
Last but not least

The mirror- (and the moon-) illusion

As Richard Gregory pointed out in his recent book, *Mirrors in Mind* (1997), an interesting size illusion occurs when you observe yourself in an ordinary wall-mirror and ask yourself how much of the surface of the mirror you would need to blot out (with, for example, paint) in order to completely, but only, hide the image of your head. If you are standing at arm's length or less, you can then test your impression by reaching out and covering that part of the mirror with your hand. The result will probably be surprising: If, for instance, you are at approximately arm's length, you will find that your clenched fist is large enough.

I submit that the reasons for our initial (erroneous) impression are twofold. First, because of size-scaling based upon depth cues, an impression of normal head size occurs. Second, that full-sized head appears to be *on or closely within* the surface of the mirror, so the impression is that a head-sized blot would be required (just as would be the case if a full-sized painting of a head were there, instead).

One curiosity here is that *two contradictory distances* are simultaneously involved, one as the basis for successful size-scaling (to wit, twice the distance from you to the mirror) and one evoked when the image is seen to be on the mirror (to wit, just the distance to the mirror since that is where the head seems to be). I have found that this paradox can be made dramatically evident in a variant of the basic demonstration: Observe yourself in the mirror through two short cylinders—the coiled fingers of your two hands will do—such that the edges of the mirror (and, therefore, cues to its distance) are hidden. When these blinders are suddenly removed, your image will appear to jump towards you because the cues to the second of the two distances are, then, suddenly restored.

There is an additional curiosity here: Not only will your face then look nearer, it will also look larger! Of course, this juxtaposition reminds us of the startling appearance of a newly risen moon, but there may be a *deeper* connection than that: the well-known size-scaling explanation for the apparently larger size of a horizon moon, while attributing the appearance to apparently greater distance, also acknowledges that that moon also looks nearer, a paradox which disappears if it is acknowledged that we may simultaneously register two different distances—one that is involved in size-scaling and another of which we are aware.⁽¹⁾

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References

- Day R H, Parks T E, 1989 "To exorcize a ghost from the perceptual machine", in *The Moon Illusion* Ed. M Hershenson (Hillsdale, NJ: Lawrence Erlbaum Associates) pp 343–350
- Gregory R L, 1997 *Mirrors in Mind* (Oxford, New York: W H Freeman)

⁽¹⁾ For additional demonstrations of this sort of duality, see Day and Parks (1989).

