

Eye tracking in football: effectiveness of visual strategies in dribbling

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Eye tracking technologies become an inherent part of researches in sport science. The possibilities of eye tracking in football have been described by R. Vaeyens et al. (2007), G. Wood & M. Wilson (2010, 2011), A. Piras & J. Vickers (2011), M. Timmis et al. (2014) etc.

Participants

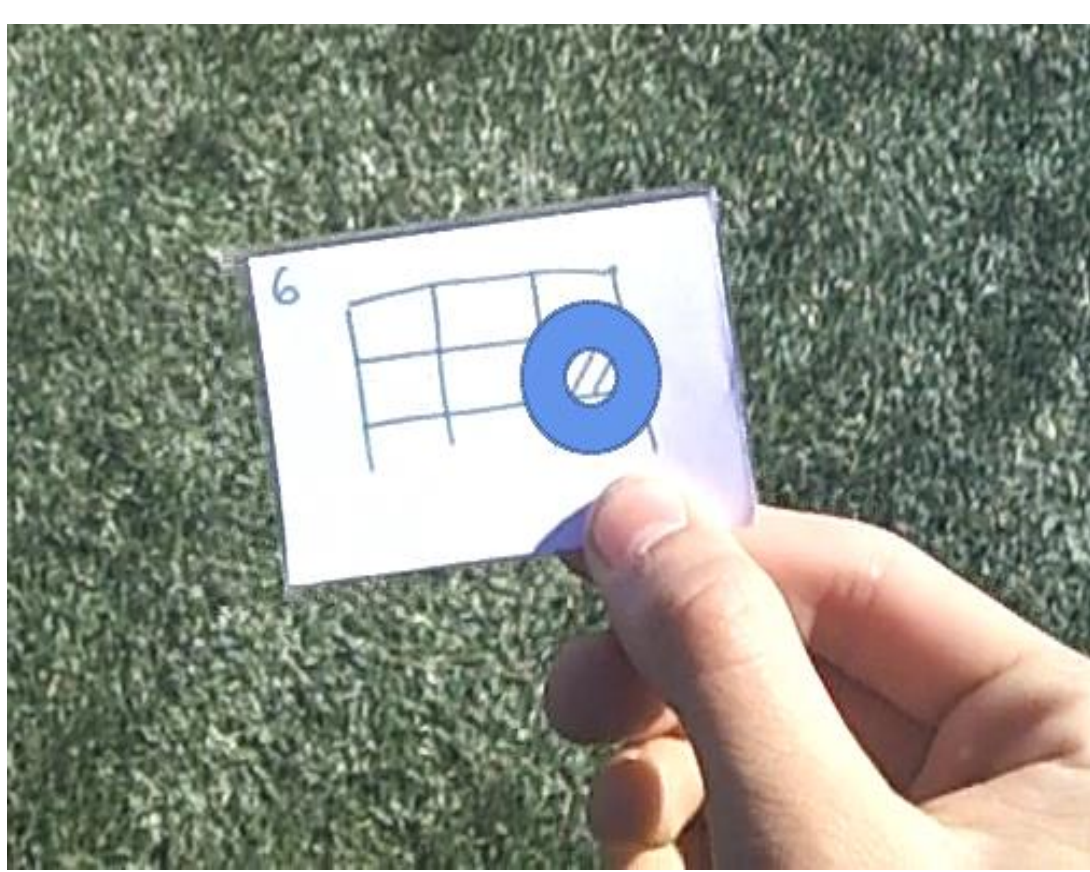
A total of 23 male footballers (The II division of Professional Football League) participated in the research. Mean age = $21,56 \pm 1,5$ y.o.



Method:

eye movement data were recorded using mobile eye tracking glasses "ETG SMI".

Procedure: experiment was conducted in natural settings. All athletes had an appropriate warm-up before testing. The task was to hit the distance



with the ball (using dribbling technique) and score a goal into specific area (randomly selected). Footballers performed task twice, the second attempt was analyzed



