transparency, 2 places

lens, 2 places
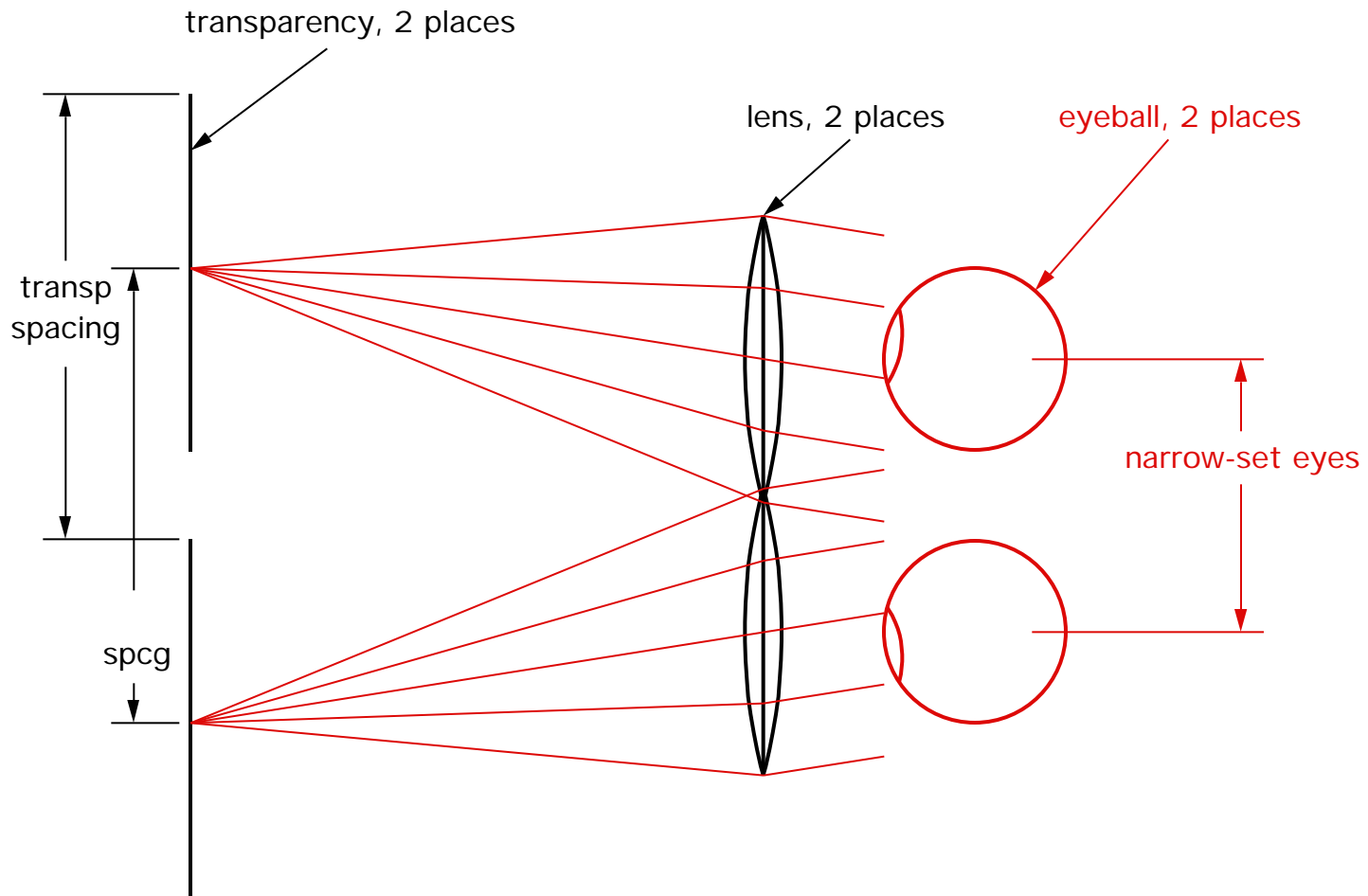
eyeball, 2 places

transp
spacing

spcg

narrow-set eyes

wide-set eyes

Case 1: lens spacing = infinity spacing
No matter what the eyeball spacing is,
infinity is straight ahead.

transparency, 2 places

lens, 2 places

eyeball, 2 places

transp
spacing

narrow-set eyes

spcg

Case 2: lens spacing = narrow-set eye spacing
(As you can see, you wouldn't adjust the lens spacing in quite this far:
construction shown is for purposes of illustration.) In nature, the eyes
never have to diverge, so this is unusual and in fact may be painful.

