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Orientation of a spider (*Zygiella x-notata* Cl.) in its web. (Introduced by P. N. Witt) (Motion picture)

*Zygiella x-notata* builds an orb-web with a retreat usually located above the web (Web A). But the animal can be made to build a web from a retreat below (Web B). On both of these webs, the spider, after catching prey, goes back directly to its retreat.

If a Web A is turned around 180°, the spider goes to the prey without hesitation, then tries to go back to its retreat. During 1-10 minutes, it is obviously disoriented and wanders repeatedly in the original direction of the retreat. This spider is in a conflict between going in the direction it came from or going where it usually finds its retreat. Analysis of data shows that the latter factor is predominant but can be decreased by keeping the spider in the reversed position or by multiplying the numbers of trials. Then the spider will go back where it came from. Other experiments show the relative unimportance of the dragline and of the asymmetric structure of the orb in the orientation of the spider in its web. (Supported in part by a grant from N.S.F.)