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Face recognition under varying pose: The role of texture and shape

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The role of bilateral symmetry in face recognition is investigated in two psychophysical experiments using a Same/Different paradigm. The results of Experiment 1 confirm the hypothesis that the ability to identify mirror symmetric patterns is used for viewpoint generalization by approximating the view symmetric to the learned view by its mirror reversed image. The results of Experiment 2 show that the match between this virtual view and the test image is performed directly between the images. Performance drops dramatically if the symmetry between the intensity patterns of the learning and the testing view is disturbed by an asymmetric illumination, although the symmetry between the spatial arrangement of high- level features is retained. Experimental results are discussed in terms of their relation to existing approaches to object recognition.