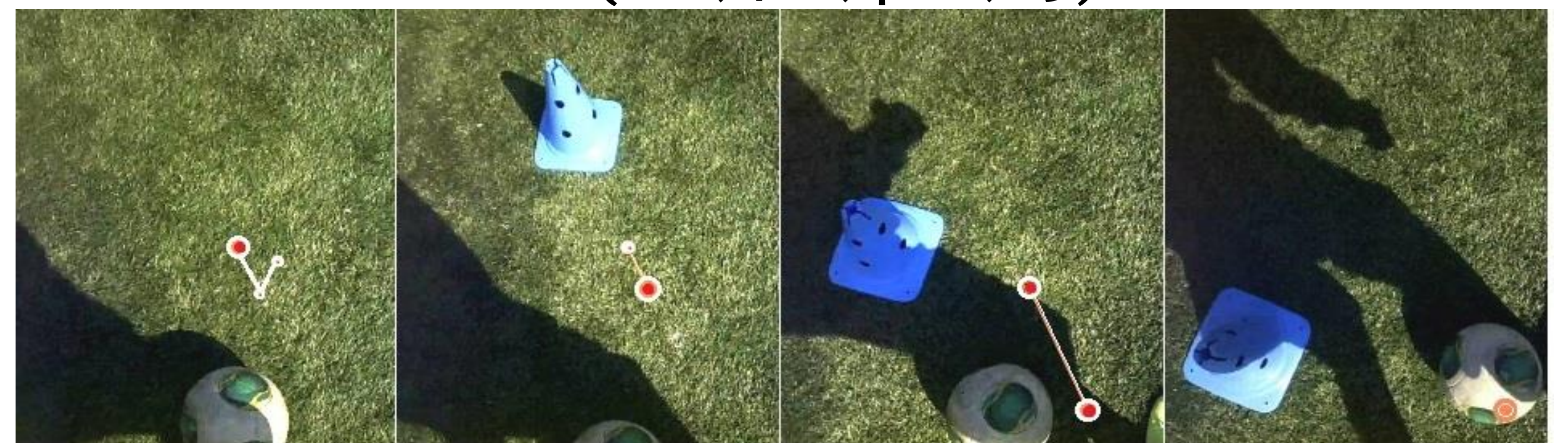
Results: the following eye tracking data were analyzed:

- number and duration of saccades, fixations, blinks; visual strategies.
- dribbling technique (speed & accuracy), shooting accuracy.

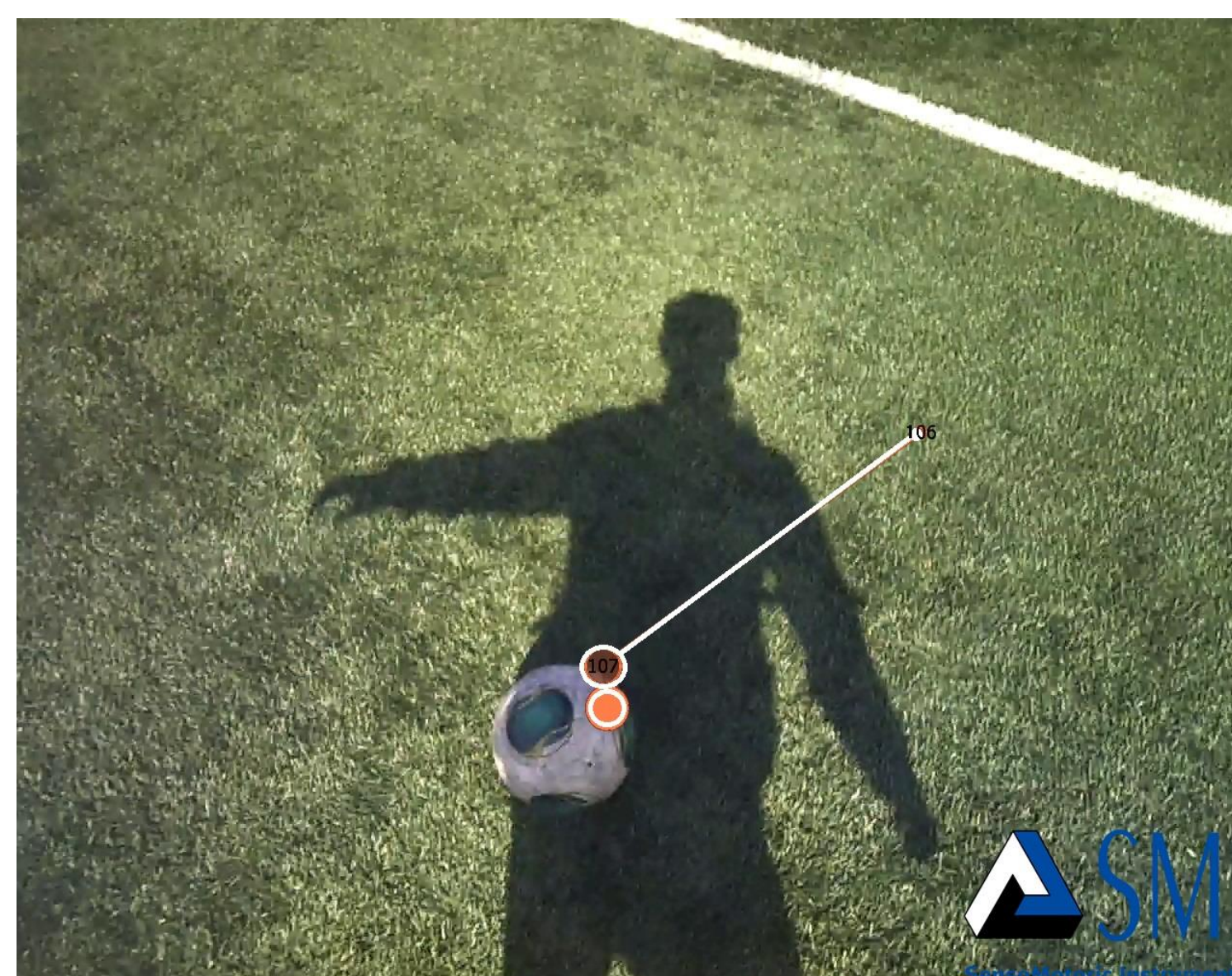
Pre-start routine: effective gaze patterns linked with short preview of distance, gaze fixations on the particular zone of the goal.