transparency, 2 places

lens, 2 places

eyeball, 2 places

transp
spacing

spcg
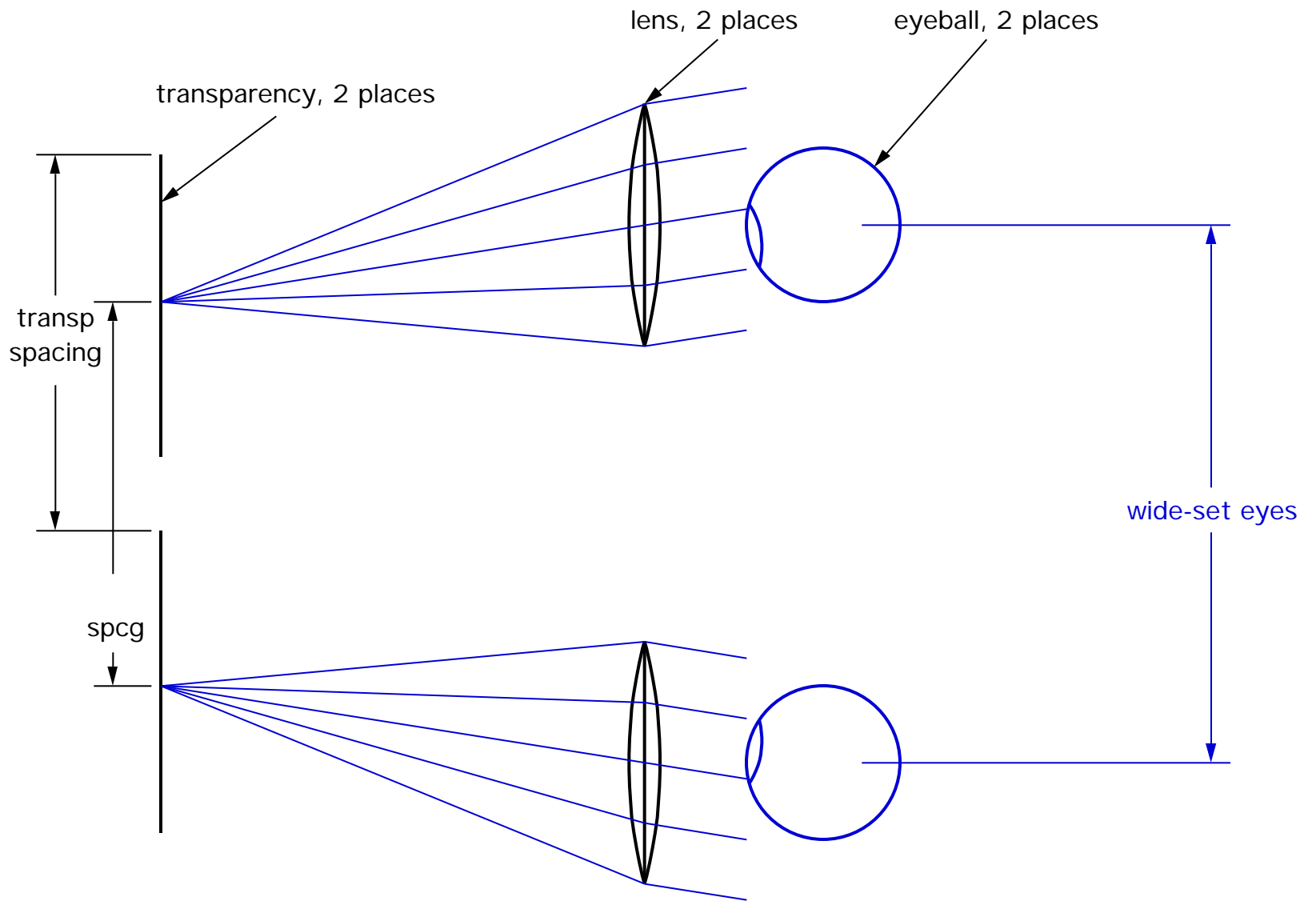
wide-set eyes

Case 3: lens spacing = wide-set eye spacing
(As you can see, you wouldn't adjust the lens spacing out quite this
far: construction shown is for purposes of illustration.) The eyes
converge, but vergence is perhaps the weakest of the depth clues,
so depth information is not drastically affected.

