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Locating the Quiet Eye: Gaze variability as an insight to expert goalkeeping performance

Franks, B.^{1,2} , Jakeman, J.¹ & Roberts, W.³

¹Sport and Coaching Sciences, Sport, Health Sciences and Social Work, Oxford
Brookes University, UK

²University Campus of Football Business (UCFB), Wembley, UK

³School of Sport and Exercise, University of Gloucestershire, Gloucester, UK



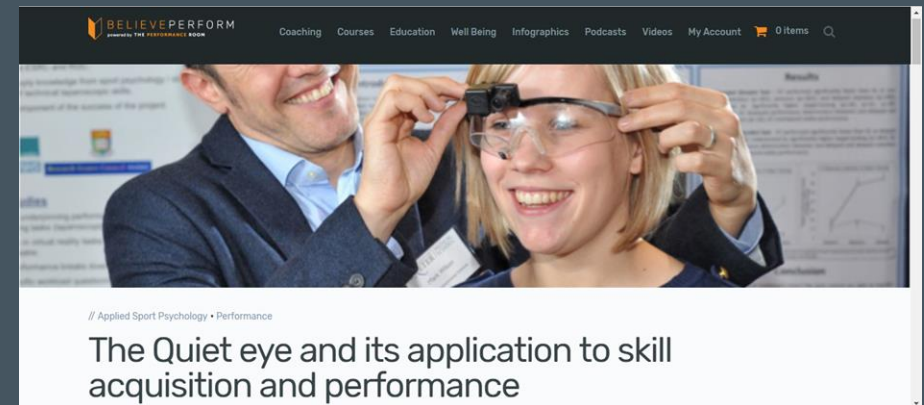
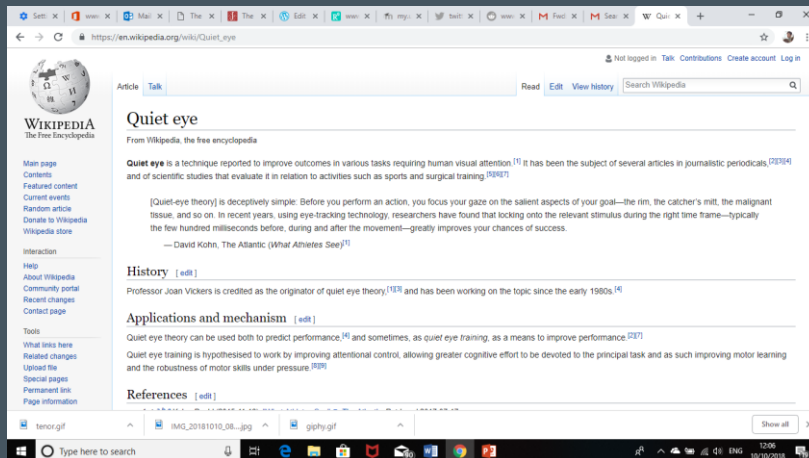
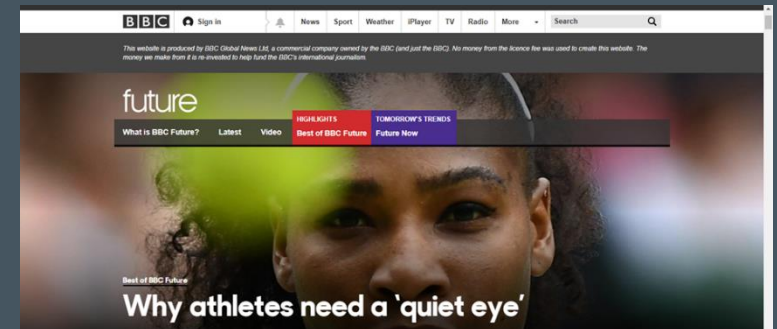
franksben1995@gmail.com



@ben_franks1

Its time we started making some noise about The Quiet Eye

The Quiet Eye... “the final fixation towards a specific location or object within 3* of visual angle or less, for a minimum of 100m/s (Vickers, 2016).



franksben1995@gmail.com



@ben_franks1

Keeping an eye on the ball

As early as 1954, Hubbard and Seng suggested that experts (in baseball) did not track the ball to contact.

Yet two main concerns arise in light of the above...

- 1) Trends in coaching interceptive actions have focused upon visual cueing around keeping an 'eye on the ball'
- 2) Broad conflicts in the perceptual cognitive research in goalkeeping

