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PII: S0028-3932(17)30342-1
DOI: http://dx.doi.org/10.1016/j.neuropsychologia.2017.09.016
Reference: NSY6498

To appear in: Neuropsychologia

Received date: 17 August 2017
Accepted date: 17 September 2017

Cite this article as: Tzvi Ganel and Melvyn A. Goodale, Still holding after all these years: An action-perception dissociation in patient DF, Neuropsychologia, http://dx.doi.org/10.1016/j.neuropsychologia.2017.09.016

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Still holding after all these years: An action-perception dissociation in patient DF

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Abstract

Patient DF, who has bilateral damage in the ventral visual stream, is perhaps the best known individual with visual form agnosia in the world, and has been the focus of scores of research papers over the past twenty-five years. The remarkable dissociation she exhibits between a profound deficit in perceptual report and a preserved ability to generate relatively normal visuomotor behaviour was early on a cornerstone in Goodale and Milner’s (1992) two visual systems hypothesis. In recent years, however, there has been a greater emphasis on the damage that is evident in the posterior regions of her parietal cortex in both hemispheres. Deficits in several aspects of visuomotor control in the visual periphery have been demonstrated, leading some researchers to conclude that the double dissociation between vision-for-perception and vision-for-action in DF and patients with classic optic ataxia can no longer be assumed to be strong evidence for the division of labour between the dorsal and ventral streams of visual processing. In this short review, we argue that this is not the case. Indeed, after evaluating DF’s performance and the location of her brain lesions, a clear picture of a double dissociation between DF and patients with optic ataxia is revealed. More than quarter of a century after the initial presentation of DF’s unique case, she continues to provide compelling evidence for the idea that the ventral stream is critical for the perception of the shape and orientation of objects but not the visual control of skilled actions directed at those objects.

Key words: Perception and action, visual-form agnosia, visuomotor control, two-visual streams
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