

**Anisotropic space odyssey – perceived anisotropy of near distances**

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Perceived distance is anisotropic in a sense that people tend to perceive vertical distances above them as larger than horizontal distances in front of them. We argued that this effect might be due to gravity integration into our perceptual action schemes. Namely, if one reaches to grab something above, his movement opposes gravity and therefore it requires more effort than reaching for something on horizontal direction. If perceived distance above would be enlarged, it would help in action performance since it would ask for more effort. Surprisingly, in previous studies we gained perceived distance anisotropy on larger distances, 3m and larger, but not on near distances, such as 1m, which would be expected according to this hypothesis. Therefore, we performed two experiments, in a reduced cue situation, in which participants visually matched distances of two dim light stimuli on two directions, vertical and horizontal. Participants (14+13) were in an upright position and only difference between the experiments was in standard distances. In the first experiment standard distances were 1m, 3m and 5m, while in the second they were 0.4m, 0.6m, 0.8m and 1m. Results of the first experiment show a significant difference between two directions only on 3m and 5m distances, but not on 1m distance. On the contrary, results of the second experiment show significant differences between two viewing directions on all examined distances, 0.4m, 0.6m, 0.8m and 1m. We can conclude that the absence of significant difference in the first, as well as in all previous experiments, on closer distances is probably a statistical artefact, since errors grow with increasing the distance, which does not happen if we use closer distances only. Results are in line with hypothesis on gravity integration since they show anisotropy exists in far and in near space.

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