -> (pixels)	39	29	19	9
0.25/wsize		2.3	3.0	4.6	9.7
0.5/wsize		4.5	6.0	9.2	19.4
1/wsize		9	12.1	18.4	38.9
2/wsize		18	24.1	36.8	77.8

Table 2 shows the matrix of frequencies (in cycles per <u>degree</u>) corresponding to each window size (columns) and frequency-window ratio (rows).

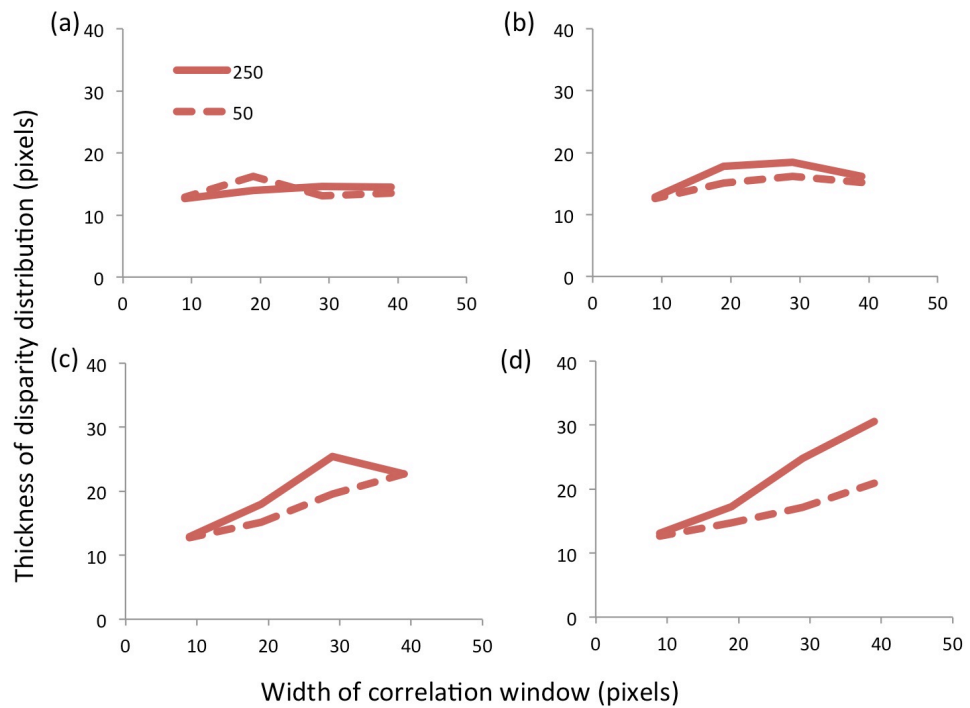| Fc /wsize	Window size -> (pixels)	39	29	19	9
0.25/wsize		0.56	0.72	1.1	2.31
0.5/wsize		1.07	1.44	2.19	4.63
1/wsize		2.13	2.88	4.38	9.25
2/wsize		4.26	5.76	8.76	18.5

2. Model performance for plane versus volume stimuli (as per Experiment 1)

Graphs show model performance for the volume (solid red line) and plane (dotted blue line) stimuli for each f/w ratio used: (a) f=0.25/w, (b) f=0.5/w, (c) f=1/w, (d) f=1/2w.

3. Model performance for volume stimuli for 250 and 50 elements (as per Experiment 2)

Graphs show model performance for the 250 (solid red line) and 50 (dotted red line) stimuli for each f/w ratio used: (a) f=0.25/w, (b) f=0.5/w, (c) f=1/w, (d) f=1/2w.

4. Model performance for high disparity gradient versus low disparity gradient stimuli (as per Experiment 3)

Graphs show model performance for the volume (solid red line) and plane (dotted blue line) stimuli for each f/w ratio used: (a) f=0.25/w, (b) f=0.5/w, (c) f=1/w, (d) f=1/2w.