transparency, 2 places

lens, 2 places

eyeball, 2 places

transp spacing

spcg

wide-set eyes
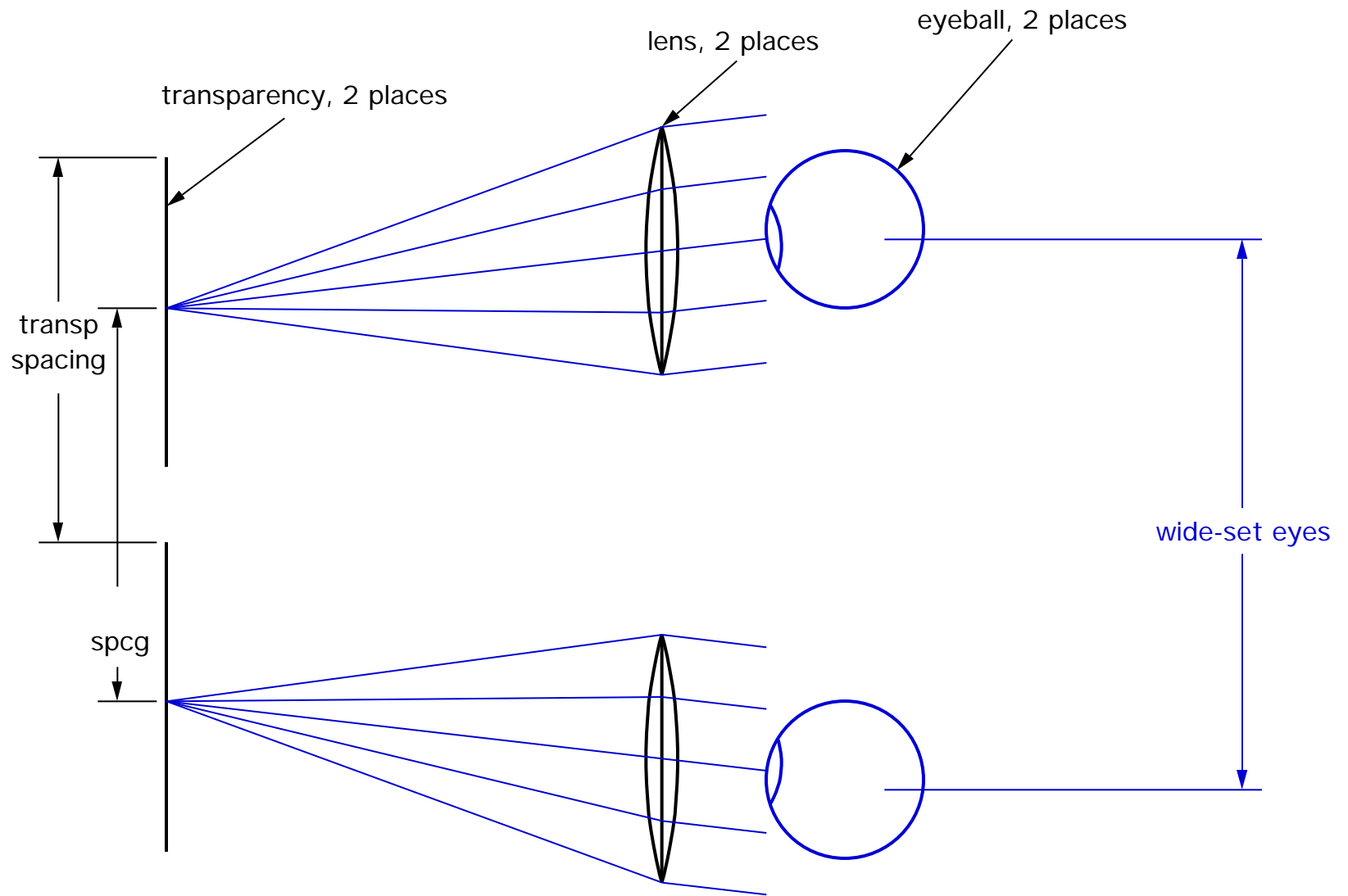
Observation & comment. This is about how far out you'd actually adjust the lens spacing. (You'd want to be looking approximately through the centers of the lenses.) Think about what part of the lens your line of sight passes through. The best part of the lens is near the middle because that's where the steepness is least. Low curvature is good, because lenses are made with spherical surfaces, which are only approximations of the expensive aspherical surfaces they should be. Also, if the eye is offset from the lens center, curvatures are off a bit. Wrong curvatures = aberrations = unsharpness. So, if your eye spacing is *radically* different from the infinity spacing, it may be better to adjust the lens spacing, even though it causes you a little pain and affects the depth information some. It would be better to have periscopes between the lenses and the transparencies so that the lens spacing matches the eye spacing AND the infinity spacing. I've not seen this done, though. As an alternative, you can make your own masks, set your own infinity spacings, and build your own viewer to match. I've done this, but find that people whose eye spacing is different from mine by, say, 3 mm, cannot tell that the lens spacing does not match their eye spacing.