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PLEASE SCROLL DOWN FOR TEXT.
Shhh… We’re talking about the Quiet Eye!

A Perceptual Approach to the Transfer of Skill: Quiet Eye as an Insight into Perception-Action Coupling in Elite Football Goalkeepers – Methodological and Feasibility Considerations

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Rationale and Aims

The Quiet Eye (QE) has become increasingly popular (Vickers, 2016), it details the final fixation towards a specific location or object within 3° of visual angle or less for a minimum of 100m/s (Vickers, 2016). It is reasonable to suggest that QE describes the variable in which to examine the relationship between perception and action (Panchuk and Vickers, 2006). A practice trial environments and compared to QE measures taken in a representative performance simulation. The practice trial environment design will be informed by principles of the Quiet Eye (QE), however, a vast proportion of this branch of research has highlighted the resultant gaze behaviour from the interacting constraints compared across trials and individual, rather than the varied QE design. QE location: Descriptive statistical analysis

QE duration: Trial (1,2, 3 or 4) x location x saved actions – factorial ANOVA

Variance judged via an effect size measure. The trial with the smallest effect size will be determined as the one with the highest level of fidelity to that of competitive performance.

The Infinite Variable and Beyond

There is a requirement to view the QE beyond an isolated and intervention approach, for which the QE could be used as a key perceptual tool to measure the transfer of skill from training to competitive performance (Panchuk et al., 2015; Davids & Araújo, 2010). Approaching the design of research practice for the study of perception must be counteracted by a key experimental research principle. Originally introduced by Egan (1935), representational design arguments for the dynamics of any experimental task must have some respectability for the theoretical framework being used.

Adopting a probabilistic functionalist perspective will promote the necessary scope of analysis towards QE behaviour under principles of Ecological Dynamics (Brunswik, 1956; Pinder, 2011). Due to the value of information in complex environments being sensory and emergent, practice and training conditions must illustrate a field of affordances that creates opportunities for relative game actions to occur (Brunswik and Ratten, 2014).

This study attempts to view the QE under conditions rich in variability, and in which truly representational dynamic conditions of the studied task. Through this, it allows the variability of the QE to be stretched further towards the design of sport training environments that can use the visual energy across available performance (Vickers, 2008).

Tunnel Vision

Williams, Kenne and Davids (2004) discussed how there may be benefit in understanding visual habits by any of the Interacting constraints that shape emergent behaviour. Key observations were made by Davids and Araújo (2010), in an interesting commentary presented by the authors, they questioned the QE scope, raising concerns that the QE has become the simple answer in understanding decision making.

A vast amount of the QE literature has utilised QE as a tool for perceptual training in sport. For example, QE training interventions have been used in an attempt to train the visual search strategies of non-experts within similar tasks used by their expert counterparts. Hills and Vickers (2001) study demonstrated the potential of QE based training interventions for which significant improvements were noted during both three simulations and intra-games. This is further supported by Scholten and Van Loon (1995) who used a 9° of intervention with individual players, for which improvements in game durations were noted. Holmes and Williams (2011) again employed a training intervention to demonstrate the use of QE as a tool for perceptual training; yet were both numerous constraints across the literature. Questions are still raised over the reproducibility of QE training interventions, as Copsey (2013) supported his commentary to Vickers (2010) that there are limited trials and short retention periods across a number of training interventions. It is clear from the literature that the design of training intervention based training methodologies. It is worth noting that the trials are related incidents of performance, with the tasks often being non-representative of the constraints that would occur in the natural task setting (Frisson et al., 2010).

While the use of QE in research, underpinned experimental design with developing constraints in an emergent environment, has been critical to understanding the condition of the QE, however, a vast proportion of this branch of research has highlighted the resultant gaze behaviour from the interacting constraints compared across trials and individual, rather than the varied QE design. QE location: Descriptive statistical analysis

Considerations and Critical Questions

It is worth considering that individual players may possess variability in eye movements and not follow optimum patterns for which has usually been the case in perceptual based research (Davids and Araújo, 2010). However, when looking at averaged gaze behaviour across environments, rather than assuming optimum patterns across individuals, we believe that inter-individual variance does not play an intrinsically role.

If a trial environment from the continuum is too close to the simulated game (in regards to high variability) then similar patterns will emerge naturally due to the task dynamics. Whilst gaze behaviour may remain near identical in nature of the QE, it may not be optimum for athletes to attune to the relevant invariants, thus leading. However, research remains in isolation of the environmental dynamic nature of a sport. The environment can be represented as a linear continuum (Brunswik’s Ecological Functionality) where the participant is able to influence the task and within this scope (Shannon and Weaver, 1949).

"The QE is defined as the final fixation towards a specific location or object within 3° of visual angle or less for a minimum of 100m/s” (p. 4)

Vickers (2016)