Supplementary Note

Vergence eye position and binocular viewing. Differences in vergence eye position could result in slight changes in the distribution of activity in V1 and a previous study has shown that monocular depth cues can cause changes in vergence eye movements\(^1\). In other words, in the presence of 2D depth cues the ocular-motor system can behave as if it is viewing an actual 3D scene. Though this previous study used a different depth cue (kinetic depth effect, KDE), could similar vergence differences have occurred when subjects were observing the front and back spheres in our experiment? We feel that this possibility is extremely unlikely. A necessary condition in the KDE experiments was that the stimuli were viewed monocularly. When the experiments were repeated with binocular vision, the modulation in vergence was completely absent. The authors note that this is not surprising given that very small changes in vergence ( 20 min arc) would cause diplopia.

References