

The Application of Game Theory in Analyzing the Table-Tennis

Skills---A Case Study of National Women's Singles 9th

Consecutive Championship: Huang Yi-Hua

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Abstract

The purpose of this study was to investigate the three-stage skill performance in women table tennis player: Huang Yi-Hua. It was used Game Theory to analyze the effects of scoring probability in three-stage skill on Huang Yi-Hua and other top players. It was anticipated to reveal the winning strategies, enhancing the efficiency of training, and whole competitive abilities. This study was to collect all the International Open events from 2008 to 2009 concerning Huang Yi-Hua. It was to analyze the score rating in three-stage skill of Huang, Yi-Hua and other top players, which used Game Theory to analyze the scoring probability. The results showed that the score rating in three-stage of Huang Yi-Hua was as follow and in order: stalemate period (34.8%), attack after service period (33.5%), service-receive and attack period (31.6%). The results illustrated that Huang, Yi-Hua was adept at scoring in stalemate period of three-stage skill, but was deficient in service-receive and attack period. It revealed that Huang, Yi-Hua' abilities of controlling and anti-controlling in attacking after receiving stage were weak and the defense in fourth stage was deficient. It concluded that Huang Yi-Hua should enhance the skills of flip and flick, and ball-placement awareness; meanwhile, increasing attacking and driving actively. The author suggested that if Huang, Yi-Hua pays more attention to the set forth actively and reversing attack and defense in the stalemate period after the three-stage, she could show up in the International events.

Key words: Table tennis, Game Theory, three-stage skills of table tennis, developmental trends