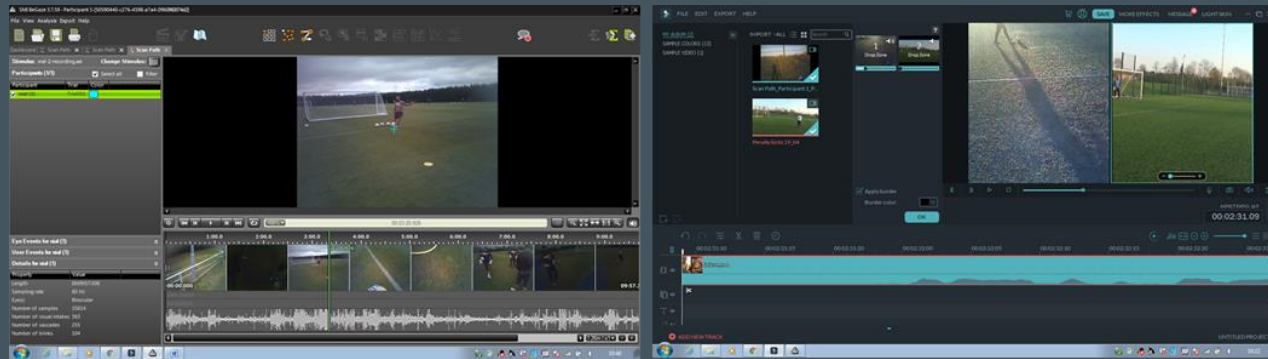


Aims of this study strand

Answering Davids and Araujo (2016) *ecological call to arms...*

1. Investigate whether significant individual variation exists in QE behaviour between professional goalkeepers
2. Investigate the QE location utilised by professional goalkeepers in representative experimental conditions

Method and Data



franksben1995@gmail.com



@ben_franks1

Study Design

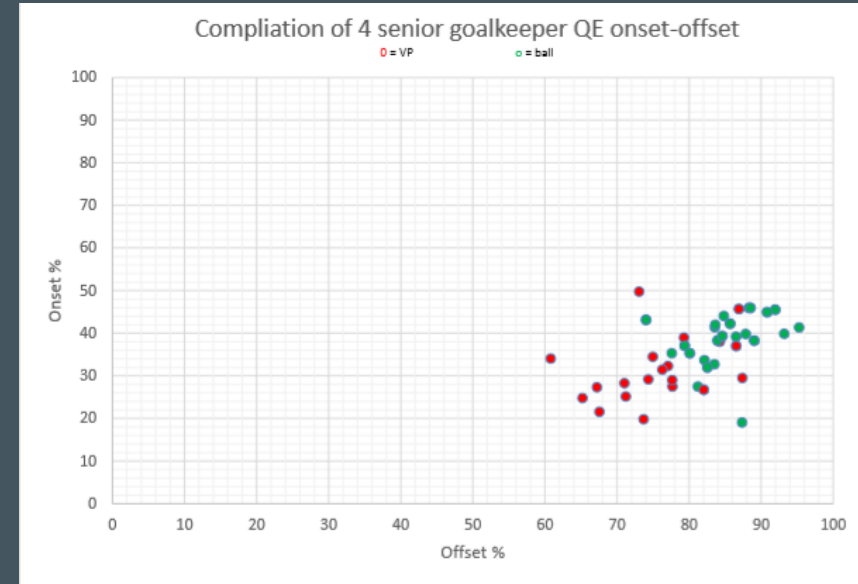
“...problems of perception, as of behavior, cannot be solved by setting up situations in the laboratory which are convenient for the experimenter but atypical for the individual. He asks us, the experimenters in psychology, to revamp our fundamental thinking. . . . It is an onerous demand. Brunswik imposed it first on his own thinking and showed us how burdensome it can be.” (Gibson, 1957 pp. 246)



What the fu... nctional variability?

Goalkeeper	QE Duration %	Location distribution %
1	44.47 $\pm$ 6.94	Ball = 38.46 // VP = 61.53
2	46.72 $\pm$ 9.03	Ball = 41.18 // VP = 58.82
3	45.68 $\pm$ 5.75	Ball = 71.43 // VP = 14.29
4	45.39 $\pm$ 5.49	Ball = 64.29 // VP = 35.71

QE Metric	Ball (Relative) %	VP (Relative) %	<i>t</i>
Onset	40.23 $\pm$ 3.67	32.76 $\pm$ 2.21	$t_2=4.61, P=0.04$
Offset	87.13 $\pm$ 2.26	77.99 $\pm$ 5.38	$t_2=4.89, P=0.03$



