

## One shot, one chance: can a goalkeeper predict the kick strategy of a penalty taker?

Since 1978, 23 nations have had their fate determined by a penalty shootout in the FIFA World Cup. When the penalty taker walks up to the penalty spot, they have the dreams of a nation on their shoulders; they have one shot to score the goal while the goalkeeper has one chance to predict which direction the penalty taker is going to kick the ball. As the tension mounts, all pressure falls on the penalty taker to score the goal, however why do few expectations fall on the goalkeeper to save the goal? Much research has been conducted designed to help penalty takers score, however a new study published in the *Journal of Sports Sciences* has identified the characteristics of kick strategies used by penalty takers which may improve a goalkeeper's chance of making a save.

Penalty takers adopt one of two strategies: the keeper-dependent strategy, where the penalty taker anticipates the movement of the goalkeeper before intending to kick the ball in the opposite direction, and the keeper-independent strategy, where the penalty taker decides on a target area to kick the ball before the run-up and maintains that decision irrespective of the goalkeepers' actions. However, despite the crucial importance to a goalkeeper's success, no method for identifying penalty kick strategies has been available until now. In their article, "[The development of a method for identifying penalty kick strategies in association football](#)", Noël. et al use experiments based on footage of penalties from the FIFA World Cup's (1986 - 2010) and UEFA championships (1984 – 2012) to develop the first validated method which a goalkeeper can use to identify the kick strategy of their opponent and therefore improve their chances of countering it. The authors identified that the two kick strategies have different characteristics in their run up, looking behaviour, kicking technique, preparation time and use of deception. They also proved that, despite the equal success rate of both strategies, the keeper-independent strategy was more popular in these competitions.

Although many goalkeepers already keep records about opponents' kicking preference, such as direction and speed of the kick, identifying which kick strategy a penalty taker prefers can help the goalkeeper predict where the penalty taker is likely to kick the ball, improving their chances of making a save. A penalty taker who tends to slow down, uses shorter strides and looks frequently at the goalkeeper is likely to use a keeper-dependent strategy. It is advisable for the goalkeeper to wait longer before starting to dive. By contrast, if a penalty taker runs up steadily, while largely ignoring the goalkeeper, a keeper-independent strategy is more likely. The goalkeeper is then advised to dive early to the kicker's natural side.

The authors conclude that goalkeepers can use these characteristics to improve their chances of saving a penalty as they can adjust their behaviour depending on the penalty takers kick strategy. With two FIFA World Cup finals decided on the outcome of penalty shootouts, that one crucial save could be the difference between lifting the trophy, and dashing the dreams of a nation.

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