Dribbling: anticipation in gaze focus (a combination of anticipatory and regressive saccades). Dribbling technique positively correlates to fixation duration ($r=0,426$; $p<0,05$).

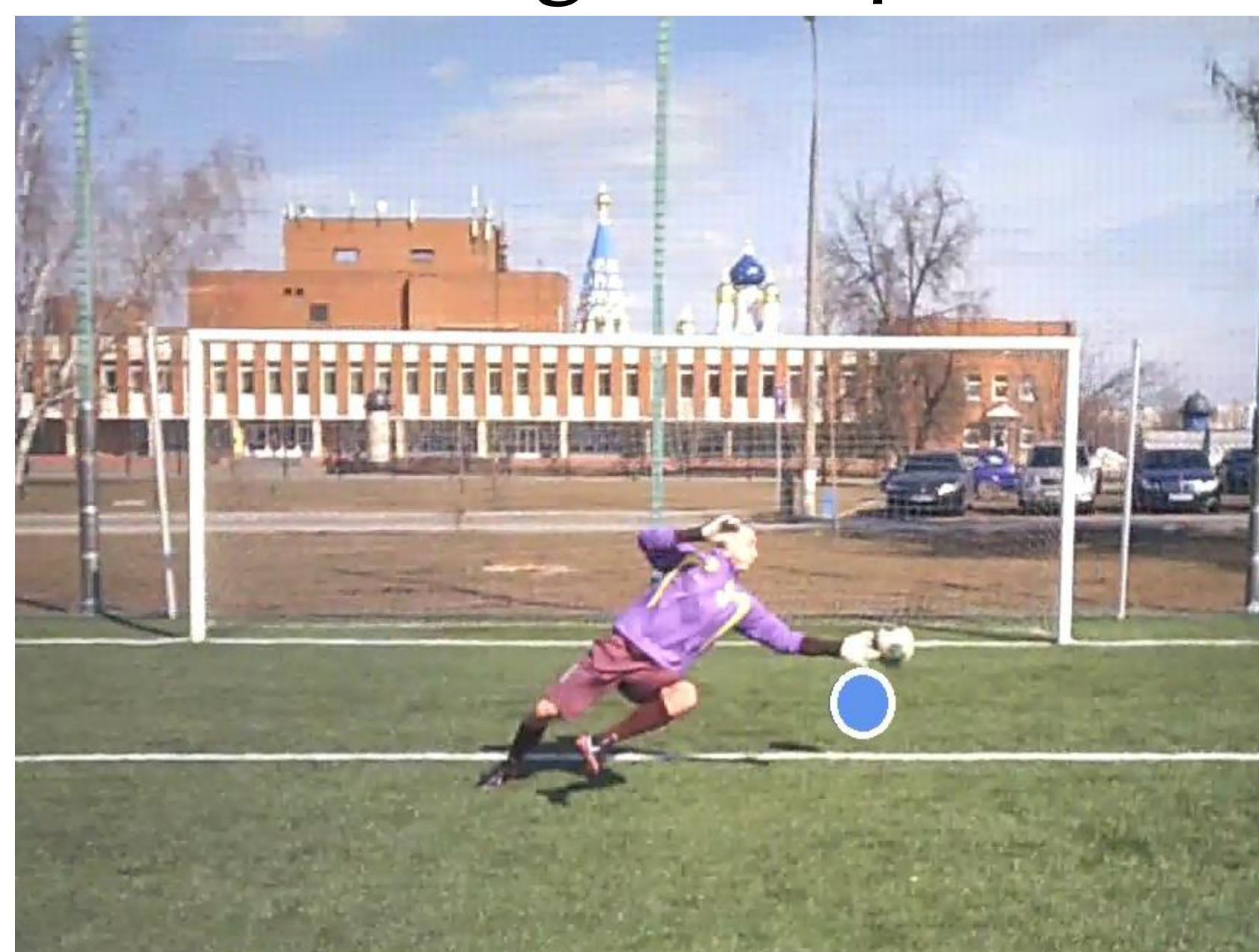


Execution of the kick: fixation duration



positively correlates to the shooting accuracy ($r=0,434$; $p<0,05$).

After execution of the kick: post-analysis of kick, fixations on goalkeeper actions.



Thus, via eye tracking scientists can investigate performance facets in football such as development of technique, sport attention, and anticipation.

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