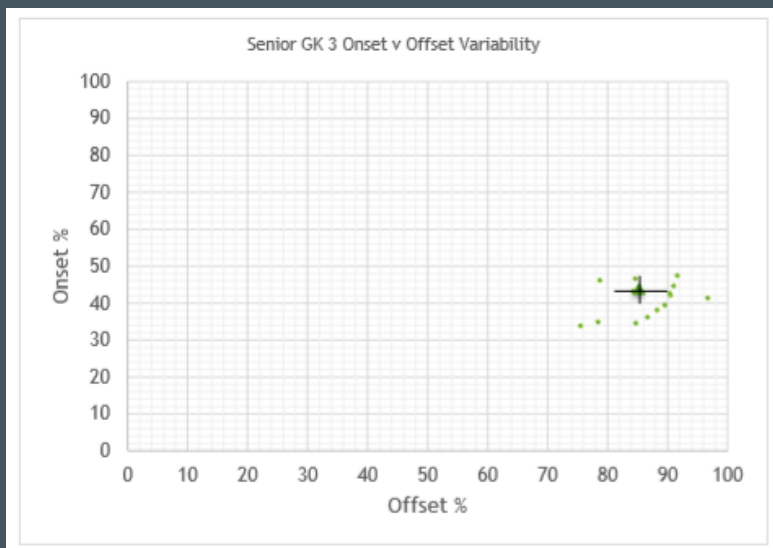
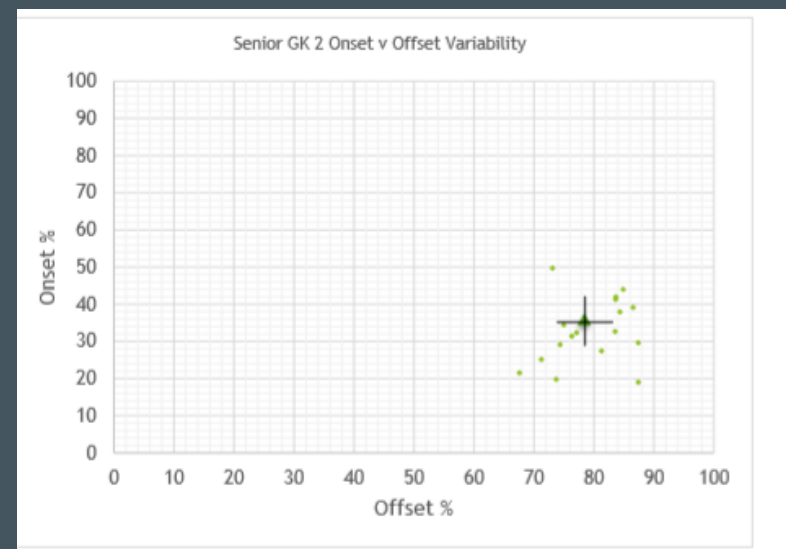
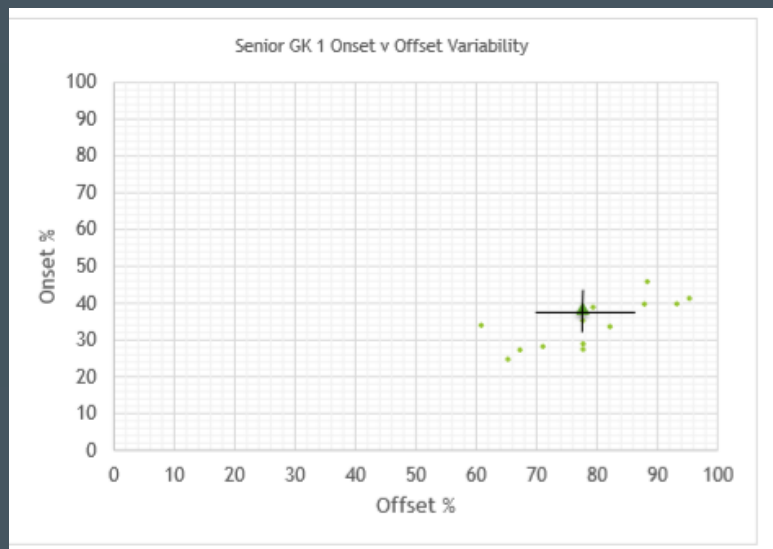
Professional goalkeepers exhibited functional gaze behaviours, utilising different information sources under different gaze strategies.



franksben1995@gmail.com



@ben_franks1



QE	
Onset	$F(3, 54) = 3.68, P = 0.02$
Offset	$F(3, 54) = 3.16, P = 0.03$
Duration	$F(3, 54) = 0.24, P = 0.87$

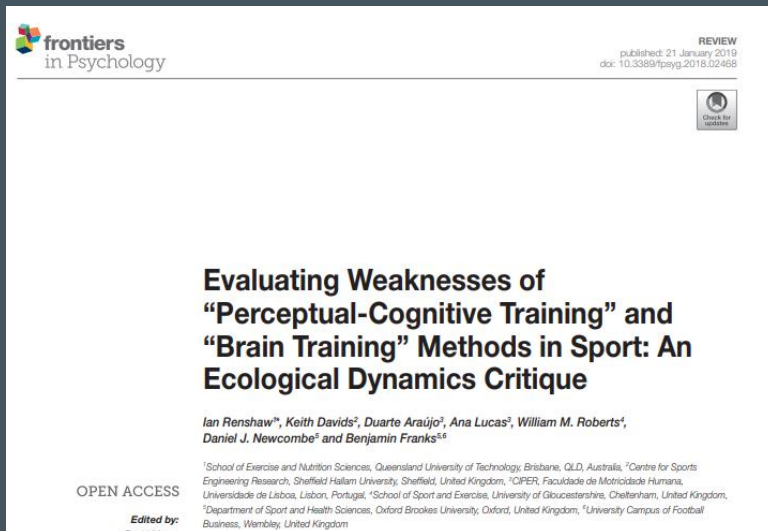


franksben1995@q



@ben_franks1

Output and Reflections



franksben1995@gmail.com



@ben_franks1